Pharmacists' and Patients' views and feedback on Italian Medicines Use Review (I-MUR)

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Rationale, aims and objectives: Although medicine review services are offered by community pharmacists in many countries, they are non-existent in Italy. A novel intervention, the Italian Medicines Use Review (I-MUR) was developed for patients with asthma, aiming to improve their medicines use. The aim of this study was to obtain pharmacists' and patients' views on the acceptability of the I-MUR service provided by community pharmacists to asthma patients in four regions of Italy.

Methods: Pharmacists' expectations, experiences and attitudes to delivering the I-MUR were obtained through questionnaires distributed before and after delivering the I-MUR, plus focus groups. Patients' views were obtained via questionnaires, distributed by the pharmacists and returned anonymously.

Results: Seventy-four pharmacists provided the I-MUR service to 895 asthma patients; 49 pharmacists completed both questionnaires, 53 participated in focus groups and 246 patients returned questionnaires. Barriers anticipated most frequently by pharmacists before the I-MUR were lack of time (53%) and lack of co-ordination with other health professionals (61%), while lack of financial compensation was identified by 37%. Lack of co-ordination proved the most common actual barrier (88%), with lack of financial compensation being cited less frequently after providing the intervention (8%). Ninety-six percent of pharmacists anticipated providing both education on inhaler technique and medication counselling, but in practice slightly fewer had provided these (90% and 86% respectively). Focus groups highlighted a lack of relevant undergraduate education to support medication review and structural barriers within some pharmacies, but described positive patient feedback and desire to extend the I-MUR. Patients' respondents were positive; 62% indicated the reason for having an I-MUR as making sure that they were using medication correctly, 75% considered they benefited from it and 86% would recommend it to others.

Conclusions: The I-MUR service was perceived positively by both pharmacists and patients, supporting the extension of medicine review services to community pharmacists in Italy.

Introduction

Community pharmacists play an important role as health care providers in many countries, such as USA, Canada, Australia, UK, Denmark, Netherlands, and Switzerland, where pharmacists providing pharmaceutical care and/or cognitive pharmaceutical services are remunerated by public or private payers. They are easily accessible, because pharmacies are situated in both small and large centres of population and in rural areas. In England 89% of the population has access to a community pharmacy within 20 minutes' walk,[1] and, although no similar data are available, accessibility is similar in Italy.

While cognitive pharmaceutical services are increasingly common across the world, in Italy, no services were commissioned or funded. In 2012, the Italian Pharmacists' Federation (FOFI) decided to support a project aiming to introduce the first cognitive pharmaceutical service in Italy. This new service was based on the English Medicines Use Review (MUR) service which was introduced in 2005,[2] but was specifically tailored for patients with asthma. It was called the Italian Medicines Use Review (I-MUR) and involved a bespoke pharmacist-led consultation which consisted of a systematic, structured interview, conducted in a private room within the pharmacy, which covered asthma symptoms, medicines used, attitudes towards medicines and adherence.

The development, testing and evaluation of I-MUR, as with any new intervention, required that acceptability of the service to the two main stakeholders, pharmacists and patients, be assessed. Many studies in England have sought the views of patients on medication review services, delivered by pharmacists in both general practice surgeries and in community pharmacies,[3-6] while other studies have sought the views of pharmacists.[4,7] Few studies have reported the views of both pharmacists and patients on pharmacy services,[8,9] although one study in England compared the views of pharmacists with the general public on medication-related services,[10] including the MUR. No studies have explored the views of either patients or pharmacists on any services provided by community pharmacists in Italy.

The study aimed to obtain pharmacists' and patients' views on the acceptability of the I-MUR service provided by Italian community pharmacists.

Methods

Setting and participants

All community pharmacists who took part were working in one of the four regions of Italy where the study took place: Brescia (Lombardia), Torino (Piemonte), Pistoia (Tuscany), Treviso (Veneto). All had undergone screening by their local pharmacy organisation to ensure the suitability of the individual and their pharmacy premises for delivering the I-MUR.[11] Pharmacists received training in the provision of I-MUR before recruiting patients; then they recruited potential patients for the I-MUR service who

were adults with a diagnosis of asthma, for at least six months and using a prescription(s) for asthma or drugs for obstructive airways disease.

