



Exploring pharmacists' views on an in-pharmacy medication review program in Australia using a mixed-methods design

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Abstract

Background MedsCheck is an in-pharmacy medication review program funded by the Australian Government. It is intended to improve patient understanding of medicines and resolve adherence issues. **Objective** To explore MedsCheck from the community pharmacists' perspective, focusing on the perceived effectiveness of the program, barriers to its optimal delivery, and the integration with other services. **Setting** Individual interviews in one territory and a national online survey of Australian community pharmacists. **Method** Using a mixed-method triangulation design, the interviews and the survey were conducted concurrently. The interviews were semi-structured, transcribed verbatim and thematically analysed. The survey, comprising closed and open-ended questions, was quantitatively and thematically analysed. The findings were first analysed separately and finally integrated by searching for convergence, complementarity, and discrepancy. **Main outcome measure** Pharmacists' perceptions of the effectiveness and barriers of MedsCheck. **Results** Eight interviews were conducted, and 232 survey responses collected. In the interviews, themes related to perceived benefits (*appreciation, reduced confusion, and strengthening relationships*), barriers (*lack of controls, lack of staff, lack of awareness, and lack of understanding of scope of services*), and the integration with other services (*strong link with dose administration aids*) emerged, which mostly correlated with the survey's results. Ten percent of surveyed respondents did not provide the MedsCheck service; their main reason being insufficient staffing. Of the pharmacists offering the service, 76% strongly agreed that patients were benefitting. MedsCheck reviews were usually initiated by pharmacy staff. Fifty-three percent of respondent pharmacists never or only sometimes reported the review outcomes to the patient's general practitioner. **Conclusion** The pharmacists believed that MedsCheck is useful to improve patients' understanding and management of their medicines. However, there are currently barriers to the effective delivery of the service, including workload issues, lack of patient awareness, and the service's integration with the broader care of the patient. If these were appropriately addressed, the in-pharmacy medication review program could help pharmacists to better engage with patients and general practitioners and enhance understanding of medication and adherence.

Keywords Adherence · Australia · Community pharmacy services · Health service evaluation · Medication knowledge · Medication reconciliation · Medication review · MedsCheck

Impacts on practice

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- There is a clear indication of the perceived effectiveness of MedsCheck in relation to patient engagement and education.
- More support for community pharmacies and routinely conducted audits of actual delivery against the program's requirements could improve the service.
- If these and additional measures aimed at increasing public awareness of MedsCheck were implemented, the uptake and effectiveness of the program might be enhanced.

Introduction

Life expectancy is rising worldwide but simultaneously people are increasingly suffering from multi-morbidity, which often requires them to take multiple drugs [1, 2]. Taking five or more long-term medications is generally defined as polypharmacy, which is related to an increased risk of drug–drug and drug–disease interactions, as well as non-adherence [3, 4]. The World Health Organization stated that in developed countries every second person taking medication for chronic conditions is non-adherent, which can lead to poorer health outcomes [5]. Additionally, the Pharmaceutical Society of Australia reported that the median estimate for the proportion of medication-related admissions was 2.5% of all Australian hospital admissions in 2016–17 [6]. In the elderly, the estimated proportion was significantly higher, accounting for 20.5% of all hospital admissions in people aged 65 years and older [6].

A systematic review by Wilhelmsen and Eriksson showed that education and counselling interventions delivered by pharmacists and nurses can improve patient adherence [7]. Australian pharmacists have become increasingly involved in the care of patients, particularly in chronic disease management [8]. In 2001, the Australian Government introduced a medication review program that is led by accredited pharmacists [9]. Since its implementation, the Home Medicines Review (HMR) program has been associated with improvements in both the quality use of medicines and health outcomes [10]. In 2015, the Australian Government implemented a second, less comprehensive medication review program, called MedsCheck [11, 12]. The pharmacist does not need to be accredited or undergo additional training to provide this service. The entire process takes place in the community pharmacy; the pharmacist reviews the patient's medication regimen, conducts a patient interview (e.g. to assess medication understanding and adherence) and counselling, develops a medication profile and action plan, and follows up with the patient. There are two additional types of this service, Diabetes MedsCheck and Pain MedsCheck, which target specific population groups [11, 13]. The latter was introduced in 2018 and is still in the pilot phase [13]. All of these medication reviews are funded by the Australian Government under the Community Pharmacy Agreement; the community pharmacies can claim a fixed fee for every service provided (66.53 Australian dollars per MedsCheck service and 99.79 Australian dollars per Diabetes MedsCheck service) [14, 15]. More detailed information on the background and requirements of the MedsCheck program can be found in the Online Resource 1.

