Original Article

The Role of Pharmacists in Cardiovascular Disease Prevention: Qualitative Studies from the United Kingdom and Greece

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ABSTRACT

Objective: In the United Kingdom (UK), cardiovascular disease (CVD) is the second main cause of death (27.4%) and the leading cause of death in Greece, accounting for 48% incidences. Pharmacists, the most accessible health-care professionals, can have a key role in all stages of CVD prevention. This study aimed to explore the current and future role of pharmacists in CVD prevention, focusing on two European countries, the United Kingdom and Greece. **Methods:** Semi-structured interviews were conducted with 40 community pharmacists; 20 in the UK and 20 in Greece. All interviews were audio-recorded, transcribed, and analyzed thematically. **Findings:** Five main themes were identified: current pharmacists' role, future pharmacists' role, communication, resources and tools, and knowledge. Whereas pharmacists in the UK use a patient-centered approach, Greek pharmacists use a paternalistic approach.Nevertheless, the majority found it difficult to initiate a consultation. Both the UK and Greek pharmacists primarily focus on secondary CVD prevention, while dispensing prescribed medications, which is their main current role. Greek pharmacists recognized a potential role in primary prevention and early screening of CVD through the initiation of CVD prevention services with a weight management program being proposed. Barriers identified for a role in CVD prevention included: high workload in Greece and reimbursement issues and interprofessional relations in the UK. **Conclusion:** Pharmacists in both countries perceive having a potential role in CVD prevention based on their accessibility and customer relations. The challenges include a closer working relationship with other clinicians, communication/consultation skills training, and developing a sustainable funding model for the service.

KEYWORDS: *Cardiovascular disease, clinical pharmacy services, primary prevention, public health*

INTRODUCTION

Cardiovascular disease (CVD) caused 29.6% (15 616.1 million deaths) of deaths globally in 2010, as stated by the Global Burden of Disease.[1] The World Health Organization (WHO) estimated that CVD would be the number one cause of morbidity, leading to disabilities, and mortality by 2020.[2]

In the United Kingdom (UK), CVD was the second cause of mortality in 2015, responsible for 27.4% of all deaths;[3] and in Greece, it caused 48% of all deaths in 2012.[4] It is, thus, imperative that reducing cardiovascular risk factors should become a priority for healthcare systems. According to the INTERHEART study, 90% of all acute myocardial infarctions (heart attacks) can be attributed to modifiable risk factors: smoking, dyslipidemia, hypertension, diabetes, obesity, unhealthy dietary habits, physical inactivity, alcohol consumption, and psychosocial factors.[5]

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Since pharmacies are one of the most frequently visited and the first port of call for the general public, they are in an ideal position to prevent CVD. Currently, CVD prevention consists of two stages: primary and secondary. According to the WHO, primary prevention of CVD is associated with delaying the onset of CVD. In this stage, members of the public either have modifiable risk factors as mentioned above or not and have not had an established CVD episode. Secondary prevention is defined as the stage in which patients already have an established CVD episode (e.g., myocardial infarction and stroke). These patients are at great risk of developing a recurrent CVD episode.[6] Although this is the well-established and recognized model of CVD prevention, in our opinion, it combines patients with risk factors such as smoking or obesity under the same umbrella with those who have risk conditions, for example, hypertension. We believe that modifiable CVD risk factors need to be divided into CVD risk factors and CVD risk conditions. For this purpose, the former constitutes obesity, smoking, lack of physical activity, and alcohol consumption, whereas CVD risk conditions are hypertension, diabetes, and dyslipidemia. We, therefore, propose three levels of prevention; primary, secondary, and tertiary [Figure 1].

In our proposed model, primary prevention constitutes improving awareness and early screening of the public for CVD risk conditions. Pharmacists can provide initial risk assessments for risk factors and offer interventions such as weight management and smoking cessation programs. Secondary prevention in this model addresses

diagnosed risk conditions, to prevent the emergence of a CVD.[7] At this stage, pharmacists can offer services to optimize medicines for patients and reinforce adherence such as Medicine Use Reviews (MURs)[8,9] while providing lifestyle advice and support to promote healthier living.[6] Finally, tertiary prevention is the link between prevention and treatment. At this stage, individuals have an established CVD episode, and thus, they run the highest risk of a recurrent one. During this stage, pharmacists can offer services similar to those offered in secondary prevention, in addition to lifestyle advice, to minimize the risk of having a second episode or suffering a premature death.

In the UK, pharmacists offer three tiers of services based on the community pharmacy conceptual framework.[10] These include: the essential services (services that all pharmacists should offer) mainly related to supplying medications, the advanced services (services that pharmacists can offer after accreditation) mainly focused on medicines optimization such as MUR and the New Medicine Service (NMS)[8,9] and the enhanced services. These services are offered based on the needs of the local UK population and are usually a mixture of services related to public health and medicine optimization. They include weight management, smoking cessation, and health checks.[11]

