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Perceptions of Community Pharmacists on their Role in Delivering Pharmacy-led Services within Primary Healthcare: A Quantitative Study

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ABSTRACT

Background: Community pharmacists (CPs) have been encouraged worldwide to participate in multidisciplinary Primary Health Care (PHC) teams.

Objective: This quantitative study (using online survey-based questionnaire) aimed to identify CPs' perceptions about their role in both counselling and healthcare services (HS) provided.

Methods: The questionnaire was designed to capture CPs' perceptions about their role, and demographics. The study (ethically approved by the Ethics Committee of the Pharmaceutical Association of Ioannina, Greece) was conducted with CPs practicing in Ioannina, Greece.

Results: One hundred and twenty (response rate 72.7%) CPs took part in the study. Of those, sixty-three (52.5%) participants were females. More than half of the sample felt confident (56.7%, n=68), and competent (55.0%, n=66) to provide HS in PHC. Interestingly, 56.7% (n=68) agreed that there is a need of a Greek law, which will establish the role of CPs within the PHC. The majority (91.7%, n=110) reported a consid-

erable number of visits per week to their pharmacies from patients/individuals who seek advice without purchasing any medication. Only 60 (50.0%) agreed on the need for a consultation room inside their pharmacies in order to provide the public health services. A few pharmacists envisaged themselves having a more active role within the PHC team in the future (9.2%, n=11), as well as in providing behavioural change interventions (24.2%, n=29).

Conclusion: CPs generally felt confident and competent for their role as members of the PHC team. Future training may help CPs to develop further organisational and intervention-related skills to successfully provide their services in PHC.

Introduction

Primary healthcare (PHC) plays a pivotal role in modern health care systems. Recently, a substantial shift of care is observed in terms of quality of provided care, especially within the Primary Health Care field. According to the Health Care Quality Framework of the Organisation for Economic Co-operation and Development (OECD), there are three dimensions regarding quality of care: effectiveness, safety and patient-centredness.[1] Currently, PHC team seems to be evolving to a multidisciplinary team and incorporate interprofessional collaboration with other health care professionals, such as Community Pharmacists (CPs), so that care quality is further enhanced.[2-5]

Evidence-based pharmaceutical care is based on reliable evidence from well-designed and conducted research, and is considered to be an efficient and evolving field that could enhance high quality of patient care provided in the community.[6] As healthcare providers, pharmacists are the first point of call for the general public and can reduce doctors' workload by providing repeated prescriptions in patients with long-term conditions. Apart from their dispensing role, pharmacists are often assigned to counsel patients regarding side effects, to conduct medication reviews and to identify drug interactions, or advice on minor ailments.[6-8] CPs play an active role in health promotion services by offering smoking cessation, weight management support, flu vaccination service, etc.[9-11] Additionally, based on a recent published report, pharmacists in the community have clinical roles over the last 50 years. According to Peletidi et al.[11], Greek pharmacists were found to be eager to expand their role and offer public health services.

During the COVID-19 pandemic, pharmacists worldwide, as first-line healthcare professionals, played an important role in caring for patients in both community pharmacies and hospitals. In particular, community pharmacies have had an important role in the midst of a pandemic in advising and educating the public as well as in maintaining the supply of medicines. Community pharmacy is also one of the first points of contact between patients and the healthcare system and plays a key role in identifying and managing potential COVID-19 cases during the pandemic. More specifically in Greece, CPs apart from the aforementioned roles they arranged the vaccination appointments for the public and they also conducted SARS-CoV-2 rapid antigen tests.

The study aimed to explore CPs' perceptions and views about their counselling role and the pharmacy-led services provided.

Materials and Methods

Setting, participants and study design

A quantitative study using a survey-based questionnaire was conducted from February to April 2019. CPs within the municipality of Ioannina (Epirus region, Northwestern Greece) were invited to participate (n=165).[12] This location was chosen due to researchers' convenience and local knowledge.[13]

The questionnaire was sent to the eligible participants via email through the official mailing system of the Pharmaceutical Association of Ioannina. A kind reminder was sent to non-responders. Only completed questionnaires were considered eligible. The minimum sample size to pursue statistically significant results (95% Confidence Interval (CI), 5% marginal error) was calculated to be 112 responses based on Raosoft, Inc.[14]

Data collection tool (questionnaire)

The questionnaire was designed by A.P., one of the authors, who is an expert on both quantitative and qualitative studies in applied pharmacy practice research.[9-11,15] A pilot study was conducted with 5 pharmacists to assess whether the questionnaire was realistic and to ensure its validity prior to distribution. Questionnaires were returned with no changes.