Pharmacist views were obtained by two methods: questionnaires distributed before and after delivering the I-MUR, followed by focus groups. Patient views on the I-MUR were obtained via a questionnaire survey, distributed by the pharmacists, nine months after delivery ceased (October – November 2013).

Instruments

Pharmacist questionnaire

A questionnaire was developed based on an instrument used in a previous study in England (Jaffray et al. 2007).[12] It was divided into three sections: pharmacists' demographic details; expectations and experiences of delivering the I-MUR service; views about the I-MUR service using a five-point Likert scale plus confidence and comfort in delivering the intervention. Expectations were sought by: i) requesting respondents to select any issue from a list, developed from previous studies, which they thought may be potential barriers to providing the I-MUR and ii) to select the types of pharmaceutical care issues (PCIs) they thought may be identified in the patients, using a validated classification system.[13] The post-I-MUR questionnaire asked respondents to select the actual barriers and actual PCIs they thought they had identified during I-MUR provision from the same lists. The pre-I-MUR questionnaire was distributed using the Qualtrics© on-line system one week prior to the I-MUR training (September 2012). The post-I-MUR questionnaire was distributed using the same method one week after delivery ceased (February 2013).

Pharmacist focus groups

Six key areas were used as a topic guide covering: a) feedback received from patients, b) pharmacists' views about I-MUR, c) limitations of the service, d) barriers to providing the service, e) views on training provided, f) possible future application and developments.

Patient questionnaire

A questionnaire previously developed by Krska et al. (2009)[14] for users of the English MUR service was adapted to capture patients' view and experience with regards to the I-MUR service received. The questionnaire included patients' demographic information, a list of potential benefits from which patients were asked to select those they anticipated the I-MUR may result in and a series of 19 statements about the I-MUR service received, which patients were asked to rate using a five-point Likert scale: strongly disagree to strongly agree. In addition, it asked respondents to consider whether the I-MUR could be improved, if they would consider having another I-MUR and would recommend it

to others, each with space for adding reasons for their responses. A final open-ended question sought other comments. All pharmacists distributed paper questionnaires to all patients for whom they provided an I-MUR in October 2013, with envelopes for return to the pharmacy. Pharmacists sent the returned envelopes to their local pharmacy body for forwarding to the research team.

Conduct of the focus groups

Focus groups were held for pharmacists in each of the four regions of Italy, in February 2013, after pharmacists had stopped conducting I-MURs and completed the post-I-MUR questionnaire. Each focus group was audio recorded with permission, obtained as part of the pharmacists informed consent process at the start of the project. AM conducted all focus groups, using the topic guide, and a second pharmacist took field notes.

Data Analysis

Pharmacist Pre and Post I-MUR questionnaire

Quantitative data gathered with the online questionnaires were analysed using SPSS 20. McNemar's or Fisher's exact tests were used to compare responses to the questions covering expectations/experiences. Paired t-tests were used to assess changes in confidence and comfort with providing I-MUR.

Pharmacist focus groups

All focus group transcripts were in Italian. Framework analysis was used, based on the areas included in the topic guide. The verbatim transcripts of the focus groups were coded in QSR NVivo version 10, according to each topic area. Once the analysis was completed in Italian, the findings were translated into English by AM.

Patient questionnaires

Quantitative data gathered from returned patients' questionnaires were manually entered into the online platform, enabling a preliminary descriptive statistical analysis, and then exported into SPSS version 21. Goodman and Kruskal's gamma (γ) was used to assess the strength and direction of association that existed between two variables. Responses to free-text boxes embedded in the questionnaire were analysed thematically.

Ethical approval, consent and anonymity

The research was approved by the University of Kent Faculty of Science Research Ethics Committee. Pharmacists, after having assessed patients' eligibility for the study, provided an information letter and obtained written consent for the I-MUR. These were retained along with patient contact details within the pharmacies, enabling pharmacists to distribute the questionnaire survey. Patients were instructed to return the questionnaire to their pharmacy in a sealed envelope, ensuring that their responses remained unknown to the pharmacist who provided the I-MUR. Implied consent was assumed by

return of completed questionnaires from both pharmacists and patients. Written consent was obtained from all pharmacists who took part in focus groups.

