An investigation of strategies enhancing the public health role of community pharmacists: a review of knowledge and information

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Abstract

Objective The study aims to review the literature about strategies that can enhance the public health role of community pharmacists in the UK; and to identify main themes emerging from the literature as well as identify gaps there from.

Methods Relevant literature from both the UK and overseas was identified, through electronic database searches. The search was limited to the period from January 2007 to May 2012.

Key findings There are numerous opportunities for community pharmacists in public health. Following the review of knowledge and information, a wide range of strategies that could help enhance the public health role of community pharmacists in the UK were identified. The dominant themes included strategies to enhance the public health role of community pharmacists through: enhancing the effectiveness of communication techniques of students and pharmacists; advancing pharmacy practice experience of students in public health; enhancing the public health content of pharmacy curricula; managing legitimate medication needs of the public to identify/prevent drug-related problems; as well as promoting patients’ self-management capacities.

Conclusions Although a wide range of strategies that could help enhance the public health role of community pharmacists in the UK were identified, there were, however, gaps in the UK evidence base. There is a need to enhance, among other things, the public health training and skills of pharmacists, enabling the development of a mixed market in community pharmacy practice by contracting public health services directly to individual pharmacists, as well as pharmacists using newer technologies, including the social media, to enhance public health practice.

Keywords community pharmacists; health policy; health services research; patient satisfaction; public health role; quality of care

Introduction

According to the Secretary of State for Health, Britain is now the most obese nation in Europe.\textsuperscript{[1]} In addition, Britain has one of the worst rates of sexually transmitted infections recorded, with a relatively large population of problem drug users and increasing levels of harm from alcohol consumption.\textsuperscript{[1]} Other health difficulties faced by Britain, include: smoking, which alone claims over 80,000 lives every year; poor mental health, which, when tackled, could reduce overall disease burden by nearly a quarter; and health inequalities between the rich and poor, which have been getting progressively worse.\textsuperscript{[1]} The government white paper\textsuperscript{[1]} which responds to Professor Sir Michael Marmot’s report,\textsuperscript{[2]} uses a new approach, which aim to build people’s self-esteem, confidence and resilience right from infancy – with stronger support for early years.\textsuperscript{[3]} The white paper complements ‘A vision for adult social care: Capable communities and active citizens’\textsuperscript{[3]} in paying more attention in personalised, preventative services that are focused on delivering the best outcomes for citizens and that assist to establish the Big Society.

It has been acknowledged that community pharmacists are in a prime position to help combat health issues, many of which are identified risk factors for chronic diseases.\textsuperscript{[4]} This is supported by the evidence that community pharmacies are easily accessible and provide a convenient and less formal environment for those who cannot or do not wish to visit other kinds of health services.\textsuperscript{[4,5]} Yet a number of UK studies\textsuperscript{[6–8]} have looked at the role of...
pharmacists in public health. However, the focus of these studies has been mainly on identifying the different types of public health services being provided by pharmacists; investigating the attitude of patients or service providers towards the public health role of pharmacists; or identifying some of the barriers hindering the public health role of pharmacists. There seems to be an absence of empirical studies that focus specifically on identifying strategies that can enhance the public health role of community pharmacists in the UK.

In a service-focused study,[9] it was identified that smoking cessation (SC) services; infection control and prevention; promoting cardiovascular health and blood pressure control; provision of emergency hormonal contraception (EHC); prevention and management of drug abuse, misuse and addiction; and healthy eating and lifestyle advice were the main roles provided by community pharmacists in public health. There were, however, gaps in methodological issues, and in the UK evidence base, particularly as it relates to: preventing falls in the elderly; immunisation and vaccination services; prevention and risk assessment of osteoporosis; as well as gaps in the enablers of and barriers to the role of Inner London community pharmacists in public health.[9]

It has also been noted that despite the input from various governments to enhance the public health agenda for pharmacy, and the numerous opportunities that exist in public health services for community pharmacists,[1,10,11] the UK community pharmacy public health practice still remains at a basic level.[6,7,9] This observation is supported by another study,[12] which argues that although the pharmacy profession has evolved from product-oriented to patient-centred care, with pharmacists contributing to micro-level public health activities (e.g. disease management, health and wellness screening, immunizations, medication therapy management), there remain unmet needs for pharmacists in micro-level public health functions (i.e. assessment, policy development and assurance at the population-based level).