This quantitative research used a survey-based questionnaire (Appendix 1) consisting of 4 parts and 22 questions (multiple-choice and 5-point Likert scale questions - the five offered options were "Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly Disagree" or "Excellent; Good; Average; Poor; Very poor"), including demographics. The first part included questions exploring pharmacists' perceptions related to the current situation of community pharmacies in Greece, their current and future roles, the barriers and the facilitators, as well as their interpersonal relationship with patients and their collaboration with other health care professionals within a multidisciplinary team. The second part was related to the counselling provided, and the ranges of services they provide (e.g., type and frequency), and their perceived level of skills and confidence they have acquired. The third part included general questions about how CPs augment their knowledge and keep themselves up to date, and how they visualise their future role in patient care. Finally, the fourth part included demographic information (gender, age, years of experience and the education level).

Data extraction and statistical analysis

For each completed questionnaire, data were extracted in a Microsoft Excel spreadsheet. After the data collection, a descriptive and inferential statistical analysis was conducted. Data were presented as absolute numbers and frequencies for binary and categorical variables. Comparisons were performed using chi-square test, Fisher's exact test, Mann-Whitney, and Kruskal-Wallis test as appropriate. It was considered as statistically significant a *p-value* less than 0.05. All analyses were performed using Statistical Package for the Social Sciences (SPSS Inc., Chicago, IL, USA) for Windows (18.0 software version).

Ethics approval statement

The study was conducted in compliance with the Declaration of Helsinki, a formal statement developed by the World Medical Association that provides ethical guidelines for research that uses human subjects.[16] The study was approved by the Ethics Committee of the Pharmaceutical Association of Ioannina, Greece. CPs were informed about the aim of the study by phone and an email through the official mailing system of the Pharmaceutical Association of Ioannina. Their consent to participate in the study was implied by completing the questionnaire. Participation was voluntary. All responses were collected anonymously.

Results

Community pharmacists' demographics

Out of 165 CPs who were invited to participate, 120 (72.7%) responded positively. Sixty-three (52.5%) of the participants were females. More than half of the participants (n=82, 68.3%) were aged between 23 and 44 years old and they had between 6 and 15 years of experience (n=66, 55%). Furthermore, the majority (n=86, 71.7%) held an undergraduate degree only (BPharm) (Table 1).

Table 1: Demographics

Characteristics	n (%)
Gender	
a. Males	57 (47.5)
b. Females	63 (52.5)
Age (years)	
a. 23-33	33 (27.5)
b. 34-44	49 (40.8)
c. 45-55	24 (20.0)
d. 56-67	14 (11.7)
Years of experience	
a. 5 years or less	38 (31.7)
b. 6-10	43 (35.8)
c. 11-15	23 (19.2)
d. 16-20	16 (13.3)
Level of qualification	
a. BPharm	86 (71.7)
b. MPharm or MSc	28 (23.3)
c. PhD	6 (5.0)
Footnote: This table describes the demographic information of the sample (n=120), including gender, age, year of experience, and level of qualification.	

Community pharmacists' perceptions of their role

Almost one third (n=37, 30.8%) of the participants perceived they work mainly in the primary care setting, more than one fourth (n=32, 26.7%) considered their work as business, and one fifth (n=24, 20%) as a provision of services. More than one third (n=42, 35%) considered their role as caregivers (Table 2). The aforementioned perceptions did not differ between age groups, gender, field experience, and education level (*p-value* > 0.05). Perceived barriers in active participation of CPs in patient care included increased workload (n=38, 31.7%), lack of confidence (n=32, 26.7%), and lack of available tools (n=29, 24.2%). Most CPs stated that they developed excellent (n=25, 20.8%) or good (n=53, 44.2%) interprofessional communication with other health professionals such as doctors,

nurses, dietitians, etc. They also ranked their communication with patients as excellent (n=30, 25%) or good (n=57, 47.5%). Perceived barriers during their communication with patients included poor hearing individuals (n=36, 30%), not native speakers (n=50, 41.7%), and patients from local minority groups (n=30, 25%). CPs used diverse sources to keep their knowledge up to date including mainly online sources (n=39, 32.5%), and specialist consultation (n=37, 30.8%). Interestingly, 36.7% of the participants (n=44) were aiming either at developing a profitable business or at developing excellent interprofessional collaboration with doctors (n=36, 30%). Only a few participants (n=11, 9.2%) envisaged themselves as an active member within the PHC team in the future and almost one fourth (n=29, 24.2%) as behavioural-intervention providers.