Results

Response rates

Eighty pharmacists were enrolled, of whom 75 began the study and 74 (92.5%) completed it by delivering at least one I-MUR. Of the 74, 49 pharmacists (66%) returned both questionnaires allowing comparisons to be made pre- and post-delivery. The total number of pharmacists who participated in the focus groups was 53. Two focus groups were conducted in Treviso (Veneto region) involving five and six participants; three in Brescia (Lombardia region) each with six pharmacists; one in Torino (Piemonte region) with nine participants and three in Pistoia (Toscana region), with six, five and four participants. Out of the 895 patients who received the I-MUR service, 246 returned the completed questionnaire (27.4%).

Pharmacist questionnaires

There were similar numbers of pharmacists who provided the I-MUR across all four regions, however the proportion who returned both questionnaires from Treviso was lower than for other regions. (Table 1) In all other respects, the demographics of questionnaire respondents was representative of the pharmacists who provided the I-MUR.

<<Table 1>>

Table 1 Demographic characteristic of pharmacists delivering I-MUR and completing questionnaires

Characteristics		Number delivering I-MUR (%)	Number completing questionnaires (% of those delivering)
Place of Work	Brescia	19(25.3)	15(79.0)
	Pistoia	17(22.7)	12(70.6)
	Torino	20(26.7)	14(70.0)
	Treviso	19(25.3)	8(16.3)
Gender	Male	35(46.7)	24(68.6)
	Female	40(53.7)	25(62.5)
Age	24-30	10(13.3)	8(80.0)
	31-40	20(26.7)	11(55.0)
	41-50	25(33.3)	17(68.0)
	51-60	16(21.3)	11(68.8)
	61-65	2(2.7)	1(50.0)
	>65	2(2.7)	1(50.0)
Role	Owner	5(6.7)	2(40.0)

	Owner & Manger	34(45.3)	21(61.8)
	Manager	8(10.7)	6(75.0)
	Support Pharmacist	25(33.3)	18(72.0)
	Locum	3(4.0)	2(66.7)
Type of business	Independent	64(85.3)	43(67.2)
	Small chain (1-4)	4(5.3)	2(50.0)
	Large chain (5 or more)	7(9.3)	4(57.1)
Working hours	Full time	72(96.0)	46(63.9)
	Part time	3(4.0)	3(42.9)
Years since qualified	<5yr	9(12.0)	6(66.7)
	5yr-15yr	24(32.0)	16(66.7)
	>15yr	42(56.0)	27(57.4)
Postgraduate qualification	Certificate	7(9.3)	4(57.1)
	Diploma	7(9.3)	5(71.4)
	Master	7(9.3)	6(85.7)
	Specialisation	8(10.7)	5(62.5)
	Doctorate	2(2.7)	2(100)

Potential and actual barriers to delivery

All the potential barriers listed in the questionnaire were selected by some of the 49 pharmacist respondents before provision of the I-MUR, with those selected most frequently being lack of time (26; 53%) and co-ordination with other health professionals (30; 61%). Both issues were found by more pharmacists to be actual barriers to I-MUR provision after delivering the service than had been anticipated, with the proportion citing lack of co-ordination rising to 43 (88%) (p= 0.01). Lack of personnel and resources was also cited slightly more frequently after I-MUR provision (11; 22%) compared to 16% (n=8) before I-MUR. Meanwhile lack of financial compensation (15; 37% vs 4; 8.%), knowledge and skills (24.5% vs 14.3%), lack of clinical tools (22.5% vs 16.3%) and lack of space (6.1% vs 0) were all regarded as barriers by fewer pharmacists after providing the I-MUR than they had anticipated.