The aim of this study, therefore, is to identify strategies that can enhance the public health role of community pharmacists in the UK.

Methods

Search strategy

A literature search was carried out by searching five databases: Google Scholar, CINAHL, Biomedical Reference Collection database, MEDLINE and International Pharmaceutical Abstracts. The aim of the literature search was to determine what earlier work on strategies to enhance the public health role of community pharmacists has already been conducted. The search terms used were: ‘enhancing’ or ‘enhance’ or ‘enhanced’ or ‘advancing’ or ‘advance’ or ‘advanced’ and ‘public health’ and ‘community pharmacy’ or ‘pharmacy’ or ‘community pharmacists’ or ‘pharmacists’. The search dates were limited from January 2007 to May 2012 to ensure that only recently published materials were used. The search was also limited to full text, human and English language. Most of the papers identified originated from overseas (mainly from the USA). All citations were considered, abstracts of interest read, and final references selected. Only original papers were included, excluding materials published before 2007 or studies not related to enhancing the public health role of community pharmacists. Also excluded were publications in foreign languages due to the cost and time involved in translating materials, as well as bachelor and taught MSc dissertations and book reviews. The initial search using the search terms and before the filters were used generated 1.3 million references, most of which were unrelated to the topic of interest. After using the filters above and removing duplicates, the searches performed for the five electronic databases generated 36 usable references, which are summarised in Table 1.

Results

In terms of distribution, 27 of the 36 identified papers were empirical studies (75%), one paper was a literature review (2.8%) and eight papers were reviews (reports and commentaries, 22.2%). While majority of the identified papers originated from the USA (21, 58.3%), there was a significant gap in the UK evidence base (seven papers, 19.4%), particularly for those themes where no UK papers were identified (see Table 1; for definition of categories, see Table 2). In terms of the composition of the empirical studies, it was noticed that majority of the identified papers used a quantitative approach in their study, while only three papers (8.3%) used a mixed-method approach.[13–15] There was also a significant gap in the quality of evidence of the papers reviewed – only one literature review study was identified.[16] Following the review of knowledge and information on strategies for enhancing the public health role of community pharmacists, a number of themes emerged (see Table 1).

The use of the social media in public health education

According to a US study,[17] it is now possible to use social media to, for example, facilitate the organisation of people and distribution of content, and to enhance the public health role of community pharmacists. Hence, through evolutions in social media (e.g. Facebook, Twitter, YouTube and Skype).[17,18] we are beginning to see a change in the way society communicates. While the authors acknowledged that implementing health interventions via social media poses challenges, they also highlighted the fact that several examples exist that display the potential for pharmacists to use social media in health initiatives. The only concern with the paper was that it provided no information about how the provision of public health services by pharmacists through social media might be funded. The US study, however, strengthens other positions on the adoption of new technologies in UK pharmacy practice.[19,20] Again, the use of the social media can also enable individual community pharmacists to reduce governments’ healthcare costs by cutting out unnecessary middlemen in the delivery of pharmaceutical care. This is in line with what a UK professional organisation has been proposing.[21]

Developing good adherence strategies for patients

In a retrospective study evaluating the factors associated with compliance to thiazide diuretics in a Chinese hypertensive
it was shown that fee payers and follow-up visitors were significantly associated with better anti-hypertensive compliance. However, patients who were newly prescribed thiazide diuretics and those of lower socio-economic status were more likely to be non-compliant to anti-hypertensive therapies. The identified link between fee paying and compliance is helpful in tackling medicine wastage, with current estimates in England put at £300 million per year. Hence, the development by community pharmacists of good compliance strategies should help minimise wastage of medicines, as well as guarantee better health outcomes for patients. Closely related to this are the findings of a US cross-sectional mail survey that investigated the influence of pharmacists' attitudes on intention to report serious adverse drug events (ADEs) to the Food and Drug Administration. Although 90% of the respondents believed that reporting serious ADEs would improve patient safety, interestingly, 72.6% indicated that reporting serious ADEs was time consuming, while over half (55.5%) of the respondents believed that reporting serious ADEs disrupted the normal workflow.