In Greece, the pharmacists' role is that of dispensing prescription-only medicinal products and selling of over-the-counter medications. Contrary to the UK, Greek legislation forbids chain or supermarket pharmacies
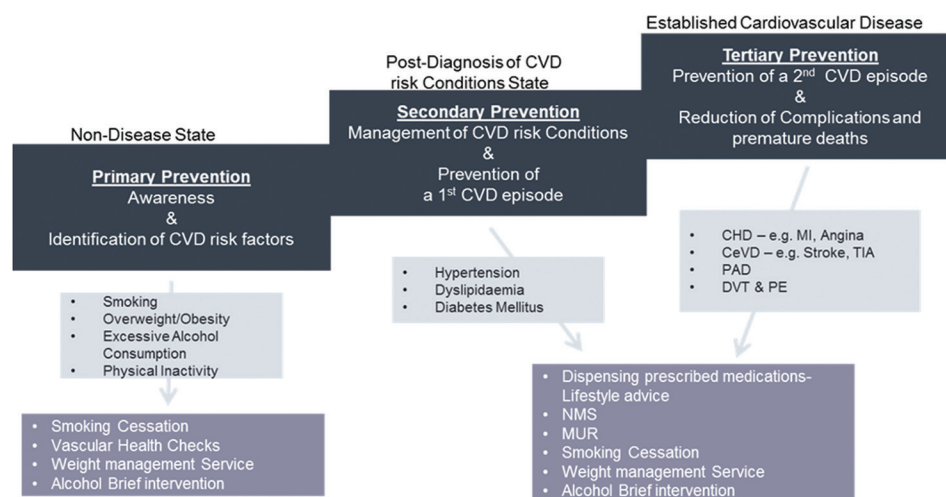

Figure 1: Proposed Cardiovascular Disease Prevention Journey and the role of the pharmacist. This proposed CVD prevention Journey emphasized the role of pharmacists in each stage of CVD prevention. Pharmacists can play an active role in early screening (nondisease state) by offering public health services. Additionally, in the secondary (post diagnosis of CVD risk conditions) and tertiary prevention (established CVD) stages pharmacists can offer similar services apart from dispensing the prescribed medications and counseling which are including NMS, MUR as well as all the services they offer in the primary prevention. CHD = Coronary heart disease, MI = Myocardial infarction, DVD = Cerebrovascular disease, TIA = Transient ischemic attack, PAD = Peripheral artery disease, DVT = Deep vein thrombosis, PE = Pulmonary embolism, NMS = New medicine service, MUR = Medicines use review

and thus all medicinal products are dispensed solely by private independent pharmacies. In Greece, people visit a specialist directly, whereas, in the UK, they first visit a general practitioner (GP), who can refer them to a specialist if needed.[12,13]

Comparing pharmacy services across two countries (UK and Greece) can give insight into how clinical pharmacy services in Greece may be further developed using the UK as a reference. Thus, this preliminary study was designed to examine the current and future role of pharmacists in both countries with a focus on CVD prevention. More specifically, it aimed to investigate the Greek pharmacists' perceptions about their role in CVD prevention and their willingness to offer services in that regard using the UK pharmacists as a reference due to their experience and the structured pharmacy services that they offer. Greece was chosen due to convenience based on the author's local knowledge of the country and considering the financial crisis that it is undergoing. Thus, it was felt that a wider role of Greek pharmacists in CVD prevention could help tackle the growing cost of CVD disease.

METHODS

The methodological approach of this study is reported based on the consolidated criteria for reporting qualitative research.[14]

Design

This study was based on an exploratory, descriptive qualitative research using one-on-one semi-structured interviews to examine the views of pharmacists on their current and future role in CVD prevention in the UK and Greece. This method is supported by the phenomenology,[15] a philosophical approach intended to gain a comprehensive explanation of the phenomena under exploration from the participants' point of view. Greece was a country of interest to explore pharmacists' role due to the author's local knowledge of the country, while the UK was chosen as a reference country since it has a structured approach for pharmacy services.

The study was conducted between September 2015 and January 2016. Before data collection, the interview schedule and all relevant documentation were ethically approved on July 2015 by the Science, Engineering, and Computing (SEC) Ethics Committee (ID: 1415/032) of a UK institution.

Study setting and sample

The study was conducted in both the UK and Greece. In both countries, potential participating pharmacists were contacted in person by the first author (AP) to inform them about the study and to encourage their participation.

In addition, a participant's information sheet (PIS) was given for further details. If a pharmacist expressed an interest in taking part in the study, they were contacted over the phone to schedule an appointment for the interview.

For the interviews with UK pharmacists, convenience, and snowball sampling were adopted. In the UK a list of pharmacies in London and Surrey was requested through the Pharmaceutical Services Negotiating Committee. Most interviewees were from London, but some were also from Surrey. Multiple chains and supermarket pharmacies were excluded from the list, as in Greece; there are only independent community pharmacies. Random sampling from the pharmacy contact list was not used in the UK to accommodate proximity to the research site.

In Greece, interviews were conducted in the three largest cities: Athens, Thessaloniki, and Patras. A list of all available community pharmacies was requested from the Pharmaceutical Association of each city. The pharmacies were randomly selected from the list provided. The first pharmacy was randomly selected and the remaining ones using "table of random numbers."[16] More specifically, from the table of random numbers, the 67th pharmacy was selected as the first, then the "plus 5" rule was used. Hence, the next pharmacy selected was the 72nd. If this pharmacy did not wish to participate, the next one, i.e., 77th was approached. Random sampling in Greece was used to ensure diverse views and perceptions of pharmacists were collected to increase the validity of the collected data.

The sample size was not predetermined because with qualitative research; there is no conventional guideline to determine the precise sample size for interviews. However, interviews were conducted until data saturation was achieved.

Data collection

Prior to data collection, the interview schedule and all relevant documentation were ethically approved on July 2015 by the SEC Ethics Committee (ID: 1415/032) in a UK institution.