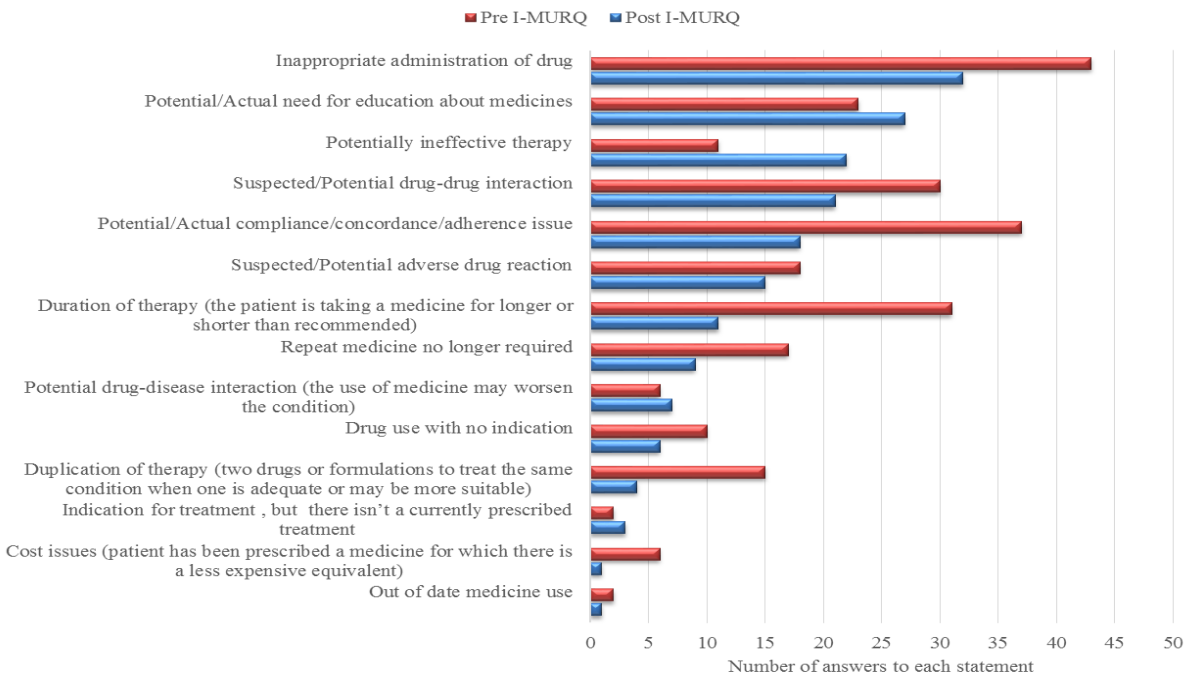
Expectations and experiences of PCIs and interventions

Pharmacists selected all 14 different types of PCIs listed in the questionnaire as possibly being identifiable before provision of the I-MUR, with those selected most frequently being inappropriate administration of drug (58.1%), potential/actual compliance/concordance/adherence issue (50%) and duration of therapy (41.8%) See Figure 1. Two types of PCI were considered to have been found more frequently after delivering the service than had been anticipated; these were potentially ineffective therapy, which was anticipated by 22% (n=11) but found by 45% (n=22)of respondents, and potential/actual need for education about medicines, anticipated by 47% (n=23) but found by 55% (27)

(p=0.06). For most types of issues fewer respondents in the post I-MUR Q judged they had been found compared to what was anticipated, most notably fewer pharmacists (18; 37%) identified potential/actual compliance/concordance/adherence issues than anticipated (37; 76%) (p<0.01). Pharmacists anticipated they would provide education on inhaler technique (47; 96%) and medication counselling (47; 96%) most frequently but they confirmed that these two types of intervention were actioned by 44 (90%) and 43 (86%) respectively). Referrals to prescribers were higher than anticipated (43& versus 29%), whereas asking prescribers to amend doses, providing information to prescribers and referrals to other health professionals were all identified as occurring less frequently than anticipated.

<<Fig.1>>

Fig.1 Pharmaceutical Care Issues anticipated before and experienced during provision of I-MURs



Pharmacists' perceptions of I-MUR before and after provision

Most pharmacists felt comfortable with their involvement in the I-MUR service before it started, while the majority considered they needed a little more knowledge/skills (Table 2). Knowledge and skills increased after delivery, but the number requiring more knowledge also increased slightly. All agreed both before and after delivery that the I-MUR could improve patients' use of medicines, but several were less convinced about its value in extending their role and enhancing patients' understanding of their medicines than they had been prior to delivering the service.