### Enhancing the public health content of pharmacy curricula

According to a US study, doctorally prepared public health officials design, implement and evaluate health programmes and policies, translate research, and communicate policy and health system change. In an investigation of the public health content of US pharmacy schools through a web-based survey, another US study found that about 21% of respondents offered a joint master’s degree in public health (PharmD/MPH), while approximately 14% indicated that a minor in
public health was available. While the PharmD programmes offered by most US pharmacy schools tended to include more curricular elements related to assessment and assurance than policy development, the public health topics offered were most often reported to be part of a broader course rather than stand-alone courses. The Doctor of Public Health (DrPH) degree is not yet popular with UK pharmacists. Only one possible reason for the low popularity of the DrPH degree in the UK is that universities offering the programme have yet to 'define a market for the graduates' of the programme, which contrasts with the USA where the market for the DrPH is fully developed.

Promoting interdisciplinary initiatives in pharmacy education and practice

There is now an increased emphasis in the UK on interdisciplinary initiatives in the management of many causes of ill health. In the USA, inter-professional education is driven by health professional education associations such as the Association of American Medical Colleges, the American Association of Colleges of Pharmacy and so on. However, in a commentary provided in another study, the authors summarised current clinical research directives as well as other interdisciplinary initiatives. According to the paper, the National Institutes of Health Clinical and Translational Science Award initiative is being driven by the ‘urgent need to transform health and medicine from the curative and onerous paradigm of today to the vision of a more predictive, personalized, and pre-emptive world of health care’.

To accomplish this paradigm shift, a mandate for greater interdisciplinarity has been issued. Also supporting the interdisciplinary initiative are the findings of a UK study that investigated the community pharmacy ‘minor ailment scheme (MAS)’ across three primary care trusts in the North East of England. During the observation period, 396 patients used the MAS, of whom 230 (58.1%) indicated they would have made an appointment with their general practitioner (GP) if the MAS was not in place. In addition, there was an estimated reduction in local healthcare costs by £6739 per month through the MAS. The authors have therefore concluded that MAS released National Health

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Evidence categories used by the Department of Health in the National Service Frameworks[80]</th>
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<tbody>
<tr>
<td>A1</td>
<td>Systematic reviews which include at least one randomised controlled trial (RCT), e.g. systematic reviews from Cochrane or NHS centre for reviews and dissemination</td>
</tr>
<tr>
<td>A2</td>
<td>Other systematic and high-quality reviews which synthesise references</td>
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<tr>
<td>B1</td>
<td>Individual RCTs</td>
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<tr>
<td>B2</td>
<td>Individual non-randomised, experimental/intervention studies</td>
</tr>
<tr>
<td>B3</td>
<td>Individual well-designed non-experimental studies, controlled statistically if appropriate. Includes studies using case control, longitudinal, cohort, matched pairs or cross-sectional random sample methodologies, and well-designed qualitative studies; well-designed analytical studies including secondary analysis</td>
</tr>
<tr>
<td>C1</td>
<td>Descriptive and other research or evaluation not in B (e.g. convenience samples)</td>
</tr>
<tr>
<td>C2</td>
<td>Case studies and examples of good practice</td>
</tr>
<tr>
<td>D</td>
<td>Summary review articles and discussions of relevant literature and conference proceedings not otherwise classified.</td>
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Supporting efforts aimed at preventing the development of antimicrobial resistance and the spread of infections

Antibiotic resistance remains a global problem. However, a recent UK study\[49\] has identified the role of community pharmacists in infection control. In a structured questionnaire conducted in the Ashanti region of Ghana,\[42\] it was found that the majority of severe malaria cases (89%) occurred in children aged 5 years or less. In terms of sourcing, medicines were found to have come from licensed chemical sellers (50%), pharmacies (21%), neighbouring clinics (9%) or ‘other’ sources (20%), including leftover medicines at home. Some of the identified limitations of the paper included 247 (49%) study participants being lost to follow-up for outcomes' assessment at the health facilities due to untraceable addresses or living too far from the facilities, and the study targeted only one region in the country and two facilities within that region.\[42\]