The interview schedule was designed according to the literature search findings[17-19] and comprised of 28 open-ended questions divided into three sections, with helpful prompts that could be used if needed. The interview schedule aimed to explore the role of pharmacists in primary and secondary CVD prevention as per the CVD prevention pathway proposed. The first section included questions about the primary prevention of CVD and the role of pharmacists during the initial risk assessment of CVD risk factors. The second section

was related to secondary prevention and explored pharmacists' role in the management of diagnosed CVD risk conditions. The third section consisted of questions exploring pharmacists' general role in CVD prevention. Prior to the interview, the proposed CVD model was explained in detail to the pharmacists. Before the actual interviews took place, the interview schedule was piloted and validated by four pharmacists with no major changes.

Semi-structured interviews were undertaken in person (face to face) by the first author, who is a female, registered pharmacist, and a Doctor of Philosophy (PhD) holder. The first author received training in conducting qualitative research during the academic year 2014–2015 in a UK institution. The interviews took place in each of the participating pharmacies' consultation room in the UK and in private areas within the Greek pharmacies to ensure confidentiality and avoid any distraction. None of the researchers had any kind of relation with the interviewees before the study was conducted. Before the interviews, the first author explained the reasons for doing this study. Written informed consent was also taken before each interview.

In total, 103 pharmacists were contacted to participate in the study. Finally, 40 interviewees were recruited and interviewed, 20 in each country (Greece: 12 females, 8 males and UK: 6 females, 14 males). Reasons for non-participation included lack of time and an insufficient number of pharmacy personnel. The interviews continued until thematic saturation was reached, and no additional data could be found.[20] More specifically, after the thematic saturation, ten more interviews were conducted in the UK and 8 in Greece. The duration of each interview varied between 20 and 30 min, and all interviews were digitally recorded after gaining consent from the participants, and hand-written notes were taken during the interviews. Repeat interviews were not conducted with any of the participating pharmacists. Before analysis, the first author transcribed all the interviews verbatim and translated (Greek interviews only) and anonymized them. The first author translated the Greek interviews since Greek is her mother tongue. After completion of all translations, an authorized translator in Patras approved the Greek to English translations.

Data analysis

The interview transcripts were analyzed using thematic analysis.[21] The analysis was performed inductively and deductively, and themes were extrapolated from the data obtained. Transcripts were not returned to participants for comments. The first author read them independently, and listened to the recorded data, reading and re-reading

a small number of interview transcripts and reviewing them manually, making notations directly onto the transcripts. Open coding was conducted, and it was performed line-by-line. The patterns within the responses about pharmacists' current role in CVD prevention, the barriers that they perceived to affect their role, as well as how pharmacists communicate with their patients were examined. The afore-mentioned enabled the identification of the primary emergent codes. The coding process was further developed after various rounds of reading the transcripts holistically, and discussion between all researchers, which resulted in the grouping of the initial codes. The broad categories identified were: pharmacists' role in CVD prevention in their everyday practice and the enablers and barriers. The remaining transcripts were read and re-read to ensure that all data had been coded. The coded transcripts were then checked and agreed by the other coauthors. Each coded passage was grouped by thematic similarity by the first author. This was followed by a discussion with the other two researchers and led to the development of common major themes. The first author used NVivo 11 software to facilitate documentation of the themes that emerged. All themes were given an equal weighting within the thematic analysis. Agreement about all the emerging themes and subthemes was verified by all authors to ensure rigor, validity, and trustworthiness of the themes presented and to ensure that there was no bias in data coding. The third author has a PhD qualification, and the second one has a Doctorate of Pharmacy qualification. The co-authors are both academics (the second author is a senior lecturer, and the third one is a professor [full]) who are senior researchers in conducting qualitative research. The results are presented in the form of themes and subthemes. The themes are described using illustrative quotes from each interviewee, who was then assigned a consecutive code (e.g., for Great Britain: GB001, etc., and for Greece: GR001, etc.).

RESULTS

Personal and practice demographics of the interviewees are described in Table 1.

Five themes were identified from both the UK and Greek interviews: The first theme is the "Current Pharmacists' Role" with the subthemes being; current pharmacy services and role enablers. The second theme that emerged is the "Future Pharmacists' Role," including Greek pharmacists' service provision preference as a subtheme. The third theme is "Communication" - with the two subthemes being interprofessional relationship and pharmacists' approach. The fourth one is "Resources and Tools," and the fifth theme is "Knowledge."

A summary table [Table 2] with the main findings identified from both countries is presented.

Current pharmacists' role

Current pharmacy services

It was determined from the interviews that Greek pharmacists offered clinical services despite the lack of remunerated structured commissioning of such services. On the other hand, the UK pharmacists commented on the various services they offer as part of their role in primary CVD prevention. NHS health checks and

Table 1: Personal and practice demographic information the UK and Greek interviewees (*n*=40)

	Frequency, *n* (%)	
	Greece	UK
Gender distribution		
Sex		
Males	8 (40)	14 (70)
Females	12 (60)	6 (30)
Age distribution		
Age range (years)		
25-34	6 (30)	11 (55)
35-44	8 (40)	1 (5)
45-54	2 (10)	5 (25)
55-69	4 (20)	3 (15)
Years of experience		
Year range		
≤5	6 (30)	8 (40)
6-10	3 (15)	3 (15)
10-15	3 (15)	2 (10)
16-20	1 (5)	7 (35)
≥20	7 (35)	8 (40)
Employment status		
Type		
Pharmacists-owners	20 (100)	6 (30)
Pharmacists-employees	-	14 (70)
Location		
Patras	12 (60)	-
Thessaloniki	4 (20)	-
Athens	4 (20)	-
London	-	15 (75)
Surrey	-	5 (25)

smoking cessation were some of the most common services that they offer [Table 3, 3.1].