<<Table 2>>

Table 2 Pharmacists' perceptions of I-MUR service before and after provision

		Pre I-MUR Q			Post I-MUR Q		
Pharmacists' perceptions	**N**	**Strongly agree/agree**	**Neither agree nor disagree**	**Strongly disagree/disagree**	**Strongly agree/agree**	**Neither agree nor disagree**	**Strongly disagree/disagree**
Providing I-MURs is an opportunity to extend your role and make better use of your professional judgement	49	48	1	0	47	2	0
I-MUR services will enhance pharmacists understanding of their patients view on medicines.	49	48	1	0	44	5	0
Providing I-MURs is a waste of time for me.	48	0	5	43	0	2	46
Providing I-MURs is a waste of time for my patients.	48	0	1	48	1	3	44
I-MURs can improve patients' use of medicines.	49	49	0	0	49	0	0
		Confident	**Little /more needed**	**Much more needed**	**Confident**	**Little /more needed**	**Much more needed**
Do you feel you have enough knowledge to carry out the I-MUR service?	49	2	46	1	4	42	3
Do you feel you have enough skills to carry out the I-MUR service?	49	7	41	1	12	33	3
		Very/fairly comfortable	**Neutral**	**Some reservations**	**Very/fairly comfortable**	**Neutral**	**Some reservations**
Do you feel comfortable with your involvement in the I-MUR service?	49	40	5	4	44	3	2

Pharmacist focus groups

The results are presented under the six main topic areas used in the topic guide.

a) Feedback from patients

The feedback which pharmacists reported receiving from patients for whom they had provided an I-MUR was positive in all nine focus groups across all four locations, confirming that the project was well received by their patients.

"We achieved great results in our pharmacy, one of our patients who came from Morocco told me that I was the first health care practitioner explaining how to use his asthma medication". (Treviso FG2)

Pharmacists themselves considered that the I-MUR service was very useful in improving patient's use of their medication and comments from patients endorsed this.

"I have to say that patients who participated in the study were very happy, they felt involved and came back telling me that they had improved and they were feeling better" (Torino FG)

"I received a very good feedback from one of my patients; before the I-MUR consultation he did not know how to use salbutamol inhaler, after the consultation the patient confirmed that his inhaler technique has improved". (Treviso FG1)

There was a view that elderly people wanted more attention and wanted pharmacists to listen to their experiences of using medicines.

b) Pharmacists' view about I-MUR

The project as a whole was rated as very interesting, with a completely different approach towards the patient compared to usual Italian pharmacy practice. The pharmacists were enthusiastic and suggested that this was the right way for pharmacists to practise. Some expressed pride when conducting the I-MUR interview, suggested also to organise meetings between pharmacists who provided the I-MUR service and the ones who did not to enable sharing of experience and best practice.

Although the I-MUR service was perceived by pharmacists as a great opportunity to provide a new service in a systematic and structured way, it was also seen as a challenging experience. Most pharmacists however confirmed that they felt comfortable providing the service, but the aim of the intervention needed clarification.

"I see I-MUR as a very useful tool for patient follow up, but I cannot see it as a tool for changing therapy". (Treviso FG2)

c) Limitations for providing the I-MUR

Time management was one of the most common limitations raised across all the focus groups. The speed at which prescriptions and counselling have to be dispensed /given to patients could often play a big role, because some patients did not want to wait and therefore were not able to attend the I-

MUR session. Some pharmacists were organised and looked at the items/prescription they had previously dispensed to identify potential I-MUR candidates, making phone calls to book an appointment. Some pharmacists highlighted they did not feel confident in providing the I-MUR service because of lack of experience. In one FG time was raised as a limiting factor, while in another the suggestion was made that all staff should be involved and all pharmacists should be trained in the I-MUR intervention. The layout of pharmacy premises was also described in more than one FG as not being structured for this type of service.

d) Possible barriers to providing the I-MUR

It was clear from FG discussions that this project was essentially defining a new role for the pharmacists who provided the I-MUR. . The information flow between community pharmacists and GPs was identified as one of the main barriers. GPs seemed not to get very much involved in I-MURs, but did not discourage pharmacists who wanted to provide it. Hospital consultants in asthma care, who were involved in training, in contrast were perceived as supporting pharmacists who provided the I-MUR. Some pharmacists who worked in an area with lots of immigrants found difficulties in communication because of the language barrier, while recognising that this could play an important role in adherence to treatment.

e) Views on the training provided

The vast majority of pharmacists appreciated the training provided, and recognised the need for specific training in order to provide this intervention. Only one pharmacist in one focus group suggested that the training was not enough. Some pharmacists added that it was like a revaluation of the profession, explaining that since they qualified 15 or more years ago, their university education had not provided them with the background needed.

