

England local community pharmacists opinions on independent prescribing training

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ABSTRACT

The National Health Service has recognized an increasing need for pharmacists to upskill as advanced clinical practitioners to practice as part of the wider multi-disciplinary team in primary care but outside of the community pharmacy. This explored community pharmacists' opinions on independent prescribing training that can equip them to meet the workforce needs. Two activities have undertaken an audit of the independent prescribing pharmacists' current employability in Wolverhampton and community pharmacists opinion online survey. Only 21 out of 57 surgeries (37%) in Wolverhampton employed an IP. With only 7 out of 57 (12%) surgeries employing an IP on an FTE basis, the remaining employed IP mainly part-time. There were 70 IPs employed a total of 50.2 FTE. The most selected areas as highly confident were public health knowledge 19.6%, followed by pharmacology and routine biochemistry equally at 17.65%. There were 23.5% who reported not being confident in interpreting highly specialized diagnostics, followed by anatomy at 18%. The most selected as the first option of course of future studies was 1-2 days continuous professional development (42.55%), where Masters, professional doctorate and doctor od philosophy were selected as least favorable options (53%, 63%, 72% respectively) indicating that the majority prefer a maximum of 6 month PT studies. This study confirmed the need for rethinking the current postgraduate pharmacy independent prescribing education, the pharmacists' independent prescribers' integration into primary care, and the need to redistribute resources and responsibilities.

Keywords: Pharmacy education, Community pharmacy, Primary care, Independent prescribing pharmacists, Non-medical prescribing, Minor ailments

Introduction

Medication-related hospitalizations are frequent in the UK, estimated to account for around 10-16% of all hospitalizations in medical departments, most judged to be preventable [1]. Patient adherence to their medication regimen is lower than 50%. This suboptimal medication use is extremely costly for society, resulting in avoidable disease complications requiring treatment and reducing patients' quality of life. Globally, pharmacist-led

medication management is a recognized concept; however, it varies between countries. Almost all countries perform this function from hospital or community pharmacy facilities only. Still, Australia is an exception and is recognized as a world leader in providing these pharmacy-led services [1]. Sub-optimal medicine management is a key factor associated with unsafe care for care home residents, including medicines not being administered properly. This arises from inadequate knowledge of medicines and their adverse effects, record keeping and audits, and stock keeping and inventory management [2].

The profile and image of the pharmacist have rapidly changed over the last decade, with pharmacists under increased pressure to respond to patients' clinical needs in the community [3]. This will continue to evolve due to a combination of factors such as oversupply of pharmacists within current roles, shortages of doctors, an aging population, and the global epidemic of non-communicable diseases, where following initial diagnosis, ongoing maintenance is medication-based. In the UK, National

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Health Service (NHS) pharmaceutical services provided through contracted privately owned community pharmacies [4]. Each day 1.6 million people in England access a community pharmacy, and for 89% of people, a pharmacy is less than 20-minute's walk from their address. In 2008, the UK government White Paper; *'Pharmacy in England: building on strengths, delivering the future'* discussed a new vision for pharmacy, encouraging the sector to develop and increase the clinical services they offer, such as routine monitoring of long-term conditions, screening side effects, and adverse reactions, supporting better use of medicines, offering lifestyle advice and self-care support, and minor ailments services [5].

The national shortage of doctors in the UK has arisen through a combination of an aging population, budget cuts in services and training, an overall shortage of general practitioners (GPs), leading to more attendances at emergency departments [6]. In 2013, the Royal Pharmaceutical Society of Great Britain (RPS) advised that the government needed to utilize pharmacists' skills better, moving beyond the focus on dispensing and supply of medication [7]. In the 2014 NHS 'Five Year Forward View,' the NHS and the Royal College of General Practitioners (RCGP) agreed and stated that community pharmacy is a 'significant unexploited potential resource' [8]. In the management of long-term conditions, they could provide an alternative triage point for common ailments to supplement out-of-hours services or accident and emergency departments.