Aim of the study

There is a lack of research investigating the implementation and perceived effectiveness of MedsCheck. Therefore, this study was designed as an exploration of MedsCheck from the community pharmacists' perspective. The key research questions were: (1) what are pharmacists' perceptions of the effectiveness of MedsCheck; (2) what are the perceived barriers to the implementation/sustainability of MedsCheck; and (3) do pharmacists integrate MedsCheck with other pharmacy services?

Ethics approval

The study was approved by the Human Research Ethics Committee of the University of Canberra (project number: HREC 17-133).

Method

A mixed-methods approach was used, consisting of individual interviews and an online cross-sectional survey of Australian community pharmacists, to develop an insight into the pharmacists' experiences and perceptions of MedsCheck. A triangulation design was chosen to allow a more comprehensive understanding than would be possible through each method used independently and to simultaneously increase the validity of the results (Online Resource 2) [16]. The study followed the Good Reporting of A Mixed Methods Study (GRAMMS) quality criteria [17].

Data collection

The interviews with pharmacists were face-to-face and were recorded in community pharmacies located in one Australian territory from January to May 2018. The sampling was based on convenience; the pharmacists were first invited via email and then in person through a researcher who visited the pharmacies. Only pharmacists who routinely conducted MedsChecks were interviewed. The process was semi-structured, leaving scope for the development of topics arising during the interview. The interview guide (Online Resource 3) was developed after an in-depth discussion between two of the investigators and an experienced community pharmacist conducting MedsCheck; this pharmacist was not one of the interviewees. The interviews were transcribed directly after the visit and the initial coding was conducted allowing the assessment of the data saturation point. New

interviewees were recruited until no additional themes emerged.

The survey was delivered online using Qualtrics®. Before the release, the questionnaire was piloted in a small sample ($n = 10$) of pharmacists known to provide MedsCheck reviews. After the pilot, small adjustments to the phrasing were made to improve the clarity of the questions. The survey (Online Resource 4) was distributed in January and closed in July 2018. The first invitations were sent out to 4857 email addresses of pharmacies across Australia (of approximately 5665 in total [18]). These email addresses were obtained via the homepage of the Human Services Directory of the State Government of Victoria [19]. After both one and four months, reminder emails were sent out. The estimated sample size for the survey to be representative of all Australian community pharmacies was 365 participants (based on 5600 Australian community pharmacies using a 95% confidence level and 5% margin of error). The data was anonymously collected; participants were asked to create a unique identification code which allowed them to opt-out after study completion and enabled the researchers to identify duplicate responses.

After data collection, 5× \$50-vouchers (survey) and 2× \$100-vouchers (interviews) were randomly drawn to thank pharmacists for their participation.

Data analysis

The data from the interviews and the survey were analysed separately, and the results were combined in the final step of the analysis. First, the interviews were analysed to ensure that the qualitative data collection, initial analysis, and interpretation were not influenced by the results of the survey. The interviews were transcribed verbatim and thematically analysed using the software NVivo 11 PRO (QSR International Pty Ltd). Themes were derived using an inductive approach. The same investigator conducted, transcribed, and analysed all interviews to allow a deeper connection with the content. During the analysis, codes were firstly developed based on the transcripts. These codes were then transformed into themes. The themes were then grouped according to the three topics of the research questions (effectiveness, barriers, and integration with other services).

The analysis of the questionnaires was conducted using IBM SPSS Statistics 23. The remoteness area of each respondent was determined using the “Postcode 2012 to Remoteness Area 2011” list [20]. Descriptive statistics were mainly used. Additionally, associations between variables were assessed using the Chi-square test and differences between groups using the Mann–Whitney test. The level of significance was pre-set to 0.05. For open-ended questions, inductive thematic analysis was conducted. The individual answers for each open-ended question were extracted and

grouped according to commonality. Subsequently, for each group, a theme was developed. Furthermore, the results from both parts of the study were examined for convergence, complementarity, and discrepancy.

Results

Demographics

Interviews

The interviewees varied in several characteristics: owners/managers or employees, senior or junior pharmacists, independent pharmacies or part of a group. After eight interviews no additional themes were identified.

Figure 1 demonstrates the themes that emerged during the thematic analysis of the interviews and their connection to the three research questions related to the perceived effectiveness, the barriers and the integration with other services. The findings will now be presented, divided into the three research questions and together with the results of the survey.