"I do not feel that I have enough knowledge and I believe that the training that I received from the university was not adequate". (Brescia FG1)

There was a view that new teaching models, subjects and syllabi are needed more aligned with the new health care requirements, suggesting that I-MUR could be the beginning of an implementation programme for university education too. Pharmacists confirmed that even now advanced pharmacy services such as this are not taught at university level in Italy.

"This is music for my ears, we need a much better training which must begin at undergraduate level; the Italian University has to change!" (Pistoia FG2)

f) Possible applications and developments

The provision of training and a clear protocol on how to provide the I-MUR service was welcomed by many participants and regarded as necessary for successful delivery. Pharmacists' expectations were that the I-MUR would be extended to other clinical areas.

"provide a structured training package for other diseases as well" (Pistoia FG1)

All groups agreed that I-MUR was about professionalism; this activity could enhance their professional status allowing them to share best practice and information with GPs.

Patient views

The demographic details of patients who received the I-MUR are shown in Table 3, along with those of questionnaire respondents. There were high proportions of questionnaires received from Brescia and fewer from Torino, however in terms of age and gender, the respondents were representative of the population who received the I-MUR. One patient did not submit demographic information.

<<Table 3>>

Table 3 Demographic characteristics of patients (n=245)

Patients characteristics		**Had I-MUR N(%)**	**Provided feedback N(%)**
Place of residence (n=245)	Brescia	202(22.5)	76(31)
	Pistoia	259(28.9)	68(27.6)
	Treviso	224(25.1)	63(25.7)
	Torino	210(23.5)	38(15.5)
Gender (n=245)	Male	404(45.1)	106 (43.3)
	Female	419(54.9)	139 (56.7)
Age (n=244)	18-30	87(9.7)	20(8.2)
	31-40	83(9.3)	20(8.2)
	41-50	128(14.3)	26(10.7)
	51-60	146(16.3)	48(19.7)
	61-70	185(20.7)	51(20.9)
	71-80	185(20.7)	58(23.8)
	>80	78(8.7)	21(8.6)

Views and experiences of I-MUR

Seven potential benefits of the I-MUR were provided in the questionnaire from which patient respondents could select. The benefit selected most frequently was "make sure that I am using my medications correctly", (151; 62.9%), however four of the potential benefits were selected by fewer than half the respondents. (Table 4.)

<<Table 4>>

Table 4 Perceived benefits from having an I-MUR

How did you hope to benefit from the I-MUR? (Please tick any options you feel are important)	N	% of patients who selected the statement
Make sure I am using my medications correctly	151	62.9
Find out more information about my medications	146	60.8
Find out more information about my medical conditions	120	50.0
Understand exactly what each of my medications is for	108	45.0
Discuss any side effects of my medications	92	38.3
Become more involved in my own health care	74	30.8
Discuss any problems / concerns with my medications	70	29.2

Experiences of the I-MUR are shown in Table 5. Only around a quarter of patients agreed/strongly agreed that they were worried about their medications (25.4%) or had problems with asthma (24.0%) before I-MUR, but three-quarters (75.2%) agreed they benefited from having the I-MUR and 84.1% were happier with their medications after the I-MUR. In addition, almost all agreed with statements relating to the conduct of the I-MUR. Most also confirmed that the I-MUR met their expectations (88.0%). More respondents (89; 37.4%) strongly agreed/agreed that I-MUR found problems with their medications than considered they had problems beforehand, and 63 (25.6%) that changes were made to their medications after I-MUR. There were 43 (18.5%) who strongly agreed/agreed with both statements and a statistically significant positive association was found ($\gamma = 0.70$, $p < 0.01$), between problems identified and medication changes. While 84.1% of patients agreed they were happier with their medications after the review, there were 41 (17.8%) who agreed they still had questions about their medications which were not answered during the I-MUR.