Promoting patients’ self-management capacities

According to a UK study,\[43\] there are three areas relevant to enhancing NHS patients’ self-management capacities: the policy formation process leading up to the Expert Patients Programme’s (EPP) present stage of development, the evidence base supporting claims made for its effectiveness, and the significance of psychological concepts such as self-efficacy in approaches to improving public health. However, some of the issues raised in the paper that concern funding will no longer be valid, particularly as NHS funding will soon be controlled by new bodies – the NHS Commissioning Board and the clinical commissioning groups.

In a cross-sectional phone survey,\[44\] the authors examined Hong Kong public knowledge, attitudes and behaviours regarding self-medication, self-care and the role of pharmacists in self-care. Although, in this study, the majority of respondents supported the idea that patients with chronic illness can self-manage their diseases, the revelation that less than half agreed to use a pharmacist-led approach in self-care is an issue that should concern EPP development in the UK. Yet in a related work,\[45\] another group of researchers explored the perspectives of physicians, pharmacists, traditional Chinese medicine practitioners and dispensers on the self-management of patients with chronic conditions; in addition, they explored the possibilities of developing pharmacist-led patient self-management in Hong Kong. Similar to the findings of the earlier study,\[44\] UK pharmacists ought to be worried about the concerns of three professionals who believed that pharmacists were drug experts only and could therefore only play an assisting role. This perception that pharmacists have insufficient training in disease management highlights once again the need to strengthen both the clinical and the public health training of UK pharmacists.\[46-47\]

Managing legitimate medication needs to prevent the accidental use of banned substances

According to a US study that looked at polypharmacy and combination therapy,\[50\] the risks of polypharmacy and the potential for inappropriate therapy must be considered and balanced against the possible benefits of multiple drug therapies. The paper suggests that an optimal approach to reducing the risks and maximising the benefits of polypharmacy should include regular reviews of patients’ medication lists, which can then be changed to include, where appropriate, combination therapy and the use of single-pill combinations.\[50\] This is similar to what community pharmacists do in the UK, where it is known as a ‘medicines use review’ – a service that needs a further overhaul to make it more relevant to patients. Interestingly, the Scottish Government has recently published guidance on tackling polypharmacy at a national level.\[51\] Deviating from the widely accepted definition of polypharmacy, which is ‘the taking of four or more medicines’, the Scottish solution is to redefine polypharmacy to mean ‘when a patient is taking more drugs than needed’.\[51\]

Strengthening patients’ education in safe medication disposal methods

In a US cross-sectional survey that determined the public’s current method of medication disposal and knowledge of the environmental impact of inappropriate medication disposal, it was found that respondents frequently flushed medications down the toilet (27.2%) or incorrectly dumped medications in the waste bin (34.6%).\[48\] While only 30.9% had received previous advice on safe medication disposal, post-education survey results indicated that 80.1% of respondents were willing to change their disposal methods, and an increased numbers of respondents viewed inappropriate medication disposal as a moderate to substantial problem (from 57.2% pre-education to 83.9% post-education).\[48\] There is evidence suggesting that this trend may not be much different in the UK.\[49\]

Enhancing the management of polypharmacy and long-term conditions

According to a US study that looked at polypharmacy and combination therapy,\[50\] the risks of polypharmacy and the potential for inappropriate therapy must be considered and balanced against the possible benefits of multiple drug therapies. The paper suggests that an optimal approach to reducing the risks and maximising the benefits of polypharmacy should include regular reviews of patients’ medication lists, which can then be changed to include, where appropriate, combination therapy and the use of single-pill combinations.\[50\] This is similar to what community pharmacists do in the UK, where it is known as a ‘medicines use review’ – a service that needs a further overhaul to make it more relevant to patients. Interestingly, the Scottish Government has recently published guidance on tackling polypharmacy at a national level.\[51\] Deviating from the widely accepted definition of polypharmacy, which is ‘the taking of four or more medicines’, the Scottish solution is to redefine polypharmacy to mean ‘when a patient is taking more drugs than needed’.\[51\]