Survey

In total, there were 239 survey responses (5% response rate); of these, 7 were deleted due to duplication (same unique identifier and postal code). Of all survey participants, 10% (22/232) worked in a pharmacy that did not provide MedsCheck services. The demographic information of the survey participants is presented in Table 1. A quarter of

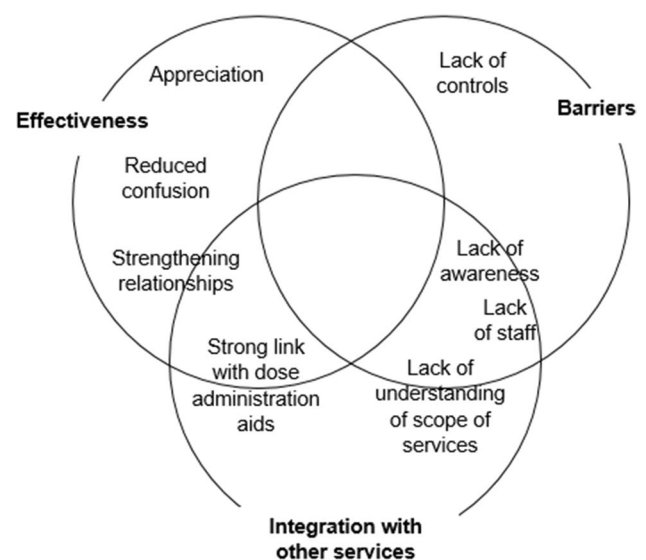


Fig. 1 Themes that emerged in thematic analysis and their connection to the topics of the research questions

Table 1 Demographic information of survey participants (n = 232)

Demographics	Count n (%)
Type of pharmacy	
Part of friendly society	10 (4.3)
Independent	104 (44.8)
Part of banner/marketing group	118 (50.9)
Full-time equivalent pharmacists in pharmacy	
1.0–1.9	101 (43.5)
2.0–2.9	77 (33.2)
3.0–3.9	42 (18.1)
4.0–4.9	9 (3.9)
≥ 5.0	3 (1.3)
Prescriptions per day	
0–99	50 (22.5)
100–199	67 (30.2)
200–299	53 (23.9)
300–399	37 (16.7)
400–499	9 (4.1)
≥ 500	6 (2.7)
Location of pharmacy (n = 231)	
Northern Territory	1 (0.4)
Australian Capital Territory	3 (1.3)
Tasmania	6 (2.6)
South Australia	15 (6.5)
Western Australia	27 (11.7)
Victoria	54 (23.4)
Queensland	62 (26.8)
New South Wales	63 (27.3)
Remoteness of pharmacy (n = 231)	
Very remote	5 (2.2)
Remote	7 (3.0)
Outer regional	40 (17.3)
Inner regional	50 (21.6)
Major cities	129 (55.8)
Employment status	
Employee	54 (23.3)
Manager	67 (28.9)
Owner	111 (47.8)
Years of experience	
0–5	36 (15.5)
6–10	58 (25.0)
11–15	23 (9.9)
> 15	115 (49.6)
MedsChecks per month (n = 208)	
0–5	108 (51.9)
6–10	35 (16.8)
11–15	16 (7.7)
16–20	49 (23.6)
Minutes per MedsCheck consultation (n = 210)	
0–10	17 (8.1)
11–20	63 (30.0)
21–30	81 (38.6)

Table 1 (continued)

Demographics	Count n (%)
31–40	35 (16.7)
> 40	14 (6.7)

all pharmacists (53/210) were also accredited to perform HMRs.

Based on the pharmacists who stated in the survey that they offered MedsCheck (n = 210), the median number of MedsChecks conducted per month was five [interquartile range (IQR): 4–15]. The number of MedsChecks performed per month did not differ significantly between the two major types of pharmacies—independent/friendly society and banner/marketing group (Mann–Whitney test, $p = 0.263$). For those pharmacists who offered MedsCheck, the average time stated to perform a MedsCheck consultation was between 21 and 30 min.

Effectiveness

Interviews

All interviewed pharmacists believed that MedsCheck was effective in helping patients and that most patients were satisfied with the service, appreciating that pharmacists were dedicating time for them. Two pharmacists mentioned that MedsCheck was helpful to engage with their patients and strengthen their relationship. One of the main reasons for pharmacists to initiate the review was to reduce the patients' confusion with their medicines. Four pharmacists felt that the scope of MedsCheck was broad, allowing individual adjustments based on the patient's needs. The pharmacists educated patients during the review to improve their medication-related understanding, for example, related to indication, drug administration, differences between brand names and active components. Further aims of MedsCheck mentioned by pharmacists were education on the appropriate use of medical devices, such as inhalers, and identification of potential adverse drug reactions. Seven pharmacists informed general practitioners (GPs) about critical issues that were highlighted during the review, and one mentioned that MedsCheck was an opportunity to strengthen the inter-professional relationship between pharmacists and GPs.