<<Table 5>>

Table 5 Patients' reported experiences of the I-MUR (n=245)

Questions	N	Strongly agree/agree	Not sure	Strongly disagree/disagree
I was worried about my medication before I went for the I-MUR	236	**25.4%**	21.2%	**53.4%**
I had problems with my asthma before I went for the I-MUR	233	**24.0%**	19.7%	**56.3%**
The pharmacist put me at ease	245	**99.2%**	0.8%	**0.0%**
The I-MUR was done in a suitable place	239	**97.0%**	1.7%	**1.3%**
There were no interruptions during the I-MUR	239	**93.3%**	2.9%	**3.8%**
I had the full attention of the pharmacist during the I-MUR	244	**98.8%**	1.2%	**0.0%**
The pharmacist wanted to help me deal with any concerns I had about my medications	241	**96.3%**	2.5%	**1.2%**
I felt that I was given enough time for the I-MUR	239	**94.1%**	5.8%	**0.4%**
I felt comfortable asking any questions I had about my medication	240	**93.8%**	5.8%	**0.4%**
I understood everything discussed during the I-MUR	237	**85.2%**	13.1%	**1.7%**
I feel I benefited from having the I-MUR	238	**75.2%**	18.9%	**5.9%**
The pharmacist answered all my questions to my satisfaction	242	**96.7%**	2.5%	**0.8%**
The I-MUR found problems with my medications	238	**37.4%**	18.5%	**44.1%**
Changes were made to my medications after the I-MUR	232	**27.2%**	13.8%	**59.0%**
I felt involved in all of the decisions made about my medications	232	**75.4%**	17.2%	**7.4%**
I still have questions about my medications which were not answered	231	**17.6%**	27.7%	**54.7%**
I was given the opportunity to discuss any problem I had during the I-MUR	233	**89.7%**	7.7%	**2.6%**
The I-MUR met my expectations	234	**88.0%**	10.7%	**1.3%**
I am happier with my medications after my review	233	**84.1%**	12.5%	**3.4%**

There were 46 (19.2%) patients who felt that the I-MUR could be improved, however most of the suggestions related to expansion of this as a service. These included: bringing together more patients to share their experience, expanding the I-MUR service provision to other diseases, involving more pharmacies in the provision of this service, and giving feedback more often and more regularly, three months was mentioned by many patients. A small number suggested more time was needed for the interview, more information should be provided regarding I-MUR and the use of their medicines, and more focused questions used.

"More focused questions for spotting therapy errors" [P55, Brescia, female, age 31-40].

There were 121 (51.3%) who would consider having another I-MUR, although 16.9% (40) would not and 31.8% (75) did not know (10 missing). Reasons for not wanting to have another were given by 11 patients, which included the view that one was enough, being well managed by their health care professionals and in one that I-MUR did not help.

A very high proportion of patients indicated they would recommend the I-MUR service to other people (200; 85.5%), with only 2.1% (5) indicating they would not and 12.4% (29) who didn't know (12 missing). Reasons given for positive recommendations were: they found it useful, pharmacists focused attention mostly on them and not on drugs, and improving knowledge about the medications will also improve knowledge about their disease.

"The service is very useful for the information provided; because we need to take the medications, there are no other choices." [P200, Treviso, male, age 31-40]

Free-text comments also showed that patients appreciated the information given by the pharmacists, their competence, knowledge, and availability to discuss their health care issues;

One patient stated that the I-MUR service was

"The best and fastest medication I never had" [P101, Torino, female, age 51-60].

Discussion

The pre and post I-MUR Q revealed that pharmacists' views on the I-MUR changed after they had provided it in that confidence increased and the lack of financial compensation initially anticipated did not seem to be a major barrier in practice. Although lack of coordination and collaboration with GPs was highlighted both before and more so after delivery of the I-MUR, pharmacists wanted to overcome this, through sharing best practice and information with GPs. The pharmacist survey respondents felt that the I-MUR could improve patients 'use of medicines and those attending focus groups illustrated this with examples they had received. This was confirmed by the findings from the patient survey, which indicated a high proportion of those who responded considered their I-MUR was beneficial and were happier with their medications afterwards. Pharmacists considered that this was a service which could enhance their professional status, that cognitive services such as this were the right approach for the development of the future of the pharmacy profession in Italy and that I-MUR should be extended to other medical conditions, but that specific training was required. Patients too suggested extending the service to more conditions and to more pharmacies. The training provided for the I-MUR provision was generally considered sufficient, but the need for redirection of the undergraduate pharmacy programme in Italy in order to increase clinical knowledge was also highlighted. Most pharmacists felt they had sufficient skills to deliver this as a service and the patient survey indicated high levels of satisfaction with the processes.