Table 2: Participants' responses

Statements	n (%)
Pharmacists' perceived perception about the pharmacy profession in the community is:	
a. Provision of services	24 (20.0)
b. Business	32 (26.7)
c. Primary care setting	37 (30.8)
d. Socialising	4 (3.3)
e. All of the above	19 (15.8)
f. None of the above	4 (3.3)
Community pharmacists believe that their role as healthcare professionals is:	
a. Caregiver	42 (35.0)
b. Decision maker	20 (16.7)
c. Patient communication	17 (14.2)
d. Manager	16 (13.3)
e. Staying up to date	15 (12.5)
f. Educator	8 (6.7)
g. Leader	0 (0)
h. All of the above	2 (1.7)
Perceived barrier(s) for pharmacists' active participation in patient care is:	
a. Lack of time	15 (12.5)
b. Lack of confidence	32 (26.7)
c. Workload	38 (31.7)
d. Lack of consulting skills	6 (5)
e. Lack of available tools	29 (24.2)

Table 2. Continued

The interprofessional communication that pharmacists have with other healthcare professionals (e.g., doctors, nurses, dietitians, etc.) is:	
a. Excellent	25 (20.8)
b. Good	53 (44.2)
c. Average	27 (22.5)
d. Poor	14 (11.7)
e. Very poor	1 (0.8)
The interaction and communication with patients is:	
a. Excellent	30 (25.0)
b. Good	57 (47.5)
c. Average	22 (18.3)
d. Poor	8 (6.7)
e. Very poor	3 (2.5)
The communication challenges that pharmacists face when offering their services are mainly with:	
a. Local minorities	30 (25.0)
b. Poor hearing individuals	36 (30.0)
c. Not native speakers	50 (41.7)
d. Disabled individuals	4 (3.3)
Community pharmacists keep their knowledge up to date through:	
a. Specialist consultation	37 (30.8)
b. IDEEAF[¶] webinars	2 (1.7)
c. PPA[§] training seminars	12 (10.0)
d. Conferences/ seminars	11 (9.2)
e. Handbooks	10 (8.3)
f. Scientific journals	9 (7.5)
g. Online sources	39 (32.5)
My vision for my future role as a community pharmacist is to:	
a. Be an active member of the PHC[†] team	11 (9.2)
b. Have a profitable business	44 (36.7)
c. Have excellent interprofessional collaboration with physicians	36 (30.0)
d. Have a more active role and gain patients' trust in providing behavioural interventions (e.g., smoking cessation, weight management) rather than pharmacotherapy advice only.	29 (24.2)

Footnote: This table refers to the community pharmacists' perceptions (n=120) about their current and future role.
[§]PPA, Panhellenic Pharmaceutical Association
[¶]IDEEAF, Hellenic Institute for Lifelong Learning and Professional Development of Pharmacists
[†]PHC, Primary Health Care

Community pharmacists' perceptions of the provision of counselling and health care services

The participants' perceptions about providing counselling and health care services as CPs are described in Table 3. The respondents stated that they offer advice in written (n=32, 26.7%) or verbal (n=35, 29.2%) form or both (n=53, 44.2%). The weekly number of patients/individuals who visit the pharmacy seeking advice without purchasing any medication may vary; one third of the pharmacists (n=39, 32.5%) reported 4 to 6 visits per week, and an extra third (n=38, 31.7%) reported more than 10 visits. The main available source for giving advice was leaflets developed by the pharmaceutical companies (n=42, 35%). The usual available tools/equipment to use during counselling included a weighting scale (n=109, 90.8%) and a blood pressure monitor (n=96, 80%). Almost the whole sample (n=108, 90%) reported that they provide vaccinations/injections (e.g., flu jabs, anti-tetanus immunoglobulin shots, etc.) and 42 participants (35%) reported that they measure patients'/individuals' blood pressure more than 10 times weekly. Additionally, half of them (n=60, 50%) strongly agreed/agreed that they had a positive attitude towards the need for a consultation area for public health services provision within the pharmacy premises (Table 3). In terms of pharmacists' perceived confidence regarding the provision of counselling and minor ailment advice 68 (56.7%) participants strongly agreed/agreed with the statement. This perception did not differ between age groups, gender, field experience, and education level (p-*value* > 0.05). In 2018, a Greek law was established and included CPs as part of the PHC team. This decision was endorsed by the CPs as more than half (n=68, 56.7%) strongly agreed/agreed with the statement, while only 9 (7.5%) participants disagreed. Finally, when CPs were asked about their up-to-date knowledge and skills to provide pharmacy-led preventive services, 66 (55%) participants strongly agreed/agreed and only 18 (15%) respondents expressed disagreement (Table 3). This perception did not differ between age groups, gender, field experience, and education level (p-*value* > 0.05).