Survey

When the survey participants were asked about the importance of delivering MedsCheck, 80% (167/210) replied that they strongly agreed that it was important to offer the service (16% somewhat agreed). Furthermore, 76% (160/210) strongly agreed that patients were benefitting

from MedsCheck (20% somewhat agreed). The most common reasons that pharmacists mentioned for initiating a MedsCheck were polypharmacy and issues with managing medicines/requiring further education (Fig. 2a). Frequently, pharmacists mentioned that they recommended

MedsCheck when patients appeared confused about their medications. Most pharmacists considered that the identification of problems with medicines and optimisation of diabetes medication use were the most important aims of MedsCheck (Fig. 2b) and Diabetes MedsCheck (Fig. 2c), respectively.

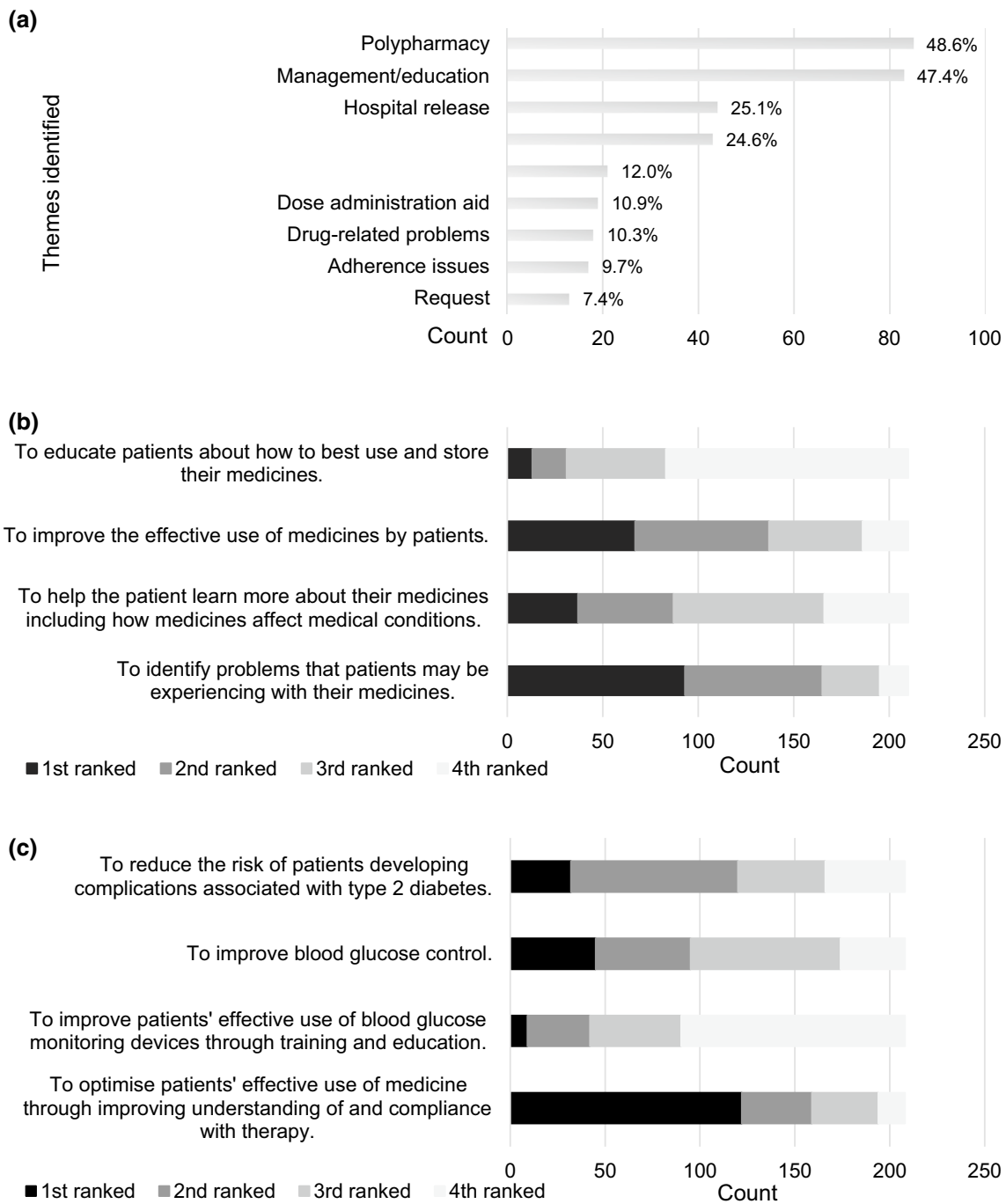


Fig. 2 Reasons and aims of MedsCheck. **a** Themes emerged regarding reasons for initiating MedsCheck (n = 175); aims of **b** MedsCheck and **c** Diabetes MedsCheck [30], ranked according to the level of importance (n = 210)

Integration of findings

In the interviews and the survey, the pharmacists expressed the perceived value of the MedsCheck program. In both, pharmacists emphasised the importance of MedsCheck in reducing patient confusion. In the interviews, the value regarding the relationship to GPs was mentioned.