Since 2006, to qualify as an independent prescribing pharmacist (IP), pharmacists must successfully complete a General Pharmaceutical Council (GPhC) accredited IP program delivered by an accredited training institution [9]. The places are increasing pressure for pharmacists to manage complex patients and expect they will be entering environments for which doctors have been specifically trained [3]. This was also reported to be a problem by the Chairman of the GPhC's fitness to practice committee, who warned that a pharmacist *'...is not competent to undertake a physical examination which includes the touching of a patient's body as part of a diagnostic procedure...'* after a case where a pharmacist physically examined a patient after complaining of back pain [10]. In 2016, the pharmacy integration fund was set up. It totaled £300 million to cover until 2021 [11]. The fund's priorities were to deploy pharmacists into a wider range of clinical settings such as GP practices, NHS 111 services, care homes, and urgent care. Studies showed underutilization of community pharmacists' clinical skills and the potential for utilizing those skills to alleviate the pressures on GPs and secondary care [11]. To support these changes, educational grants were provided for community pharmacists *'to access postgraduate clinical pharmacy education, and training courses up to diploma level.'* The government recently announced £3.5 billion funding towards pharmacists servicing care homes following a pilot which showed that such roles reduce the risk of unplanned admissions into hospitals (Milmo, 2012). Since 2015, Health Education England (HEE) has been funding pharmacists to train to become advanced practitioners. The General Practice Pharmacist Training Pathway (GPPTP) was launched in 2016 and saw 500 independent prescribing

pharmacists across England employed to work in general practices for 18 months [5]. Evaluation carried out on this pilot led to funding the deployment of 1500 pharmacists to work in general practice.

An independent evaluation report of 'Community Pharmacist Independent Prescribers (CPIPs) working in a patient facing role in primary care, carried out by the University of Nottingham, concluded that pharmacists had a significant role in reducing the workload of doctors and that this could help reduce the pressure on general practices [5] especially for the management of patients diagnosed with chronic conditions such as hypertension, diabetes, and asthma. The report highlighted cases of pharmacists running triaging clinics where patients with minor ailments were given self-care advice or referred back to their community pharmacy. Those requiring further care were either dealt with by the CPIP or referred to the GP [5]. The report suggested a definite need for a clear pathway. All pharmacists can obtain a prescribing qualification and develop core principles around working and prescribing in primary care, such as clinical examination, assessment, and diagnosis. It further highlighted that there appeared to be a lack of support for GPs to help them understand the role of the pharmacists and the level of training they require to be integrated into general practice [5].

The National Pilot for Emergency Medicine 2016 (Pharmacists in Emergency Departments, 2016) was a multisite cross-sectional observational study that included 18,613 patients [12]. The study analyzed the impact of independent prescribing pharmacists in an Accident and Emergency setting and concluded they could autonomously manage 36% of patients. The major training areas identified were triaging skills and physical examination skills, including interpretation of blood tests and x-rays. The study did not investigate whether the pharmacists could have treated patients in their usual community pharmacy setting [12].

Materials and Methods

Two activities were undertaken:

1. Explore the extent of the independent prescribing pharmacists' current employability in Wolverhampton.
2. Explore the opinion of pharmacists who are not qualified as independent prescribers on the skills and knowledge they believe they lack and should master before becoming prescribers using an online survey.

Local employability

There are currently 58,225 registered pharmacists in the UK, with 6192 (10%) are registered as independent prescribers. There are currently 211 clinical commissioning groups (CCGs) in the UK. Using the CCG list for GP's based in Wolverhampton, each surgery was individually contacted to determine whether the surgery employed an independent prescriber pharmacist (IP). If so, the number of IPs employed is measured as Full-time Equivalent (FTE). The information was used to ascertain the number of IPs employed in a prescribing

role compared to qualified and registered. Increasing the number of IP responsible for providing primary care may improve patient access to healthcare; however, only 21 out of 57 surgeries (37%) in Wolverhampton CCG employed an IP. With only 7 out of 57 (12%) surgeries employing an IP on an FTE basis, the remaining employed IP mainly on a part-time (PT) basis. There were 70 IPs employed a total of 50.2 FTE.