The UK and Greek pharmacists indicated that they have numerous clients who seek advice on obesity, smoking, or exercise. Weight management was the primary public health service desired by the public in Greece, whereas smoking cessation had more demand in the UK. However, in both countries, pharmacists reported that there were seasonal variations in the demand for these services. For example, in the UK, pharmacists agreed that New Year's resolutions acted as a means of increased service use. However, Greek pharmacists stated that the number of people seeking weight management advice increased before the summer season [Table 3, 3.2].

Interestingly, few people seek advice about alcohol consumption; in fact, it was deemed as a taboo topic of discussion as highlighted by Greek pharmacists [Table 3, 3.3].

A common finding between the UK and Greece was that pharmacists usually became involved after a CVD risk condition was diagnosed (secondary prevention). As a part of secondary CVD prevention, UK pharmacists offer advice and support by dispensing prescribed medications (essential services) as well as advanced services such as NMS and MUR [Table 3, 3.4].

Similarly, to the UK pharmacists, Greek pharmacists mostly intervened in secondary prevention, as it was a part of their dispensing role. Mostly, Greek pharmacists advise patients to adhere to the treatment their doctor has prescribed and to follow the instructions that the doctor advised. Increasing medication adherence is recognized by Greek pharmacists as one of the most important parts of their role [Table 3, 3.5].

Role enablers

Most of the UK pharmacists reported that their accessibility and their relationship with people were the most important enablers of their CVD prevention role. Pharmacists' relationship with the public is based on an honest and noncritical approach. Pharmacists also

Table 2: Main findings from the UK and Greece

Main comparisons	Greece	UK
Communication	Pharmacists manly use a paternalist approach	Pharmacists use a patient-centered approach
	Pharmacists indicated that they have a good relationship with other health-care professionals especially doctors	Pharmacists stated that there is no mutual relationship and collaboration with other health-care professionals especially with general practitioners
Current role in CVD prevention	Pharmacists mainly act in secondary CVD prevention (dispensing medications)	
Future role in CVD prevention	Pharmacists need a structured approach to intervene in primary prevention	Pharmacists expressed their concerns about remuneration issues faced that disables them to have a more active role in primary CVD prevention
	Pharmacists need a clear policy for their role in primary CVD prevention	

CVD=Cardiovascular disease

Table 3: Annotated quotes from both UK and GR Interviews

Quote number

3.1 *"We do NHS health checks, weight, BMI, smoking status, activity status, alcohol, cholesterol, blood pressure, and family history. We could do without an NHS health check if people are not eligible for it, so privately. Also, we provide smoking cessation services"* GB0011

3.2 *"For obesity maybe 2 or 3 (people) a month, and for smoking maybe 2 or 3 a week"* GB0017

"I suppose around Christmas; people tend to drink or smoke a lot more, so that is certainly one time of the year. Moreover, then they want to quit or reduce alcohol with their New Year's resolutions," GB0019

3.3 *"[...] regarding alcohol, it is a bit of a taboo topic, not so many (clients) come [to seek advice] [...]"* GR002

3.4 *"So we have got the New Medicine Service and Medicines Use Reviews, we always counsel our patients when dispensing. (giving) lifestyle advice. and we do blood pressure testing if people want us to."* GB0011

3.5 *"We look at their records in the pharmacy's system, so we make sure that they are taking their medicine. Did they come last month to take it? Why is there leftover medicine? We draw their attention to the dosage and methods of administration, mainly. We always try to pass on the message (of the importance of medication adherence)."* GR0015

3.6 *"Probably our strength is in screening people, as we see too many people every day more often than the doctors. So our strength is that we have much interaction."* GB0010

3.7 *"The fact that the point is not really to make money, but to save a human is satisfying. When they come and thank you or tell you 'well done, you gave me advice that the doctor I went to confirmed,' and to see them having escaped the risk and leading a normal life."* GR004

3.8 *[...] I would like to improve my role by assessing the impact of the service that we deliver."* GB0011

3.9 *"I think we are quite a good port of call to provide information and advice for people wanting it, so I think we are good at educating people, which is the key. We can be there if the things that they want us to promote. we are the first line to do this. We could play a big role in the future if there is a structured approach to it."* GB002

"We would like to be at the front, but we need clear guidelines from NHS on what they want us to do. Let us have the training, let us have the funding, let's have the support, and we can carry it out. But it has to be structured, and obviously you need the relationship with the doctors." GB0010

3.10 *"For me, my vision is of the pharmacy as a [healthcare] unit. I would like pharmacies to become a recognized primary healthcare unit so that they can inform the public and achieve prevention."* GR002

3.11 *"There is no vision. You can implement new programs, more services. We do want to have a more active role, but the most important thing is money [...] Pharmacists do not have power. The only power that we have is to sell medicines, give out general advice and, you know, fill prescriptions. In general, there is no power. Everything is up to the doctor, so there is nothing that we could do. I mean, we can give some general advice, but in order to change it is very difficult."* GB001

"Maybe (the general public has) not enough awareness (about the pharmacy profession). People in the community are unaware of how much we do and how much we can do." GB0013

3.12 *"I believe that weight is a big factor. When an overweight person loses weight, in my opinion, and according to my experience, 80% of his or her diseases are corrected. Weight is crucial."* GR001

3.13 *"[...] No, there is no collaboration with other healthcare professionals, as they want to deliver services such as NHS health checks, so there is competition."* GB001

3.14 *"This (relationship) is very positive. I have personal cooperation with my patients' physicians, those that I monitor here. When I see something that I do not like, I'll call the doctor and tell him what is going on with this person, if I do pick up on something. Moreover, I have saved many patients thanks to this attitude. This is key to having a pharmacy."* GR001