Barriers

Interviews

Four pharmacists explained that they usually conducted MedsCheck “on the spot”. The delivery of MedsCheck was more feasible if another pharmacist was concurrently working. One pharmacist said it was difficult to convince patients to make appointments and, therefore, it was easier to directly perform the review.

Pharmacist 5: We generally do it on the spot. If they seem kind of time-poor or if they are really in a rush, then we might try and book them in later on, but I think previously we have tried to do on an appointment basis and it hasn't really worked because they are kind of unmotivated to do that.

Two pharmacists mentioned that they arranged appointments in more complex cases that would most likely require additional time. Two different pharmacists pointed out that appointments offered a more structured approach to MedsCheck because it allowed time to prepare the consultation and for patients to bring all medications from their home to the appointment.

Two pharmacists criticised other pharmacies that were not following the Government's requirements for MedsCheck and believed that the Pharmacy Guild of Australia or the Australian Government did not sufficiently check on these. One pharmacist even expressed uncertainties about whether their own pharmacy was meeting the prerequisites. Generally, the pharmacists described their working relationship with local GPs as positive. However, three pharmacists experienced that communication with general practices that were not nearby was problematic.

Pharmacist 7: We have a very good relationship with the doctors around here. I'd say probably three or four doctors. Not locally, they are in [...], but not around us, they are a bit hard to contact.

Usually, the review was initiated by the pharmacy staff, and many patients were not aware of the service beforehand. However, two pharmacists explained that some patients asked for a medication review without naming it 'MedsCheck'.

Survey

In the survey, pharmacists who did not conduct MedsCheck were also included. Hence, insights were gained into their reasons for non-participation. Twenty of the 22 survey participants who did not offer MedsCheck provided reasons, which included inadequate staffing ($n = 9$), a lack of time ($n = 5$), no private consultation area in the pharmacy ($n = 4$), and not being financially viable ($n = 3$). Further replies were: 'lack of training', 'no demand', 'focus on HMRs', 'no accreditation', 'too much work', and 'not sure how to do it'.

Only 18% (38/210) of pharmacists had previously experienced a patient requesting MedsCheck by name, indicating a low awareness of the service among the general population. This occurred, according to the 38 pharmacists, a median of twice within the last 12 months (IQR 1–3.75). Over 90% (196/210) of pharmacists conducting MedsCheck felt confident to deliver the service; nevertheless, about half (119/210) expressed the desire to have specific training. There were no differences between accredited and non-accredited HMR pharmacists regarding their confidence and desire for training (Chi-square test, $p = 0.329$ and $p = 0.196$, respectively). Most pharmacists stated that they conducted MedsCheck in a counselling room (61%) using a recording program to document the consultation (83%) and demonstrating tools, such as blood glucose monitors or asthma inhalers (90%) (Table 2). The majority specified that they provided patients with a reconciled list of medicines (88%) and an action plan for recommendations (74%). Follow-up sessions were arranged by 59% of pharmacists for a median of 10% of MedsChecks (IQR 5–50).

Only 13 and 21% of pharmacists, respectively, stated that they always or most of the time reported the MedsCheck outcomes to the GP, while 14% reported about half of the time, 44% sometimes and 9% never. In total, 86% (181/210) had previously referred patients to a GP after a median of 20% (IQR 10–32.25) of reviews. The most commonly stated reason for reporting to the GP following a MedsCheck was identifying significant issues that required the GP's involvement; more themes are displayed in Fig. 3. If pharmacists provided referrals to GPs, these were in written form (72%) and verbally (28%). Forty-five percent of the pharmacists (94/210) had previously received feedback from a GP.

Half of the pharmacists (108/210) had previously referred patients to another health practitioner following a MedsCheck; these did so in a median of 10% of reviews (IQR 5–20). The most common professionals that pharmacists referred to were diabetes educators (41% of pharmacists), physiotherapists (37%), podiatrists (27%), accredited HMR pharmacists (25%) and optometrists (21%).