According to a US study that looked at educational opportunities and anti-doping roles and responsibilities of pharmacists, pharmacists can assist in anti-doping activities by managing the legitimate medication needs of athletes to prevent them from accidentally using a banned substance, as well as by educating athletes and the public about the health consequences of using performance-enhancing substances.\[52\] While pharmacists can also work with anti-doping agencies, the main barrier to pharmacists’ involvement in anti-doping activities is that there are presently very few established educational opportunities in this area for pharmacists and pharmacy students; hence the need to develop educational programmes in sports pharmacy and doping control for post-graduate training and experiential (internship) programmes.\[52\]

The findings of another US study\[53\] support the role of pharmacists in managing the legitimate medication needs of the public. This study determined the effectiveness of TIMER (Tool to Improve Medications in the Elderly via Review) in helping pharmacists and pharmacy students to identify
drug-related problems during patient medication reviews. According to the paper, TIMER resulted in an increase in the number of drug-related problems identified by practising pharmacists and pharmacy students during medication reviews of hypothetical patient cases.[153] An Australian paper[154] has argued for a need to highlight the role of pharmacists in opioid substitution therapy, as well as the scope for expanding this role in the future.

Remunerating pharmacists directly for providing public health services

Inadequate remuneration has been identified as a major barrier to pharmacists’ involvement in public health services.[9,55] Through a pilot project[13] that described the Wisconsin Pharmacy Quality Collaborative, it was demonstrated that collaboration among payers and pharmacists is possible; moreover, this can result in the development of an incentive-aligned programme that stresses quality patient care, standardised services and professional service compensation for pharmacists. Hence, there is a need to change the present community pharmacy model,[156] as well as contract and remunerate individual pharmacists/groups of pharmacists (partners) directly for providing public health/pharmacy services, as is being proposed in Scotland.[157] This may not only save money for funding organisations, but it could also become a huge incentive for pharmacists to engage actively in public health services.

Related to this is the impact the corporation of community pharmacy has on pharmacists’ general well-being, as well as on their willingness to provide public health services. Hence, a UK paper[158] has noted that the level of provision of EHC on a patient group direction (PGD), supervised administration of medicines, and needle-exchange schemes were lower in supermarket pharmacies than in the other types of pharmacy. While supermarkets and multiple pharmacy chains were better in their ability to raise finance for service development, the premises of such pharmacies may not be the most suitable for the provision of such services. Hence, the study argued that there is a need for a mixed market in community pharmacy to maintain a comprehensive range of pharmacy-based public health services for maximum benefit to all patients.

Innovating smoking cessation activities of pharmacists

Several studies have confirmed the role of pharmacists in SC.[9,55,59-61] In a mail survey that explored the familiarity and implementation of the national SC guideline in Finnish community pharmacies,[62] it was found that almost half (47%) of the respondents (n = 1190) were familiar with the SC guideline and that familiarity enhanced the guideline implementation. The familiarity was associated with the respondents’ perceptions of their personal SC skills and knowledge (OR 3.8), customers’ value of counselling on nicotine replacement therapy (NRT; OR 3.3) and regular use of a pocket card supporting SC counselling (OR 3.0).[62] In addition to recommending NRT, the pharmacists familiar with the guideline more frequently used other guideline-based SC methods, such as recommended non-pharmacological SC aids, compared with unfamiliar respondents.[62] Yet the association identified in the study[62] between professional self-esteem[63] and SC activities is a possible barrier to the service, which service-planners/developers will need to be aware of. The main limitation of the study was that the survey was conducted between 2006 and 2007, 4 years before the paper was published.