"In general, I have good relations with doctors. I believe that I have to give out what they advise, even in prescriptions, because, in the end, they are more specialized. In this context, I have a good working relationship (on the surface). However, in reality, all [social/ class differences] lead to being berated." GR009

3.15 *"I think collaborating with other healthcare professionals is the way forward. Both can share their knowledge, hopefully giving patients better care planning that way [...]"* GB003

3.16 *"Well, I mean that is a tough topic. Unless they initiate a conversation with us, it is very difficult. I cannot just say: 'Excuse me, Sir/ Madam, you seem overweight. Have you tried to lose weight?' Unless there is the reason for them to engage or respond"* GB001

"As part of our everyday work, we offer certain services. For instance, if someone came in and I smelled the smoke, or if I found them smoking outside the pharmacy, obviously I would try to get them to quit smoking so that they could lower the risk of developing CVD." GB0010

3.17 *"I feel comfortable enough and, as the years go by in this job, these feelings of comfort and confidence grow."* GR007

3.18 *"I used to be a smoker and have now quit; I know how to advise on what to use to help them psychologically and practically, i.e., medicine that can help them quit."* GR004

3.19 *"Many do not want to listen. They do not accept the problem. Perhaps the only problem is the lack of the patients' cooperation, i.e., that they do not want to listen, do not want to accept advice."* GR005

3.20 *"Basically, not only do I advise them, but I push them to do it. I push them for their own good, because people are generally indifferent or do not evaluate the symptoms they have."* GR001

Contd...

Table 3:Contd...
Quote number

3.21 *"Time is basically the main limitation. There is no time to go out and counsel every patient."* GB0013

   "If there is a queue waiting, you cannot spend too much time with one particular patient." GR002

3.22 *"Money decides the frequency! Commissioning! Time! Time is money, and money is time! I could sell, or I could do other things to make money, but during that time, I have to take 5-10 minutes of my time to do the BP measurement."* GB001

   "[...] for diabetes, yes, I can conduct measurements [...] If (the patient) asks me for that and free, of course. [...]" GR001

3.23 *"We have weight scales, a cholesterol check machine, a blood pressure machine, (we measure) height so we can calculate the BMI... We have the software program, so we put in all the data, and it calculates the CVD risk. It is based in QRISK."* GB0012

   "We do not have anything (in terms of equipment)" GB002

3.24 *"We do not use any of the CVD risk calculators"* GB003

3.25 *"[...] having patient education is primary prevention. Patients should understand what they have to eat, why they did not exercise. When people know that, they will do it. If they do not, then they will not do it, so basically primary prevention is education."* GB004

   "For me, it means educating potential patients on how to avoid becoming actual patients and following a healthier way of life." GR003

   "[I am attending] CPPE events, training for new services, and obviously reading journals such as C + D (Chemist + Druggist), PJ and the pharmaceutical website PSNC (Pharmaceutical Services Negotiating Committee). I'm also reading NICE guidelines. Usually we have these printed. Also, I'm attending local practice forum training." GB0018

   "I mostly consult scientific journals and information of scientific interest via the internet, and the books I have kept from my days as a student." GR0012

   "Unfortunately, I have no real training, my source of information is the little knowledge I acquired at university, my experience, and whatever I learn from the media." GR0010

   "The only training that we received is how to use the blood pressure/blood glucose and the lipid machine. They are not doing any refreshing courses. The reason is that there is no commissioning." GB001

NHS=National Health Service, CVD=Cardiovascular disease, CPPE=Centre for Pharmacy Postgraduate Education, PSNC=Pharmaceutical Services Negotiating Committee

mentioned that their strength lies in their ability to screen people, thus displaying their potential role in primary CVD prevention. In addition, a very important strength for their role is that they are the first port of call and people can drop by a pharmacy whenever they want without booking an appointment beforehand [Table 3, 3.6].

Similarly, most Greek pharmacists recognized that their contact with customers/patients and the positive relationship that they have with them enables them to play an active role in preventing CVD. However, they highlighted that the gratitude and the satisfaction from providing health-care services and saving a human life far supersede any monetary payment [Table 3, 3.7].

The UK pharmacists mentioned that there is a need for the services they offer such as smoking cessation, NHS health checks to be evaluated, as this could help enhance their role in CVD prevention [Table 3, 3.8].

Future pharmacists' role

With regards to the vision that pharmacists share for their future role in CVD prevention, the UK and Greek pharmacists expressed their desire for a more proactive role with more responsibilities. Specifically, the UK pharmacists wanted to be at the forefront of medical prevention, since they believe that, as HCPs, they can offer a great deal to their patients. To achieve this, UK pharmacists mainly expressed the need for structured

guidelines from the NHS, training, funding, and better relations with doctors [Table 3, 3.9].

Greek pharmacists expressed the desire for their pharmacies to be seen as primary health-care prevention units, rather than as shops where they can offer a structured recognized service for CVD prevention on top of their current role, which is mainly focused on dispensing medications [Table 3, 3.10].

However, some UK pharmacists mentioned that they had no future expectations for their role in CVD prevention, as they felt that they first need more funds to properly advise and help their clients. Moreover, some of them felt that they do not have much power or opportunities to fulfill their role, causing a lack of motivation. Some pharmacists even associated the public's lack of awareness about their profession and what they can offer with their lack of motivation [Table 3, 3.11].

Greek pharmacists' service provision preference

Greek pharmacists emphasize organizing and operating a structured preventive CVD service. This was seen as an opportunity to further enhance their role, increase their clinical input, and improve the general public's health outcomes. Most of them felt that weight management should be the first service to offer, as abnormal weight is one of the main causes of chronic health conditions such as diabetes and hypertension leading to a

CVD episode. Interestingly, the second most chosen service to be initiated was related to hypertension management [Table 3, 3.12].