Pharmacists' opinions survey

Community pharmacists were asked to complete a questionnaire around extending prescribing services into the community and the skills and knowledge required to achieve that. The anonymous, one attempt per person survey was composed online using Survey Monkey™. The link was sent to all pharmacists in Wolverhampton and Birmingham who were not qualified independent prescribers, using the public online email contacts for their pharmacies (n=70 in Wolverhampton; n=285 in Birmingham, a total of 355 pharmacists). Using the Survey Monkey™ data analysis utility to review the responses.

Results and Discussion

Only 52 responses were returned (15%); 65% males and 35% females. There were 59% married, 39% single, and 2% did not disclose. The majority (48%) were 31-40 years of age, followed by 22-30 years old (39%), 41-50 years old (12%), and 1% did not wish to disclose. Out of the total respondents, there were 77% from an Asian background, 14% white, and 9% from a Black background. The majority (75%) of respondents worked FTE, and the remainder worked PT. There was 96% first degree qualified in the UK, 2% from an EU country, and 2% from non-EU overseas. Additionally, 69% already had a postgraduate qualification, and the remainder held only their first degree. Most of those who had postgraduate degrees were employed in hospitals (25%), general practice (45%), or academia (22%), where their postgraduate qualification was an employment requirement. There were 42% worked in two sectors of those three. The other 28% worked in community pharmacies and did

not have postgraduate qualifications. There were only 2 respondents had Doctor of Philosophy, 6 had Master degrees and 8 had Clinical Diploma.

When participants were asked in which sector they would like to work in the future as IP, the majority (37%) selected general practice, followed by urgent care (21.6%), community pharmacy (14%), private clinic (12%) and care homes (10%). Participants were then asked to nominate the sector where they spend most of their time. The majority (71%) nominated community pharmacies. When participants were asked their special area of interest, diabetes (30%), minor ailments (20%), and respiratory care (18%) were the most listed (**Table 1**).

Table 1. Area of Interest for Future Specializations

Area of interest	Frequencies
Antibiotics	4%, 2
Diabetes	30%, 15
Medication reviews	12%, 6
Minor ailments	20%, 10
Paediatric medicines	4%, 2
Pain	2%, 1
Respiratory	18%, 9
Cardiovascular diseases	10%, 5
Substance misuse	4%, 2

Participants were then asked about their clinical knowledge and their confidence level in applying this knowledge (**Table 2**). The most selected areas as highly confident were 'I am aware and able to apply public health issues into my Practice' at 19.6%, followed by pharmacology and routine biochemistry equally at 17.65% compared to all other clinical areas. 23.5% reported not being confident in interpreting highly specialized diagnostics, followed by anatomy at 18%. The most selected as the first option of course of future studies was 1-2 days continuous professional development (CPD) by 42.55%, where all longer courses were selected as 5th (53%), 6th (63%), and 7th (72%) options indicating that the majority prefer a maximum of 6 month PT studies (**Table 3**).

Table 2. Current Knowledge Level

Area of competency	1-Strongly agree	2-	3-	4-	5-strongly disagree	Total responses
I have a good working knowledge of human anatomy.	14%, 7	30%, 15	18%, 9	20%, 10	18%, 9	50
I have a good working knowledge of the physiology of a range of common medical conditions.	12%, 6	38%, 19	22%, 11	14%, 7	14%, 7	50
I have a good working knowledge of the physiology of a wide range of medical conditions.	13.73%, 7	35.29%, 18	13.73%, 7	21.57%, 11	15.69%, 8	51
I have a good working knowledge of the pharmacology of a range of common drugs affecting the human body.	17.65%, 9	37.25%, 19	15.69%, 8	11.76%, 6	17.65%, 9	51
I have a good working knowledge of the pharmacology of most drugs.	13.73%, 7	37.25%, 19	23.53%, 12	13.73%, 7	11.76%, 6	51
I understand the biochemistry and routine investigations of most common diseases.	10%, 5	24%, 12	26%, 13	24%, 12	16%, 8	50
I understand the biochemistry and medical genetics of a wide range of diseases.	9.8%, 5	15.69%, 8	21.57%, 11	29.41%, 15	23.53%, 12	51