In a case study conducted in the USA, the investigators sought to understand what motivated retailers to discontinue tobacco sales and what employees and customers thought about their decision.[14] For independent pharmacies, the only reason given for the decision to end tobacco sales was that tobacco caused disease and death.[14] Grocers listed health among several other factors, including regulatory pressures and wanting to be seen to be ‘making a difference’. While pharmacy employees were delighted to no longer be selling a deadly product, grocery store management saw the decision to end tobacco sales as enhancing the stores’ image and consistent with their inventory of healthy foods.[14] For those pharmacy retailers that continue to sell tobacco products, it might be of interest to them that many customers said that knowing that retailers were no longer selling tobacco products made them more likely to shop at the store.[14] Hopefully, the recent announcement by CVS Caremark Corp (owners of CVS Pharmacy) to stop selling tobacco products at its 7600 stores by October 2014 should encourage other retail pharmacies in the UK and globally to follow suit.[64] The main drawback of the study[14] was that it excluded those who could not speak English in a state (California) with many Spanish-only speakers.

Nonetheless, the recent interest shown by the public in the use of e-cigarettes[65] has created the need for pharmacists to recognise the existence and the effectiveness of other untraditional methods in SC. The role of community pharmacists in SC services is limited, in that they can only supply simpler nicotine products such as patches, inhalators, gums and so on to their patients[9,55]; however, evidence from a UK study[66] suggests that by enhancing the training of community pharmacists in behavioural sciences, they will be better equipped to use behavioural change methods (e.g. the Cycle of Change) in their counselling sessions.

Advancing pharmacy practice experience of students in public health

It has been argued that as the education of future pharmacists in the provision of public health expands, so, too, will the need for colleges and schools of pharmacy to provide opportunities for students to develop public health skills through experiential learning.[67] Supporting this need, the findings of a US intervention study/survey[67] identified high satisfaction with the advanced pharmacy practice experience (APPE) in a variety of different domains including provision of pharmaceutical care, providing patient education, exercising cultural competency, referring to community resources and utilising medication assistance programmes. Interestingly, as a result of their community experience, the students recognised that working behind a pharmacy counter does not give an accurate picture of health care beyond the pharmacy.[67]

In another US intervention study,[61] it was observed that post-APPE discussion definitions were broader and more accurate. Unsolicited comments about the discussion series documented in post-APPE reflections described students’
initial lack of knowledge, improved knowledge base and improved interest in participating in public health initiatives. The paper concludes that time devoted to public health discussions during an APPE can substantially impact on student pharmacists’ knowledge base and interest in public health. While there is presently no pharmacy school in the UK offering the undergraduate PharmD programme, it is hoped that introducing a dual pharmacy/MPH degree, or at least enhancing the public health content of UK pharmacy curricula, will go a long way towards raising the confidence of UK pharmacists as public health practitioners.

Also related to this, the findings of another US study determined, among other things, the availability of experiential learning opportunities in culturally diverse areas. The paper argues that exposure to diverse populations during advanced community practice experiences has parallels with the strategic college objectives of expanding and diversifying experiential sites to enhance pharmacy students’ abilities to meet emerging patient-care challenges and opportunities. However, the generalisability of the study’s findings was limited by the small number of faculty participants (two) involved in the interview process. In a review that aimed to identify existing professional and educational initiatives for the pharmacist’s expanded role in public health, it was noted that some of the strategies and opportunities for pharmacists to pursue advanced educational training in public health will include residency programmes with an emphasis on public health, fellowship programmes in healthcare policy or public health policy, and graduate degree programmes such as the master of public health (MPH) and public health certifications. Nonetheless, in 2006, the American Pharmacists Association put forward a policy statement on the role of the pharmacist in public health, with a call for an increase in PharmD/MPH dual degree programmes. This policy statement might also benefit UK pharmacy education and practice, particularly as a similar case for a dual pharmacy degree programme in the UK has been made.

Again, in a US study that investigated the benefits of college/school of pharmacy being affiliated with community pharmacies, it was noted that pharmacy college/school-affiliated community pharmacies were more likely than non-affiliated pharmacies to participate in immunisation and emergency preparedness. Furthermore, in a US intervention study, it was observed that through the APPE and health promotion interventions, women’s awareness about health issues was enhanced, while students were also guided to achieve the desired curricular outcomes.