Communication

Communication was one of the main themes identified in the interviews. The UK and Greek pharmacists shared their views about communication with other health-care professionals (HCPs), but they also commented on how they communicate with their clients/patients and the relationship they share with them.

Interprofessional relationship

Even though pharmacists recognized the potential benefit of interprofessional relationships, most of the UK pharmacists identified that there is no mutual relationship with very little collaboration with other HCPs in particular with GPs due to competition for service delivery [Table 3, 3.13]. Conversely, most Greek pharmacists stated that they have a good relationship with other HCPs, mainly with doctors, and cooperate with them regularly with only a minority who experience the traditional hierarchy [Table 3, 3.14].

Pharmacists believed that if both sides try to improve their mutual communication, this will benefit their everyday clinical practice [Table 3, 3.15].

Pharmacists' approach

The UK pharmacists identified a difficulty in approaching people who have CVD risk factors, such as obese clients, smokers, binge drinkers, or clients who are inactive to initiate a conversation regarding primary CVD prevention. In general, pharmacists either wait for their clients/patients to initiate a conversation with them when seeking advice, or they approach people through services, such as the smoking cessation service [Table 3, 3.16].

The Greek pharmacists seemed to be more confident in approaching people. They admitted that having established relationships with patients facilitates sensitive conversations surrounding unhealthy lifestyles [Table 3, 3.17]. Moreover, the pharmacist's own experience with behavioral change (smoking cessation and weight loss) was deemed helpful in initiating those discussions [Table 3, 3.18]. Nevertheless, few admitted that some of their communications with patients were unsuccessful due to the lack of cooperation or denial of the problem [Table 3, 3.19].

In general, it was interesting to note that the approach differed in both countries. Whereas the UK pharmacists mostly adopted a patient-centered style of communication (meaning that individuals actively participate and make decisions related to their health),

a number of Greek pharmacists tended to approach individuals in a more paternalistic way suggesting that Greek pharmacists "tell people what to do" to better help them to change their lifestyle and improve their health. In paternalism, the health-care professional knows better than the patient, assigning the patient a passive role [Table 3, 3.20].

Pharmacists explained that most communication is face to face and verbal occasionally supported by printed material to overcome barriers such as language and hearing difficulties. However, the Greek pharmacists were happy to individualize their approach further based on the patient preference, which sometimes included virtual consultations over the phone.

Resources and tools

Time was a concern for both the UK and Greek pharmacists, leading to a limited role in CVD prevention. On the one hand, the Greek pharmacists mentioned their workload as an issue, as they felt that the more patients dropped by the pharmacy, the less time they could devote to each one of them [Table 3, 3.21].

The lack of commissioning was a barrier for the UK pharmacists. A possible reason why the UK pharmacists emphasized the remuneration issues is that services can also be offered by GPs and nurses. Thus, there is fierce competition in providing the services, as they share the same budget. This was in contrast to Greek pharmacists, who for example were happy to offer blood glucose measurements, free even though they are costly [Table 3, 3.22].

In terms of pharmacy equipment, the UK and Greek pharmacists reported that they generally have the relevant tools for measuring weight, blood pressure, blood glucose, and cholesterol at their disposal and that they use them frequently. Surprisingly, there were few UK pharmacists who did not have any equipment in their pharmacies at all, such as weighing scales [Table 3, 3.23].

It was interesting to note that whereas some UK pharmacists use CVD risk calculators, others do not calculate people's body mass index and CVD risk score. In Greece, pharmacists indicated that they were not aware of any CVD calculators and did not use any of them [Table 3, 3.24].

Knowledge

Knowledge was a broad theme that was identified during the interviews. In terms of understanding primary prevention for CVD, most UK, and Greek pharmacists were aware of different CVD risk factors, but some only had a general overview of the problem. They classified

primary prevention as an educational intervention to prevent CVD. In addition, it was identified that most pharmacists were not aware of all potential CVD risk factors. For example, only a few of them mentioned stress as a risk factor [Table 3, 3.25].

The UK pharmacists reported that they maintain up-to-date knowledge in CVD prevention and management through scientific journals such as the Pharmaceutical Journal or Clinical Pharmacist, as well as through the Centre for Pharmacy Postgraduate Education and the Internet. They also read updated guidelines and complete their annual Continuous Professional Development (CPD) entries. Similarly, Greek pharmacists stay up-to-date as the UK pharmacists by attending seminars and conferences, reading scientific journal articles relating to the pharmacy from recognized online resources [Table 3, 3.25].

Although the UK and Greek pharmacists stated that they keep their knowledge up-to-date, they reported that they had not received any or adequate training about CVD prevention. In both countries, most of the pharmacists said that the only training they had was whatever they had gained from university studies and the experience they gathered during their years of practice. However, some UK pharmacists mentioned having received training, as they were already offering CVD risk screening services. However, they quoted that lack of commissioning leads to lack of refresher courses being organized [Table 3, 3.25].

DISCUSSION

To the current knowledge, this is the first study that interphase the role of community pharmacists in CVD prevention in two European countries: the UK and Greece. Moreover, this preliminary study is unique as little is known about the views, role, and responsibilities of Greek pharmacists.