Table 2 Availability of physical requirements for MedsCheck in pharmacies (n = 210)

Physical requirements	Count n (%)
Place of consultation	
Counselling room	127 (60.5)
Quiet area of the pharmacy	47 (22.4)
Service counter	20 (9.5)
Dispensing counter	9 (4.3)
Other place	7 (3.3)
Resources*	
Demonstrating tools†	189 (90.0)
Recording program	174 (82.9)
Dedicated space	167 (79.5)
None of the above	1 (0.5)
Patient information*	
List of current medicines	185 (88.1)
Action plan for recommendations	155 (73.8)
Other information	70 (33.3)
• CMI	36 (17.1)
• Disease information	14 (6.7)
• Lifestyle information	11 (5.2)
• Self-care leaflets	10 (4.8)
• Drug information	9 (4.3)
• Weblinks/local support groups	9 (4.3)
• Information about DAAs	3 (1.4)
None of the above	15 (7.1)

CMI consumer medicine information, DAA dose administration aid

*Several answers were possible

†To support the proper use of medicine (e.g. blood glucose monitor, asthma devices)

Integration of findings

In the interviews, pharmacists explained their preferred model of service delivery and the benefits or limitations of it, which was a topic that was less covered in the survey. Further, the interviewed pharmacists mentioned issues due to lack of patient awareness, as well as limitations in the working relationship with GPs who were not in close proximity. These findings were also apparent in the survey, although the reported issues with GPs were not just limited to distant practices.

Integration with other services

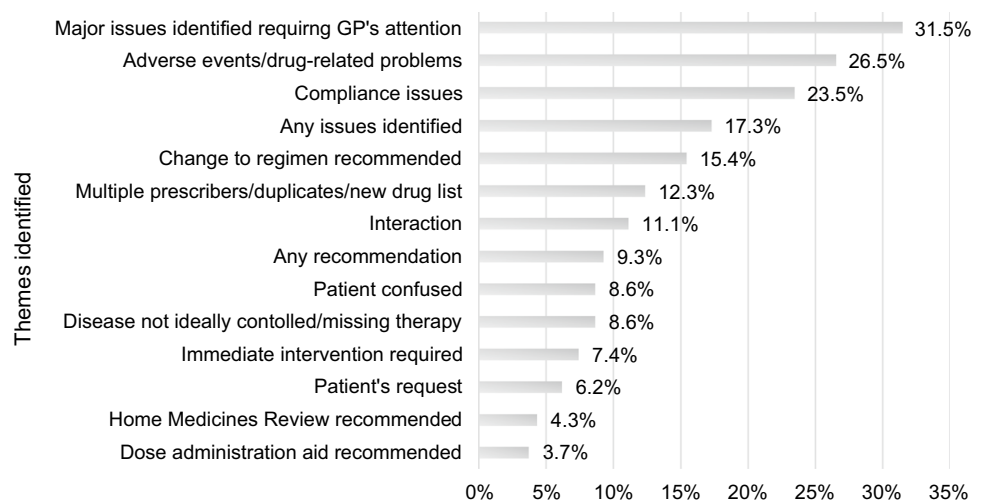
Interviews

Pharmacists working in a pharmacy with staff holding further qualifications, such as diabetes educators or accredited HMR pharmacists, explained that they liked to recommend these services to patients during the review if appropriate. Six pharmacists explained that they referred patients to HMRs when they noticed that there were complex issues that could not be solved during the MedsCheck session.

Pharmacist 5: I have seen a few patients referred for a HMR because of, yeah, I guess I’ve kind of started a MedsCheck but not really been able to make much progress with it because it’s so complex.

Seven pharmacists described an association between MedsCheck and dose administration aids (DAAs). Three pharmacists mentioned that they often conducted MedsCheck when setting up patients on DAAs to ensure the patients’ understanding of their medication plan and to rule out any drug-related problems. Five pharmacists stated that MedsCheck was a screening tool for DAAs; they took the opportunity to recommend a DAA to the patient if they

Fig. 3 When do pharmacists report to general practitioners? Themes emerged regarding the decision on when to report to the general practitioners (n = 162)



felt that the patient was not able to manage their medicines independently.

Pharmacist 3: Often the patients that you end up offering a MedsCheck to, it's because you notice that they are confused. So, the logical step is to offer them a dose administration aid.