I am aware and able to apply public health issues into my practice	19.61%, 10	45.1%, 23	13.73%, 7	9.8%, 5	11.76%, 6	51
I am confident in interpreting diagnostic tests such as blood and urine results.	17.65%, 9	25.49%, 13	17.65%, 9	23.53%, 12	15.69%, 8	51
I have a good understanding of mental health issues which may affect patients	11.76%, 6	23.53%, 12	21.57%, 11	31.37%, 16	11.76%, 6	51
I am able to deal with special patient groups such as the elderly, paediatrics and pregnant women	9.8%, 5	29.41%, 15	21.57%, 11	29.41%, 15	9.8%, 5	51
I am able to deal with patient with special needs	9.8%, 5	17.65%, 9	23.53%, 12	37.25%, 19	11.76%, 7	51

Table 3. Preferred Future Degrees

Degree	1-First selected option	2-	3-	4-	5-	6-	7-Last selected option	TOTAL-
CPD (1-2 days)	42.55%, 20	21.28%, 10	8.51%, 4	2.13%, 1	4.26%, 2	10.64%, 5	10.64%, 5	47
Practice certificate (6 months - PT)	22.92%, 11	31.25%, 15	22.92%, 11	6.25%, 3	4.17%, 2	6.25%, 3	6.25%, 3	48
Post graduate diploma (12 month - PT)	14.89%, 7	21.28%, 10	38.3%, 18	10.64%, 5	12.77%, 6	0%, 0	2.13%, 1	47
Master by course work (18 months - FTE)	6.38%, 3	8.51%, 4	17.02%, 8	51.06%, 24	14.89%, 7	2.13%, 1	0%, 0	47
Master by research (18-24 months – FTE or 3 years PTE)	2.13%, 1	2.13%, 1	10.64%, 5	14.89%, 7	53.19%, 25	10.64%, 5	6.38%, 3	47
Professional doctorate (3 years FTE or 4 years PT)	8.7%, 4	6.52%, 3	0%, 0	8.7%, 4	10.87%, 5	63.04%, 29	2.17%, 1	46
Doctor of philosophy (3 years FTE or 4 years PT)	4.26%, 2	8.51%, 4	4.26%, 2	2.13%, 1	0%, 0	8.51%, 4	72.34%, 34	47

Participants were then asked about their preferred learning method; most participants (55%) selected ‘mix of work-based

and attendance learning, followed by full-time university at 30.6% (Table 4).

Table 4. Preferred Method of Learning

Preferred method of learning	Frequency of Selection	Total responses
Full-time university by attendance	30.61%, 15	49
Full-time university by distance with intensives (attendance at the university for 1-5 days)	0%, 0	47
Full-time university by a distance no intensives	2.08%, 1	48
Part time university attendance	0%, 0	48
Part-time university by distance with intensives	2.08%, 1	48
Part time university by distance no intensives	0%, 0	48
Blended (mix of online, self-directed, and attendance, but time and completion dates of tasks are specified)	0%, 0	49
Flexible (mix of online, self-directed, and attendance, where time and completion dates of tasks are not specified)	0%, 0	49
Work-based learning alone	6.12%, 3	49
A mix of work-based learning and blended or flexible learning	0%, 0	49
A mix of work-based learning and distance learning	2.04%, 1	49
A mix of work-based learning and attendance learning	55.1%, 27	49

Participants were asked if they would like to see the provision of independent prescribing as part of everyday practice in community pharmacies; 90% answered yes. One participant commented, “It depends what it is being used for, so as I couldn’t say yes for everything as a generalist as there is not sufficient clinical support to mentor and close working. However, I think yes, there are roles for prescribing, with public health options such as smoking cessation or vaccination clinics good for patients.”