This preliminary study explored how pharmacists can play a significant role in CVD prevention based on the proposed CVD prevention pathway. Even though pharmacists saw a potential role in primary CVD prevention and early screening, the findings revealed that pharmacists in both countries were mainly involved in secondary prevention after CVD risk conditions are diagnosed as per the proposed model for both stages of prevention. A systematic review by Eades *et al.*[22] explored the views and attitudes of both pharmacists and the public about pharmacy-led public health services. The review revealed that the pharmacy staff considers their public health role secondary compared to the medicine-related roles that they have. Therefore, this finding could explain why pharmacists focus more

on secondary CVD prevention. Despite the fact that pharmacists in both countries were more involved in secondary prevention, Greek pharmacists were keen to establish their pharmacies as primary health-care units offering public health services related to CVD primary prevention, with the main focus being on weight management. Greek pharmacists seem to know the needs of their community as the prevalence of obesity in Greece is high with 17% of the population aged 15 years and over being obese and 39.2% being overweight.[23]

Pharmacists' views regarding their interprofessional relationship with other HCPs, more specifically with doctors, were also identified. In the UK, most pharmacists agreed that a good and positive relationship with doctors does not exist. This finding, in particular, could be explained as UK pharmacists and GPs share the same financial budget for offering services, which suggests that there is competition between these professions. This finding corresponds to that of Gidman and Cowley[24] study that described that the pharmacist has a supportive role compared to doctors instead of an equal role. In addition, Rapport *et al.*'s[25] study stated that the majority of pharmacists feel isolated from other HCPs. However, most Greek pharmacists mentioned that their relationship with doctors is good, as they both work for the benefit of the public.

Another important outcome was that the UK and Greek pharmacists approach members of the public differently to initiate a conversation with them about primary CVD prevention. The UK pharmacists use a patient-centered approach, which allows their clients/patients to decide about their well-being themselves. They communicate through services or offer advice when a customer/patient seeks it. On the other hand, Greek pharmacists use a paternalistic approach that forces clients/patients to make decisions towards their health.

Both the UK and Greek pharmacists expressed their lack of knowledge and confidence in communicating with people. Eades *et al.*[22] study confirmed the above finding, as their study found that pharmacists believed that they lacked sufficient knowledge to properly promote public health services. Rapport *et al.*[25] described that the public feels that pharmacists lack communication skills due to lack of training and confidence and that a gap exists between them and their clients in the understanding of the pharmacy profession. This was echoed by another study by Brown *et al.*[26] Therefore, to overcome the issues presented, continuous annual training should be organized by the pharmaceutical professional bodies in both countries and in Greece, CPD should be initiated. CPD is an established mechanism to enhance and keep pharmacists' knowledge up to date,[27] and the Greek

Department of health should consider including this as a validation process for pharmacy professionals.

Elvey *et al*.'s study[28] identified multiple pharmacists' identities/roles; the scientist, the social role, the medicine provider, and the businessman. In our study, the "businessman" identity was evident in the UK, as pharmacists tend not to offer a service if it is not commissioned. Therefore, based on pharmacists' responses, evaluation of services effectiveness and cost is essential to ensure their sustainability in the future. Greek pharmacists offered unstructured public health services free of charge. Furthermore, they expressed the willingness for the initiation of pharmacy-led public health services to minimize CVD risk. Pharmacists wanted their pharmacies to become primary care units that benefit patients and the public health system as a whole, thus allowing their clinical role to be further developed. This was echoed in a survey-based study conducted by Kostagiolas *et al*.[29] in Greece revealing that pharmacists perceived a significant contribution of their role to dealing with health-care prevention programs.

Greek pharmacists expressed that their workload and the increasing number of clients visiting the pharmacy can act as a barrier to their role in CVD prevention. In a related publication describing the Greek economic crisis and its impact on health, Kyriopoulos and Tsiantou[30] described that the increased unemployment rates had increased the pressure on primary care leading to delayed access to medical services. This, in turn, possibly explains the increased pharmacy workload due to easy access and free consultations. This presents an opportunity for Greek pharmacists to seek support from the Greek Pharmaceutical Association and Ministry of Health to recognize their expanded role and to formalize these efforts into structured services.

This preliminary study adds to the current literature, as this is the first to explore Greek pharmacists' perceptions about their clinical role in CVD prevention. This is also the first study trying to understand pharmacists' role in CVD prevention in two European countries. There is evidence from both countries that the positive relations with and accessibility to the public are the main enablers of a role in CVD prevention, which is also echoed by other international studies. However, for pharmacists to realize an effective role in CVD prevention, the following needs to be addressed; collaborative relationships with other HCPs, training, and a sustainable funding model. The results identified may not be regarded as being representative of the two countries' pharmacists as a whole, since recruited pharmacists were only practicing in independent pharmacies in London and Surrey in the UK, and in Greece's three largest cities, Athens, Thessaloniki, and Patras. Therefore, views expressed by pharmacists working in independent pharmacies may differ from views of those working in chain or supermarket pharmacies in the UK. Therefore, further research should be conducted with a larger sample size to identify further differences in relation to pharmacists' perceptions of CVD prevention based on gender, pharmacy ownership, and location of pharmacy (rural vs. urban). Regardless, the comparison presented of pharmacy services across two countries (UK and Greece) is giving insight into how clinical pharmacy services in Greece may be further developed using the UK as a reference. This could have health-care policy implications, as well as being useful for clinicians looking to implement these services. The feasibility of a weight management service to be offered in Greece should be explored.