Positive patient views on similar medication review services have been found in several studies. A large randomised controlled trial in England (2007)[4] found that patients' satisfaction with the service provided by their pharmacist and likelihood of asking questions of their pharmacist increased significantly after receiving a medication review in the intervention group compared with controls. Other studies in England have reported patients' appreciation of and positive views towards the MUR service,[6,15] with one reporting an increase in understanding of both medicines and conditions.[16] An evaluation of the English MUR service found that patients felt comfortable speaking with the pharmacist, whom they saw as a knowledgeable expert on medicines. This was also apparent in our patient survey, almost all of whom confirmed that pharmacists answered all their questions to their satisfaction, and from the feedback provided to the pharmacists themselves. Despite the positive views, there was a significant proportion (18%) of patients who still had questions about their medications, which was also found in a small evaluation of the English MUR using the same questionnaire.[14] While the most likely explanation for this is that patients thought of additional questions after the I-MUR had been completed, particularly given the time interval between the I-MUR and the patient survey, pharmacist knowledge may have been insufficient. Pharmacists'

perceptions of their skills and knowledge was in fact high even before they started to deliver the I-MUR, in contrast to pharmacists in England prior to delivering a similar service (Jaffray et al. 2007),[12] and while pharmacists in this latter study did perceive their skills and knowledge improved after training, there was no significant change in the perceived skills and knowledge of the pharmacists delivering the I-MUR.

The need for more communication and collaboration with GPs regarding the medicines use review (MUR) service in England has been reported.[178] Latif et al. (2013) have also suggested that a closer collaboration between GPs and pharmacists could potentially improve patients' use of medicines and associated health care outcomes.[18] In practice, the I-MUR resulted in pharmacists not only providing advice to patients, but also to GPs with regards to patient's medicines and asthma control (unpublished data), hence the service may have resulted in increased contact.

In addition to the need for greater co-ordination with other health professionals, Italian pharmacists indicated that lack of time was both a potential and actual barrier. This was also found in a study which examined the first year of a MUR service in New Zealand.[19] In New Zealand the lack of contact with funders was also an issue, in contrast to the present study in which lack of funding did not appear to be a limiting factor. A few pharmacists suggested that the pharmacy lay out and premises were not structured for this new service, although only 1% of patients suggested that the I-MUR was not done in a suitable place. In fact, a private area was a requirement for involvement in the study, but the extent to which these are available in Italian pharmacies in general is not known. The MUR service in England was one of the driving forces behind the development of private consultation areas in community pharmacies, which are now present in over 90% of pharmacies in England (PSNC, 2016).[20] Despite this, lack of privacy has been cited as a perceived obstacle to service utilization in England, along with competencies and confidentiality, due to a lack of awareness of the availability of private consultation rooms in community pharmacies among the public.[21]

Strengths and limitations

The questionnaires used were adapted from the literature and other studies, allowing comparisons to be made. Both service providers and service users were included in this evaluation, with the patient survey purposely conducted nine months after the I-MUR service ended, thus allowing time for reflection on their experiences. However, this lengthy time interval may have affected recall. A large number of pharmacists providing the I-MUR who participated in the focus groups, although slightly

fewer completed both evaluation questionnaires. The questionnaire response rate for pharmacists was 66%, but for patients was 27%, thus may reflect those with positive views.

Conclusion

The I-MUR service was perceived positively by pharmacists and patients, hence was acceptable to both stakeholder groups. Community pharmacists have the potential to become more involved in delivering cognitive services, which so far has been under-utilised within the Italian primary health care system.

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Contributors

Andrea Manfrin (AM) acted as Principal investigator (PI), conceived and developed I-MUR, Janet Krska (JK) supervised the work. AM under the supervision of JK designed the studies. AM conducted all the analysis and drafted the manuscript. JK review the analysis and drafted the manuscript as well. All authors revised the manuscript for intellectual content, read and approved the final manuscript. The researchers (AM and JK) had access to all data. AM acts as the guarantor for the results.

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Competing interest

The authors declare that they have no competing interests.

Ethics approval

The studies were approved by the University of Kent Research Ethics Committees. Written consent for participation in the study was obtained from patients and pharmacists before their enrolment in the study.

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