Participants were asked if they would like to perform prescribing activities during normal GP hours or only after hours and in an emergency; most (60%) selected both during and after the normal GP opening hours (Table 5).

Table 5. Preferred Method of Learning

Answer choice	Responses
Normal GP hours	20.51%, 8
After GP hours and in an emergency?	7.69%, 3

Both normal GP hours and after hours and in an emergency?	58.97%, 23
Other (please specify)	12.82%, 5
Total responses	39

Participants were then asked about the barriers regarding the provision of prescribing by pharmacists from community pharmacies, and participants made the following comments:

"I am not allowed to start prescribing until I have been practicing for 2 years and can find a DMP. This is unnecessary because my knowledge was at its highest when I first graduated, and I also became a prescriber after graduating. So the GPhC is the biggest barrier. The second barrier is the doctors themselves. They ask for

money to supervise you, and nobody funds us to do the course, but the government keeps saying they want to ease the pressure off doctors."

"I feel there would be a total conflict of interest. If I owned a pharmacy, it would be in my favor to prescribe more medications to get my script numbers up."

"There is no structure in place to allow this. I don't think the CCGs would welcome it. Patients might not want their data shared with the pharmacist. There isn't a proper consultation room and space in most pharmacies. The pharmacist is not adequately trained."

Participants suggested some barriers and solutions, where the main themes were financial restriction, high workload, and need for training and infrastructures (**Table 6**).

Table 6. Solution for the Identified Barriers to Community Pharmacy Prescribing

Themes	Responses
Boost of pay and funding	<p>The government should pay the pharmacists to become prescribers and pay the doctor to supervise us. They pay so much for doctors' training.</p> <p>The government should pay a fee for service provided by the community pharmacist and allow prescribers to prescribe in a community pharmacy</p> <p>Pay per service, not a prescription</p> <p>More pay, better provision of staff, and more time allocated to complete jobs</p> <p>Pharmacists need to be paid to treat patients rather than in prescription items.</p> <p>NHS England to give community pharmacies a prescribing budget</p> <p>Similar funding model to GP</p> <p>NHS incentivization such that for GPs</p> <p>Money needs to be invested in the community pharmacy sector</p> <p>Pharmacists need to be paid to treat patients rather than in prescription items.</p> <p>The money should be shared between GP and pharmacy</p> <p>Greater publicity for the sector, greater funding, and better insurance</p> <p>Instill into current community pharmacy contract, incentives, and benefits</p>
Workforce re-structure	<p>Perhaps two pharmacists, one prescribing one non-prescribing at each pharmacy</p> <p>Give us more staff</p> <p>Have a second pharmacist or a technician</p> <p>Perhaps have extra staff.</p> <p>In the pharmacy setting, we already have access to PMR records. Staffing is not a problem out of hours since many late-night pharmacies are already open, and with the current cost cuts in pharmacy, I think this will be a way to ensure the survival of community pharmacies.</p> <p>Have another pharmacist as the responsible pharmacist</p>
Pharmacy design and access to records	<p>More space, so maybe they can give one consultation room to the pharmacist to deal with minor ailments and chronic conditions?</p> <p>Bigger consultation rooms equipped with everything you need</p> <p>Move community pharmacies into surgeries so the GP and pharmacist can work together more</p> <p>Pharmacists can prescribe in a GP surgery or somewhere separate from the community pharmacy.</p> <p>Make a good consultation room.</p> <p>A larger consultation room GP receptionist referring patients to see Independent Prescriber when appropriate</p> <p>Make record sharing compulsory like hospital and GPs</p> <p>There needs to be a national database accessed from GP, hospitals, and pharmacies.</p> <p>Those who have done diploma level for minor conditions with physical examination skills should be given patient records.</p> <p>Have a shared platform where community healthcare professionals can access patients' notes/data.</p>
Implementation and barriers to training	<p>We must start small; increase GPs, and upskill pharmacists to prescribe for these areas.</p>

GPs need to be informed about current changes; most have no clue.

Set training for all involved with a clear policy on the type of patients seen.