Table 3: CPs' perceptions about their counselling role and services provision

Statements	n (%)
The form of the offered health advice is:	
a. Written	32 (26.7)
b. Oral	35 (29.2)
c. Both	53 (44.2)
The weekly number of patients/individuals who visit the pharmacy for health advice without purchasing any medication is:	
a. 0-3	10 (8.3)
b. 4-6	39 (32.5)
c. 7-10	33 (27.5)
d. more than 10	38 (31.7)
The available sources that I use to give advice to my patients are:	
a. Clinical guidelines	36 (30.0)
b. Leaflets (developed by pharmaceutical industry)	42 (35.0)
c. Scientific websites	26 (21.7)
d. Mobile apps	16 (13.3)

Table 3. Continued

The tools/equipment that I have available to enable me to provide health advice are:	
a. Weighting scale	109 (90.8)
b. Blood pressure monitor	96 (80.0)
c. Glucose Meter	68 (56.7)
d. Cholesterol Meter	51 (42.5)
e. All of the above	26 (21.7)
The pharmacy-led intervention(s) that I offer include:	
a. Smoking cessation	100 (83.3)
b. Weight management	60 (50.0)
c. Glucose (capillary) measurement	62 (51.7)
d. Blood pressure measurement	88 (73.3)
e. Vaccinations/injections	108 (90.0)
f. None of the above	4 (3.3)
g. All of the above	20 (16.7)
Please indicate the number of patients' visits per week for weight or blood pressure measurement:	
a. 0-3	13 (10.8)
b. 4-6	38 (31.7)
c. 7-10	27 (22.5)
d. more than 10	42 (35.0)
A consultation area within the pharmacy is necessary to provide public health services:	
a. Strongly agree	28 (23.3)
b. Agree	32 (26.7)
c. Neither agree nor disagree	29 (24.2)
d. Disagree	31 (25.8)
e. Strongly disagree	0 (0)
As a community pharmacist I feel confident to provide counselling and advice for minor ailments:	
a. Strongly agree	32 (26.7)
b. Agree	36 (30.0)
c. Neither agree nor disagree	37 (30.8)
d. Disagree	15 (12.5)
e. Strongly disagree	0 (0)
According to the Greek law 4486/2017 on Primary Health Care, community pharmacies may provide primary care services. As a community pharmacist, I:	
a. Strongly agree	33 (27.5)
b. Agree	35 (29.2)
c. Neither agree nor disagree	43 (35.8)
d. Disagree	9 (7.5)
e. Strongly disagree	0 (0)

Table 3. Continued

As a community pharmacist I feel that I have the appropriate knowledge and skills to provide preventive services as part of the PHC† team:	
a. Strongly agree	31 (25.8)
b. Agree	35 (29.2)
c. Neither agree nor disagree	36 (30.0)
d. Disagree	18 (15.0)
e. Strongly disagree	0 (0)
Footnote: This table describes the participants' views (n=120) about the counselling and the pharmacy-led services they currently provide. †PHC, Primary Health Care	

Discussion

This quantitative study explored pharmacists' perceptions of their daily role and the provision of services in their community pharmacies in the district of Ioannina in Greece. This study surveyed most of the registered community pharmacies in Ioannina County (120 out of 165), a wide geographical area which includes both urban and rural areas, known as one of the three regions with the lowest per capita income in Greece.[13] This survey tried to capture the perceptions of the CPs in this location for the first time.

Study's findings come in agreement with the study by Thamby and Subramani[16] and the concept of the *"seven-star pharmacist"* established by the World Health Organisation (WHO) regarding pharmacist's roles (caregiver, decision-maker, communicator, manager, life-long learner, teacher and leader). More specifically, it was identified that the pharmacists' role as healthcare professionals is also extended to the provision of pharmaceutical care, and the proper guidance of the patients/individuals.

Participating pharmacists also focused on their role as "businessmen/businesswomen", since they have to make a living from their profession. This is also reported in the Elvey et al.[17] study, where pharmacists see themselves as "shopkeepers". Interestingly, patients/individuals also think of pharmacists as "shopkeepers". Returning to the model of the *"seven-star pharmacist"*, managerial and leadership roles of a pharmacist seem to be associated with the smooth operation of a pharmacy on everyday practice.

Additionally, lack of up-to-date knowledge seems to be a barrier for effective practice. Therefore, a key factor that can directly influence the active role of a pharmacist is continuous education and training. It is well understood that current pharmacy practice is more complex than in the past. The traditional role of a product-centered pharmacist has switched to a person-centered role. This multifaceted role includes counselling and guidance, promotion and prevention of public health, medication adherence and pharmacotherapy control.