AUTHORS' CONTRIBUTION

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Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Lozano R, Naghavi M, Foreman K, Lim S, Shibuya K, Aboyans V, *et al.* Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: A systematic analysis for the global burden of disease study 2010. Lancet 2012;380:2095-128.
2. Hobbs FD. Cardiovascular disease: Different strategies for primary and secondary prevention? Heart 2004;90:1217-23.
3. Townsend N, Bhatnagar P, Wilkins E, Wickramasinghe K, Rayner M. Cardiovascular Disease Statistics. London: British Heart Foundation; 2015.
4. World Health Organization. Greece: Noncommunicable Diseases (NCD) Country Profiles. Available from: http://www.who.int/nmh/countries/grc_en.pdf. [Last accessed on 2017 Jul 20].
5. Yusuf S, Hawken S, Ounpuu S, Dans T, Avezum A, Lanas F, *et al.* Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study):

Case-control study. Lancet 2004;364:937-52.

6. Mendis S, Puska P, Norrving B. Global Atlas on Cardiovascular Disease Prevention and Control. Geneva: World Health Organization; 2011. Available from: http://www.who.int/cardiovascular_diseases/publications/atlas_cvd/en/.[Last accessed on 2017 Jul 20].

7. JBS3 Board. Joint british societies' consensus recommendations for the prevention of cardiovascular disease (JBS3). Heart 2014;100 Suppl 2:ii1-67.

8. Pharmaceutical Services Negotiating Committee. New Medicine Service. Available from: http://psnc.org.uk/services-commissioning/advanced-services/nms/. [Last accessed on 2017 Jul 21].

9. Pharmaceutical Services Negotiating Committee. Medicines Use Review. Available from: http://psnc.org.uk/services-commissioning/advanced-services/murs/. [Last accessed on 2017 Jul 21].

10. Pharmaceutical Services Negotiating Committee. Community Pharmacy Contractual Framework 2018 PSNC. Available from: http://psnc.org.uk/contract-it/the-pharmacy-contract/. [Last accessed on 2018 Mar 12].

11. Robson J, Dostal I, Madurasinghe V, Sheikh A, Hull S, Boomla K, *et al.* The NHS health check programme: Implementation in East London 2009-2011. BMJ Open 2015;5:e007578.

12. Economou C. Greece: Health system review. Health Syst Transit 2010;12:1-177, xv-xvi.

13. Economou C. Barriers and Facilitating Factors in Access to Health Services in Greece. World Health Organisation; 2015. Available from: http://www.euro.who.int/__data/assets/pdf_file/0006/287997/Barriers-and-facilitating-factors-in-access-to-health-services-in-Greece-rev1.pdf?ua=1. [Last accessed on 2018 Mar 11].

14. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. Int J Qual Health Care 2007;19:349-57.

15. Schutz A. The Phenomenology of the Social World. Translated by, Walsh G, Lehnert F. Evanston, IL: North Western University Press; 1967.

16. Kendall MG, Babington Smith B. Randomness and random sampling numbers. J R Stat Soc 1938;101:147-66.

17. Maguire TA, McElnay JC, Drummond A. A randomized controlled trial of a smoking cessation intervention based in community pharmacies. Addiction 2001;96:325-31.

18. Sinclair HK, Bond CM, Lennox AS, Silcock J, Winfield AJ, Donnan PT. Training pharmacists and pharmacy assistants in the stage-of-change model of smoking cessation: A randomised controlled trial in Scotland. Tob Control 1998;7:253-61.

19. Fitzgerald N, Watson H, McCaig D, Stewart D. Developing and evaluating training for community pharmacists to deliver interventions on alcohol issues. Pharm World Sci 2009;31:149-53.

20. Francis JJ, Johnston M, Robertson C, Glidewell L, Entwistle V, Eccles MP, *et al.* What is an adequate sample size? Operationalising data saturation for theory-based interview studies. Psychol Health 2010;25:1229-45.

21. Fereday J, Muir-Cochrane E. Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. Int J Qual Methods 2006;5:80-92.

22. Eades CE, Ferguson JS, O'Carroll RE. Public health in community pharmacy: A systematic review of pharmacist and consumer views. BMC Public Health 2011;11:582.

23. OECD. Health At A Glance 2017: OECD Indicators. Paris: OECD Publishing; 2017. Available from: http://dx.doi.org/10.1787/health_glance-2017-en. [Last accessed on 2018 Jun 09].

24. Gidman W, Cowley J. A qualitative exploration of opinions on the community pharmacists' role amongst the general public in scotland. Int J Pharm Pract 2013;21:288-96.

25. Rapport F, Doel MA, Hutchings HA, Wright S, Wainwright P, John DN, *et al.* Eleven themes of patient-centred professionalism in community pharmacy: Innovative approaches to consulting. Int J Pharm Pract 2010;18:260-8.

26. Brown LM, Schommer JC, Omar M. Differing Views of Pharmacists' Roles in Healthcare: The 2007 Survey of Minnesota Patients and Pharmacists. Paper Presented at the Annual Meeting of the American Association of Colleges of Pharmacy; 2008. Available from: http://www.allacademic.com/meta/p261498_index.html [Last accessed on 2017 Jul 21].

27. Nash R, Thompson W, Stupans I, Lau ETL, Santos JMS, Brown N, *et al.* CPD aligned to competency standards to support quality practice. Pharmacy (Basel) 2017;5. pii: E12.

28. Elvey R, Hassell K, Hall J. Who do you think you are? Pharmacists' perceptions of their professional identity. Int J Pharm Pract 2013;21:322-32.

29. Kostagiolas PA, Bairaktaris KD, Niakas D. An information behaviour investigation of the community pharmacists in Greece for developing library and information services. Health Info Libr J 2010;27:46-56.

30. Kyriopoulos J, Tsiantou V. The financial crisis and its impact on health and medical care. Arch Hell Med 2010;27:834-40.