GP supporting pharmacist input

Workload shared with other healthcare professionals appropriately

I would be happy to have training for this, but I am a locum, so it would be hard for me to have a lot of time to attend university

Do IP in university, money difficult to comment

Finally, participants were asked to add further comments (Table 7). The major theme was pharmacists, the NHS, the GPhC, higher education, and confidence in practice. However,

surprisingly, there was no mention of how patients may react to having their community pharmacist as their first point of call for healthcare provision in conjunction with their GPs.

Table 7. Participants Additional Comments

Pharmacist – NHS issues	<p>My only concern is that it would be difficult to implement prescribing in a hospital setting.</p> <p>My concern is that pharmacists are going to become underpaid GPs</p> <p>Effective puts pharmacist clinical knowledge to use. Saves time</p> <p>I have no objection to this. However, this function must be separate from the pharmacy establishment.</p> <p>I think it's a good idea and should be funded by the government</p> <p>I don't see the point of a pharmacist doing a prescribing course if they cannot prescribe in their job</p> <p>I think this is the way forward as there are too many pharmacists</p> <p>The public need to start paying for their care, and pharmacists should be able to charge for the consultations</p>
Confidence to practice	<p>Please don't just think IP will do this as it is so much more about people, communication, and clinical support</p> <p>I think it's good to finally have a way of letting the pharmacist use their clinical knowledge as I have forgotten so much of it</p> <p>This is the way forward for pharmacy with the caveat that pharmacists have to fully embrace continuing education and ensure they have the necessary skills to move the profession forward.</p> <p>we are very useful in providing a holistic approach and are correctly well placed to be the interim providers of healthcare</p> <p>Practice in a variety of settings</p> <p>Not sure we will be ready to take this on for several years, but again with GP practice support, some advanced practitioners will do this. Not for all pharmacists, as not all of us have the right soft skills to care for patients</p> <p>They need the relevant exposure and guidance to build competence before prescribing autonomously.</p> <p>I know a few people who have done courses so they can prescribe, and they have all said they find the job more satisfying</p> <p>I think if a pharmacist wants to do more qualifications, then they should work in a GP, not in a community pharmacy</p>
Higher educations -GPhC	<p>I feel like the actual pharmacy course needs to be changed because drugs were emphasised not diseases and anatomy, when I did it.</p> <p>I think there needs to be more training</p> <p>Let's not try to run before we can walk. Start by ensuring universities takes the right candidates with suitable patient facing skills.</p> <p>Give them patient contact from day 1.</p> <p>Need more experiential-based training to develop and embed skills</p> <p>It should be done before doing the prescribing course</p> <p>Given the opportunity and the access to these courses, I think that most pharmacists will, as many have done myself included, take advantage of the opportunities for upskilling.</p>
Change in scope of practice	<p>I think this is the way forward. I have already undergone training as a phlebotomist and have started getting my consultation room accredited by the CQC to run a blood-testing clinic from my pharmacy. I have completed a postgraduate diploma in clinical endocrinology and am now very confident interpreting blood results.</p> <p>I think all the pharmacies should have a pharmacist or technician that checks prescriptions and then a separate pharmacist to do consultations.</p> <p>It would be interesting and helpful for me if there were support/resources available for combining pharmacist independent prescribing with non-traditional pharmacist roles, e.g., combining pharmacotherapy and psychotherapy</p> <p>Community pharmacy needs independent prescribers. Most already have a consultation room, and now that dispensing model is being rolled out, that will free time for pharmacists to do more clinical work and ease demand on secondary care.</p>
Pharmacist - GPs	<p>Great opportunity for community practice to take the burden of GP practices. Set up own clinics in specialty as well as progress to minor ailments</p> <p>I think it is good, but I don't think the GPs will like it</p> <p>It will help reduce pressure on doctors</p> <p>it is good as it helps the GP out and patients always complaining can't get an appointment</p>

I think it is a positive step in Pharmacy, and I feel patients would welcome this. However, I feel GP's would be against this, which would make it hard to achieve.