Survey

All survey pharmacists also offered other healthcare services in their pharmacy; among these, DAAs, blood pressure measurement, and the National Diabetes Services Scheme were most common (Table 3). Ninety percent [184/205, (five

Table 3 Type and frequency of healthcare services in pharmacies (excl. MedsCheck)

Pharmacy services offered	Count n (%)
Dose administration aid	199 (94.8)
Blood pressure measuring	197 (93.8)
National diabetes services scheme	173 (82.4)
Home medicines review	143 (68.1)
Blood glucose testing	131 (62.4)
Weight management	102 (48.6)
Asthma check	95 (45.2)
Smoking cessation	94 (44.8)
Diabetes screening	61 (29.0)
Cholesterol screening	59 (28.1)
Heart health check	49 (23.3)
HbA1c testing	24 (11.4)
Lung function test	21 (10.0)
Others*	21 (10.0)
Credentialed diabetes educator session	14 (6.7)
None of the above	0 (0.0)

*Others: sleep apnoea service n=9; maternal health and early childhood n=4; opioid replacement therapy n=3; DNA test n=3; wound care n=2; pain management n=2

responses missing)] of pharmacists had previously suggested one or more of the services to a patient after MedsCheck; they suggested another service in a median of 25% (IQR 10–50) of MedsCheck consultations. In relation to HMRs, 49% (102/210) of pharmacists had arranged a referral; they referred to HMRs in a median of 10% (IQR 5–32.5) of MedsCheck consultations. HMR referrals were more often initiated by accredited HMR pharmacists ($p < 0.001$). The most commonly stated reason for recommending HMRs following MedsChecks was when pharmacists felt that patients required a more in-depth review; more themes are displayed in Fig. 4.

Integration of findings

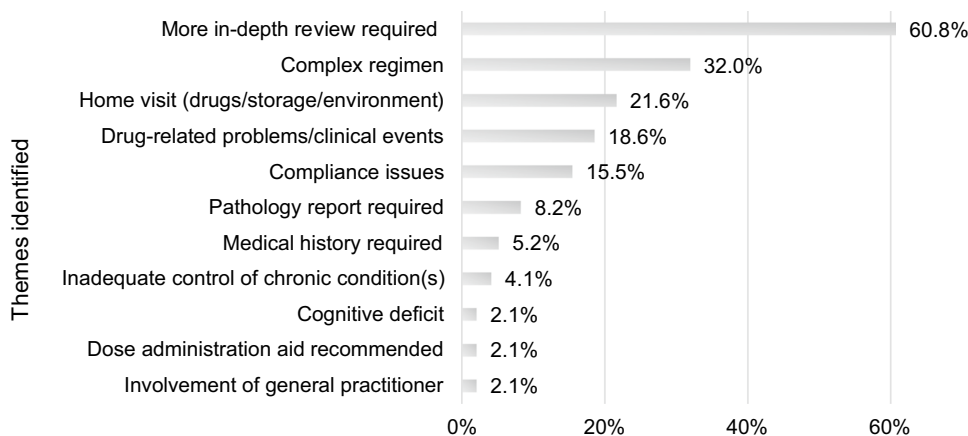
In the interviews, as well as the surveys, a strong link between MedsCheck and DAAs was observed. In both cases, pharmacists also described a relationship between MedsCheck and HMR, especially if the pharmacists were accredited to perform HMRs themselves.

Discussion

This study was the first exploration of the Australian MedsCheck in-pharmacy medication review program from the pharmacists' perspective. The first research question was regarding the pharmacists' perceptions of the effectiveness of MedsCheck. According to interview and survey participants, the service is helping patients by better educating them about their medications, reducing confusion and identifying potential drug-related problems. This is in line with the program's aims [12].

The second research question was directed at the barriers to the implementation or sustainability of MedsCheck. One significant barrier that was identified is the insufficient availability of staff. Therefore, the original intention promoted by the Pharmacy Guild of Australia was to offer MedsCheck

Fig. 4 When do pharmacists recommend HMR referrals? Themes emerged regarding the decision on when to refer patients for HMRs (n=97)



appointments at times when several pharmacists were on duty or even specifically employing a pharmacist for the dispensary during the appointments, which was in response to identified barriers in the United Kingdom (UK) with their medication review service, Medicines Use Review [21]. However, one interviewed pharmacist reported difficulties with patients returning to the pharmacy at a different time. This might relate to another barrier, namely, the low awareness of MedsCheck in the general population. Potentially, more people would be willing to arrange an appointment with the pharmacist if they were already familiar with the service and its potential benefits. Additionally, the lack of awareness resulted in almost all MedsChecks being initiated by the pharmacist instead of the patient.