Other identified studies

Other identified papers include those that have looked at supporting community pharmacy-based services for alcohol misuse and community pharmacy travel medicine services, as well as a study that has investigated the general public and health providers’ perspectives on public health utilisation in community pharmacy. On travel medicine services, a UK paper was of the view that community pharmacists in the UK presently provide limited travel medicine services. However, this service could be enhanced by community pharmacists offering the travelling public general advice on various issues such as bite prevention, provision of immunizations and malaria prophylaxis, with the public in many cases also willing to pay for some of the services. This willingness to pay for community pharmacy public health services seems to agree with the findings of a UK pre-registration pharmacy audit (Agomo C, unpublished observation, 2002).

According to a UK paper that looked at how to enhance public health service utilisation in community pharmacy, all four groups of participants (the general public, community pharmacists, general practitioners, other stakeholders of pharmacy-based public health services) agreed that community pharmacies are a good source of advice on medicines and minor ailments, but they were less supportive of public health services. On barriers, some of the identified factors affecting utilisation of pharmacy services included: the community pharmacy environment, the pharmacist and support staff, service publicity, the general public, GP services, and the healthcare system and policies. Also disturbing for service planners and funders is the perception of both the general public and other health care providers of pharmacists’ competencies, the privacy and confidentiality in pharmacies, the high dispensing workload, and inadequate financial support.

While it has been noted that there is little empirical evidence of the effectiveness of community pharmacy-based services for alcohol misuse, a New Zealand/England study that explored the views of 40 pharmacists on the prospect of providing screening and brief intervention (SBI) for alcohol health promotion purposes, found that there appears to be potential for alcohol SBI services in community pharmacy. Nonetheless, for this service to be successful, the authors contended that interventions designed to reduce barriers such as apprehension about implementing SBI services due to concerns about offending or alienating customers, lack of experience and confidence, problems faced with other health promotion initiatives, time constraints, privacy, as well as the need for enhanced incentives, will need to be addressed and evaluated.

Discussion

A number of UK studies have confirmed the role of pharmacists in public health. In addition, one of the papers contributed to the conclusion of a recent Public Health England document on the role of community pharmacy in public health. In the service-focused study, the main roles provided by community pharmacists in public health were identified as: SC services; infection control and prevention; promoting cardiovascular health and blood pressure control; provision of EHC; prevention and management of drug abuse, misuse and addiction; and healthy eating and lifestyle advice. These findings are similar to the findings of two other UK studies.

Following this review of knowledge and information, a wide range of strategies that could help to enhance the public health role of community pharmacists in the UK have been identified. The themes identified include strategies to enhance the public health role of community pharmacists through the following: the use of the social media in public health education; developing good adherence strategies for patients;
enhancing the public health content of pharmacy curricula; enhancing the effectiveness of the communication techniques of students and pharmacists; promoting interdisciplinary initiatives in pharmacy education and practice; supporting efforts aimed at preventing the development of antimicrobial resistance and the spread of infections; promoting patients’ self-management capacities; strengthening patients’ education on safe medication disposal methods; enhancing the management of polypharmacy and long-term conditions; managing legitimate medication needs of the public to prevent the accidental use of banned substances; remunerating pharmacists directly for providing public health services; innovating SC activities by pharmacists; and advancing the pharmacy practice experience of students in public health.

Furthermore, this review has identified other papers that have investigated community pharmacy-based services for alcohol misuse,[71] community pharmacy travel medicine services,[72] and the general public’s and health providers’ perspectives on public health utilisation of community pharmacy.[74] In terms of the limitations of the identified studies, there were instances where the studies were not piloted,[14,30,34,53,62,67,68,70,71,74] where ethical considerations[27,30,67] and consent approval[24,27,30,31,41,58,62,67,70] were not discussed, as well as instances where the sample size was either not stated[68] or the response rate was low.[24,27,73,74] In some of the papers, the outcome measures,[14,15,27,44,45,58,72,74] recommendations for further studies,[14,30,34,53,67,73] and limitations of the studies[13,45,67,68] were not discussed. These factors may therefore limit the generalisability of our findings.