The study's participants stated that they feel confident to provide opportunistic counselling as part of their role in PHC. Pharmacists also reported that several individuals per week visit their pharmacies only for seeking advice, without purchasing any medication/product. Most pharmacists are offering smoking cessation advice, weight management counselling, blood pressure and glucose measurement, and other preventive interventions such as vaccinations. Various studies[19-21] have showed the positive outcomes of pharmacists' role and contribution in the PHC, namely healthcare cost reduction, disease prevention and overall patient health. Despite the reported active role of CPs within the PHC, just half of them agreed on the need for a consultation area[22] inside the pharmacy for providing public health inter-

ventions/services. It is well established that the *"consultation room"* within a pharmacy provides confidentiality, effective communication/relationship between service providers and users, and it personalises the provided care.

Moreover, factors including interprofessional communication and effective patients' interaction and communication may empower pharmacists' role in PHC.[7,20-21,23] Participating pharmacists also reported barriers they have to overcome to adequately provide PHC services, which may restrict community pharmacists' services merely to dispensing.[23-26] Study's findings come in agreement with a previous study published by Frankel et al.[26] that identified similar barriers.

Furthermore, CPs' perceptions, views and level of confidence and competence in providing PHC services are of great importance in the process of integrating community pharmacy in the PHC team. In the future, it would be interesting to identify the similarities and differences of the CPs' perceptions working in different areas of Greece. However, it is essential to focus on CPs' training to improve their confidence and competence level for providing PHC services.[19]

To reach the Pharmaceutical Group of European Union (PGEU) Vision for Community *"Pharmacy 2030"* [27] certain changes should be made in Greek community pharmacies. More specifically, the "PGEU Vision for Community Pharmacy 2030" reflects the desire of European CPs to advance the profession of pharmacy to meet the needs of patients and the current challenges in healthcare. The main priorities of the "PGEU Vision for Community Pharmacy 2030" include the following:

a) promoting pharmacy services to improve treatment adherence and minimise risks, b) fostering interprofessional collaboration and practice, c) gaining access for CPs to all relevant patient health information and all the medicines they are taking, d) integrating digital health solutions into practice, e) ensuring that there are no medication or medical devices shortages, f) securing CPs' compensation for the provided services to improve patients' needs and the sustainability of the healthcare systems.

Policy makers (Ministry of Health) and stakeholders (Panhellenic Pharmaceutical Association - PPA) should consider defining and establishing a thorough list of interventions/services that CPs could provide within the PHC. Greek law 4486/2017[28] was a necessary first attempt. CPs should also be motivated to acquire up-to-date knowledge and skills about their role within the PHC team. This may happen by reinforcing the context of PHC in the curriculum of community pharmacy undergraduate and postgraduate programmes. Furthermore, a compensation system for the provided PHC services should be secured.

A very promising example for the future of clinical pharmacy services (CPS) in Europe is the recent success of the Federal Union of German Associations of Pharmacists in Germany (ABDA).[29-30] Following long and tough negotiations with the statutory health insurance (SHI) funds (GKV-SV), the arbitration board decided in favor of the following 5 CPS to be reimbursed by all SHI and private insurance companies. The reimbursed services are the following:

1) Medication review (MR) for patients with polymedication (≥5 medications),

2) MR with follow-up for patients taking oral anticancer medications,

3) MR with follow-up for patients taking immunosuppressants post-transplantation,

4) blood pressure control in hypertension, and

5) assuring proper inhalation technique for patients receiving a new device or a device change[30]. This is a major change and initiates a new era for community pharmacies. The Panhellenic Pharmaceutical Association in collaboration with the Federation of Cooperative Pharmacists of Greece should consider this major change in Germany to fight for the Greek pharmacists' right to deliver structured, reimbursed services in their community pharmacies. This may also lead to changes in the pharmacy education curriculum as well as the post-graduate training offered.

This study was limited to CPs working in Ioannina County; therefore, the results cannot be

generalized. Additionally, the completion of the questionnaire was performed during pharmacy working hours. Therefore, the participating CPs had limited time.

Conclusion

CPs in Greece made an effort lately to become active members of the multidisciplinary PHC team. This study emphasized on CPs' willingness to participate in PHC. Taking into consideration their perceptions and evaluating their needs it is important to develop and offer post-graduate training in the near future, in order to enhance the provision of high-quality patient care in the community pharmacy premises. □

To see Appendix 1 click here

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