I think it would be good for the public to go to the pharmacist instead of the doctor to get medicines

Convenience for patients, saving appointment times for doctor appointments in general practice.

Marriott *et al.* [1] discussed the need for significant clinical practice experience in the final year of the pharmacy undergraduate course for students to have a similar exposure to patients that students on a medical course have, to equip them to deal with complex patients. In Australia, the pharmacy curriculum is being evolved to help address the patient's needs facing experiential learning, hands-on activities throughout the 4-year course, intensified in the final years of study. It is believed that this would allow pharmacists to apply their knowledge and develop their competencies in an integrated way, similar to the way doctors have clinical placements [1]. Australia also led the pharmacist scope of practice evolution by introducing the home medicines review (HMR) program funded by Medicare Australia (the equivalent to the NHS in the UK). For a pharmacist to conduct HMR/s, they must successfully complete the coursework-based accreditation program, annual CPD equivalent to that required by General Medical Practitioners for their annual registration, and complete every 3-years an online clinical decisions examination. HMR is an outreach health service delivered at the patient's home (or in a care home). The GP formally refers the patient to an accredited pharmacist to initiate the service [1].

The UK undergraduate pharmacy training provides limited patient exposure (around 40 hours of shadowing/observations placement time) for the entire course. This is different from the medical curriculum where students complete 1400 hours of clinical placement in their final year of studies alone, across a variety of specialties such as primary care, hospital, and acute care, elective and students-selected components (SSC) settings, and a total of 119 weeks of clinical placements during their total undergraduate studies [13]. Similarly, nurses must have completed 2300 hours of clinical exposure during their undergraduate studies and a total of 4600 hours before they register as nurses [14]. Therefore, postgraduate pharmacist training that prepares them for patient-facing roles involving clinical diagnosis and treatment must consider their lack of clinical exposure. Jungnickel *et al.* [15] recognized that the future competencies of pharmacists could not be developed in isolation and would require the input of the National Medical Association. Despite evidence of higher patient satisfaction and better quality care in specialized clinics, e.g., anticoagulants clinics run by pharmacists [16], there has been limited research into the training needs of pharmacists to move into complex prescribing roles. Many studies were conducted on the use of inter-professional learning to enhance the relationship between the different healthcare professionals [17-19]. Sinopoulou *et al.* [20] was a study into the patient safety benefits when a pharmacist is present in the emergency department, and showed 'a reduction of 80% of incorrect doses, 66% of unintentionally omitted medicines, 50% of missed doses for prescribed medications and 71% of discrepancies found on clinical review. On the admission wards, medicines reconciliation rates

within 24 hours improved on weekdays from 77.9% to 96.43%.' Other studies report similar benefits [21, 22].

There appears to be growing support for enhanced pharmacy-based management of minor ailments from pharmacists and associated professional and regulatory bodies across Europe, Australia, Canada, New Zealand, and the UK. It is well recognized that there is a burden of patients presenting with minor ailments to general practice and the emergency departments, therefore highlighting the need for further research to identify any gaps between policy and practice [4]. Patients (60 years or older, pregnant, or on income support and allowance) may present a minor ailment in a community pharmacy in Scotland. They can obtain over-the-counter (OTC) medicines at no cost, thereby increasing access to treatments for patients where affordability may be a barrier [23]. However, such a national service does not exist in England and has long been a conflict between policymakers and the public [4]. In addition to this, pharmacists are restricted to the prescribing and supply of OTC and pharmacy medications (P) when providing independent treatments for patients; this is despite the pharmacist having acquired a much broader knowledge of medicines as part of their undergraduate training [24]. Up to 20% of all GP consultations are for minor ailments, excluding consultations where a consultation for a more serious condition identifies a minor ailment [25]. Providing these services could reduce GP visits by approximately a third [26].

Conclusion

This study confirmed the need for rethinking the current postgraduate pharmacy independent prescribing education, the pharmacists' independent prescribers' integration into primary care, and the need to redistribute resources and responsibilities.

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