The survey revealed that some pharmacies did not have the space needed to offer MedsCheck and some pharmacists did not provide patients with the required documentation, such as a medicines list and an action plan. Some interviewed pharmacists were upset about other pharmacists ignoring the program's rules and about the Pharmacy Guild of Australia or the Australian Government not sufficiently monitoring these. Furthermore, 41 and 9% of survey pharmacists, respectively, did not follow up with patients or GPs after the completion of a MedsCheck. Collectively, this suggests that some pharmacies might focus on quantity, rather than on quality, of the service indicating that the MedsCheck program might benefit from stricter auditing. In fact, the number of reimbursable MedsChecks per month has been limited by the supervisory bodies, in part due to fraudulent claims [22]. However, the authorities have never confirmed whether participating pharmacies are meeting all the program's requirements. Meyers et al. recommended that implementation processes should be monitored, including the quality with which the new professional service is delivered, and subsequently evaluated [23]. Recently, the Australian Government has made some progress towards this aim: since February 2018, pharmacists have been required to collect patient data after the MedsCheck and follow up with the patient on health outcomes after 6 months [12].

In the UK and Canada, in-pharmacy medication review programs were implemented before the Australian program. For these, Dolovich et al., MacKeigan et al., Blenkinsopp et al., and Latif have presented similar barriers to the ones identified in the current study [24–27]. For the Canadian MedsCheck, two of the main barriers mentioned by Dolovich et al. [24] were lack of time and integrating MedsCheck appointments into the existing workflow. MacKeigan [25] described a lack of quality of the service due to an efficiency-oriented strategy. Blenkinsopp et al. [26] stated that the working relationship between pharmacists and GPs, the documentation, and too nonspecific definitions of the service were barriers in the delivery of the Medicines Use Review in the UK. Latif [27] expanded on the barriers of the Medicines

Use Review by highlighting several issues including: that the patients who are most in need were often not reached; difficulties in pharmacist-GP collaborations; focus on quantity instead of quality; and insufficient support, resources, skill sets, and confidence from pharmacists' side. According to a recent systematic review by Keir et al., the same barriers are being repeatedly described in international pharmacy practice research [28] but there seems to be a lack of feasible and effective recommendations on how to overcome these.

The third objective of this study was to find out whether pharmacists integrated MedsCheck with other pharmacy services. According to the interviews and the survey, pharmacists seemed more likely to offer another service to a patient in the context of MedsCheck if their pharmacy provided this service. In the interviews, a strong connection between DAA and MedsCheck was observed. However, the linkage between MedsCheck and other healthcare services appeared to be limited. Potentially, some pharmacists have a lack of understanding of the scope and limitations of MedsCheck in relation to other services. An improved understanding of these might improve the linkage to other services and, specifically, referrals from MedsCheck to comprehensive HMRs.

Limitations

The interviews were only conducted in one territory in Australia, which means that some of the findings might be particular to the setting in this territory, although there was considerable convergence between these and the national survey results, suggesting similar findings across Australia. Further, the interviews were not conducted in-depth. The thematic analysis was conducted by only one researcher. Later, the findings were discussed by the research team. The calculated sample size for the survey was not achieved; taking the sample size of $n = 232$ and a 95% confidence level, the resulting margin of error for this study was 6.3% instead of the anticipated 5%. The sampling methods were based on convenience. The numbers of independent (and probably smaller) pharmacies, as well as pharmacists located in Queensland, were proportionally over-represented in the survey, while pharmacies in major cities were relatively under-represented compared to the overall distribution of pharmacies for Australia. In a report from 2015 by PricewaterhouseCoopers for the Australian Government [29], roughly 30% of MedsCheck providers were located in New South Wales, 25% in Victoria, 20% in Queensland, 10% in Western Australia, and the remaining in all other states and territories. Regarding the remoteness, the same report stated that roughly 70% of MedsCheck providers were located in major cities, 20% in inner regional, 10% in outer regional, and the remaining in remote and very remote regions.

Future work

As the purpose of this study was to conduct an initial exploration of MedsCheck from the pharmacists' perspective, the findings are limited in scope. However, the results offer an overview of the current service provision and help in identifying needs for further research. In future studies, other stakeholders, such as GPs and patients, should be involved. In-depth interviews with pharmacists who do not offer MedsCheck could clarify in more detail the barriers to uptake. While the present study was not able to answer why MedsCheck is generally seen as a stand-alone tool, more in-depth interviews could shed some light on this issue. Such findings could then be used to develop strategies on how MedsCheck could be more effectively integrated into the broader care of the patient. Further, a rigorous randomised controlled trial that evaluates the effectiveness of MedsCheck in terms of changes in patient understanding and adherence, as well as cost-effectiveness, would be of value.

Conclusion

From the pharmacists' perspective, MedsCheck is a useful tool to improve patients' understanding of and adherence to their medicines. There are currently some barriers to the effective delivery of the service, which have also been described in other countries; these include workload issues, lack of patient awareness, and limited integration with the broader care of the patient. Further studies should investigate strategies to overcome these barriers.

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