While each of the identified papers have contributed individually to the understanding of the strategies needed to enhance the public health role of community pharmacists, the main gap in the UK evidence base lies in the fact that none of the identified papers focused specifically on identifying or investigating strategies that can enhance the public health role of community pharmacists. There was also a significant gap in the quality of evidence in the papers reviewed – only one literature reviewed study was identified.[16] On SC, for example, there is a gap in the UK evidence base, particularly in the willingness of retail pharmacies to stop the sale of tobacco products. Moreover, on effective communication, it was noted that little attempt was made by healthcare professionals to assess patient understanding.[11] Moreover, the fact that most of the identified studies originated from overseas, with findings that often could not be generalised to the UK due to differences in health systems, practices and laws, to some extent justifies the need for a study that uses mixed methods to develop an understanding of the strategies required for enhancing the public health role of community pharmacists in the UK.

Within the UK’s NHS, there has been a steady transfer of care from specialist hospital doctors to primary care doctors (general practitioners),[141] mainly to take healthcare delivery nearer to patients as well as to contain and reduce the cost of treatment. However, this has increased the workload of GPs, some of which are within the domain of public health practice (e.g. health education, immunisation, medicines use/clinical reviews, etc.). While it might seem logical that GPs should also transfer some of their minor clinical and public health roles to community pharmacists so as to enable them to focus on more complicated clinical and public health cases, this is not always an easy transition. The reason being that while it is a lot easier for GPs to take on some of the specialist doctors’ roles due to the uniformity of undergraduate training, this is not the case with community pharmacists whose undergraduate training has in many countries (including the UK) been developed traditionally as a science rather than a clinical programme. There is therefore an urgent need to broaden and enhance both the public health (including the clinical pharmacy) training of pharmacists.[69] At the same time, it might seem reasonable that community pharmacists should also be willing to transfer some aspects of their dispensing role to well-trained and competent dispensers and technicians. Furthermore, there is also a need to address some of the identified barriers such as the community pharmacy environment, the perceptions of both the general public and other health providers of pharmacists’ competencies, privacy and confidentiality in pharmacies, high dispensing workload, and inadequate financial support.[9,58]

Other challenges faced by community pharmacists in their aspiration to provide public health services relates to the structure of community pharmacies and the lack of professional autonomy[63] and a well-defined career structure and progression in community pharmacy, the unacceptable work–life balance,[82] the unavailability of individually contracted community pharmacists,[57] and the declining ownership of community pharmacies by independent pharmacists.[56,58] Hence, community pharmacists’ role in public health is often shaped by the commercial interests of the organisations they work for, rather than by the undergraduate training or the individual aspiration of pharmacists to advance their public health role.

Not surprisingly, this underutilisation of pharmacists has often been described as a huge waste of resources as well as of the intellectual skill of pharmacists,[57] particularly at a time when the other health sectors are barely coping with demands from the general public. To address some of these challenges, there is now a need for the UK pharmacists’ profession to consider a recent proposal to separate the dispensing role of pharmacists from the pharmacy/public health services role,[83] as well as to contract public health services to groups of pharmacists or individual pharmacist practitioners who may not have their own community pharmacies.[57]

Conclusion

There are numerous opportunities in public health for community pharmacists.[11,10] However, it has been noted that the UK community pharmacy public health practice is still operating at a basic level.[6,7,9] While the US pharmacy profession has evolved from product-oriented to patient-centred care, with pharmacists contributing to micro-level public health activities, there remains an unmet need for pharmacists in macro-level public health functions.[12] To achieve this desired objective, both in the UK and globally, there is a need to enhance, among other things, both the undergraduate and the post-graduate public health (including clinical pharmacy) training and skills of pharmacists and the career structure of community pharmacists, and to enable the development of a mixed market in community pharmacy practice by contracting
public health services directly to individual pharmacists. In addition, pharmacists should be encouraged to use newer technologies, including the social media, to enhance community pharmacy public health practice.

Declarations

Conflicts of interest
The Author(s) declare(s) that they have no conflicts of interest to disclose.

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Authors’ contributions
COA, designed study, analysed data and drafted paper. JO, is the academic adviser for COA, and contributed at all stages of the research project and publication. All Authors state that they had complete access to the study data that support the publication.

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