

Bulgarian community pharmacists' attitudes and barriers towards pharmaceutical care provision for pregnant women

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Received 13 May 2021 ♦ Accepted 28 May 2021 ♦ Published 6 July 2021

Citation: Staynova R, Gvozdeva Y, Peikova L, Mihaylova A (2021) Bulgarian community pharmacists' attitudes and barriers towards pharmaceutical care provision for pregnant women. *Pharmacia* 68(3): 511–516. <https://doi.org/10.3897/pharmacia.68.e68651>

Abstract

The aim of this study was to assess the attitudes and perceived barriers towards pharmaceutical care provision for pregnant women in Bulgarian community pharmacies.

A cross-sectional web-based study was carried out among community pharmacists in Plovdiv region, Bulgaria. The survey instrument was a self-administered questionnaire including 18 statements based on a five-point Likert scale. Descriptive statistics were applied to respondents' characteristics and opinion regarding attitudes and barriers towards pharmaceutical care provision for pregnant women. A total of 122 community pharmacists completed the survey. The majority of respondents (90%) agreed or strongly agreed with the statement that providing pharmaceutical care will improve health and awareness of pregnant women. The statement that providing pharmaceutical care brings professional satisfaction, obtained the highest mean score of 4.61. Half of the respondents (50.8%) were worried about taking risks associated with assuming responsibility for the treatment outcomes of pregnant women. One of the main barriers for providing pharmaceutical care was the lack of time (mean score = 4.10). Other major barriers were the lack of additional training (83.9%) and electronic medical record of the pregnant women (68.9%). Overall Bulgarian community pharmacists have positive attitudes towards providing pharmaceutical care to pregnant women. Conducting additional training courses and workshops will help for the active involvement of the pharmacist in the care of pregnant women.

Keywords

Bulgaria, community pharmacists, pharmaceutical care, pregnancy

Introduction

Pharmacy is an ever-evolving profession in which the pharmacist, with his knowledge and skills, is committed to meeting the health care needs of patients. In addition to their traditional role of dispensing prescription medicines and advising patients, pharmacists are providers of phar-

maceutical care. They take responsibility for the treatment outcome and actively participate in the monitoring of therapy. Pharmacists are also advisors to the patient regarding the safe and rational use of medications (Berg et al. 2009).

Pharmaceutical care is an integral part of modern pharmacy practice, which requires direct collaboration of the pharmacist with a patient to accurately assess their

needs for drug therapy, and cooperation with other health professionals to achieve specific therapeutic goals (Dimitrova et al. 2016).

The definition of the concept of “pharmaceutical care” was first established by Charles Hepler and Linda Strand in 1990 and reads: “Pharmaceutical care is the responsible provision of drug therapy for the purpose of achieving definite outcomes which improve a patient’s quality of life. These results are: (1) treatment of the disease, (2) elimination or reduction of the patient’s symptomatology, (3) arresting or slowing down a disease process, (4) preventing a of disease or symptomatology” (Hepler and Strand 1990). Following Hepler and Strand, the American Pharmacists Association expanded the original definition by their “Principles of Practice for Pharmaceutical Care” (APhA 1995). A key component of the concept is caring about the patient. (Jones 2015). In 2013 The Pharmaceutical Care Network Europe (PCNE) developed a redefined definition stating that: “Pharmaceutical Care is the pharmacist’s contribution to the care of individuals in order to optimise medicines use and improve health outcomes.” (Allemann 2014).

During its forty years of development, the concept of “pharmaceutical care” has shown the ability of pharmacists to be an equal part of the team of health professionals who share responsibility for the patient’s health. In European countries, this concept has been successfully applied for more than 20 years (Dimitrova et al. 2016; Petkova 2017).

Although pregnancy is a physiological condition, during this period a number of changes occur in a woman’s body related to ensuring the foetus development and successful completion of the pregnancy (Staynova et al. 2019). The occurrence of acute conditions and the presence of chronic diseases necessitate the use of medicines during pregnancy. As the most accessible medical professional, the pharmacist is often the first to be expected to give advice on the use of drugs during pregnancy (Bradley 2009; Samuel and Einarson 2011). Because most pregnancies are unplanned, a woman often finds herself pregnant while already taking medication and she visits the pharmacy as an affordable health facility where she can get advice and ensure she hasn’t harmed her baby (Samuel and Einarson 2011). Up to 80% of all women use medications during pregnancy (Nordeng et al. 2010). Pregnant women often have questions about medication use and often state that the pharmacist is a reliable source of information (Hämeen-Anttila et al. 2013). Pharmacists can also ensure that pregnant women do not take medications that are contraindicated during pregnancy.

Safe drug use during pregnancy is an important element of prenatal care, so pregnant women and their physicians often turn to pharmacists for information and advice. The largest study assessing the risk associated with the use of medicines during pregnancy indicates that the three most used sources of information are the physician, the patient leaflet, and the pharmacist (Nordeng et al. 2010).

In 2011, The International Pharmaceutical Federation (FIP) approved and adopted a paper on the role of

pharmacists in improving maternal and child health. This document is structured in accordance with the FIP/WHO guidelines on Good Pharmacy Practice (FIP 2013).

Growing health care needs have motivated the implementation of additional professional training of specialists with skills for modern care, adaptability, communication, mobility and teamwork (Kasnakova et al 2016). In 2000 a new discipline called “Pharmaceutical care” was introduced in Bulgaria as an optional course. It is part of the “Masters of Science in Pharmacy (M.Sc. Pharm.)” degree course. In 2005, the course in Pharmaceutical care became a compulsory subject (Petkova and Atkinson 2017).

Basic knowledge about drugs, their safe use during pregnancy, teratogenic effect, pharmacy students obtain from the disciplines of Pharmacology, Toxicology and Pharmacotherapy. The pharmaceutical care course covers only some aspects of prenatal care such as communication with the patient and self-medication.

The aim of this study was to assess the attitudes and perceived barriers towards providing pharmaceutical care for pregnant women in Bulgarian community pharmacies.

Materials and methods

Study design and setting

A cross-sectional, questionnaire-based study was performed between July – October 2018. The study was conducted among pharmacists working in community pharmacies in the administrative district of Plovdiv, Bulgaria. An invitation to participate in the study was sent to all active members of the Regional Pharmaceutical Chamber – Plovdiv of the Bulgarian Pharmaceutical Union (n = 716, July 2018). A web application was used for distribution of the survey. A total of 122 surveys were completed and returned (17% response rate).

Survey instrument

The study tool included statements regarding pharmacists’ attitudes and barriers towards providing pharmaceutical care for pregnant women. The questionnaire was divided into 3 sections: (1) demographic and professional data; (2) attitudes towards providing pharmaceutical care to pregnant women; (3) perceived barriers for providing pharmaceutical care for pregnant women. Sections (2) and (3) included a total of 18 items (9 statements in each section) to which respondents must answer according to the five-point Likert scale, ranging from 1 – “strongly disagree” to 5 – “strongly agree”. The items included in sections (2) and (3) were based on previously used instruments regarding the attitudes and perceived barriers towards providing pharmaceutical care (Dunlop and Shaw 2002; Ngorsuraches and Li 2006). Identification and contact details were not included in the questionnaire in order to ensure the anonymity of the respon-

dents, protect their personal data and encourage their participation in the study. The questionnaire contained clear instructions for completion: a brief explanation of the purpose of the study; clear instructions for completing the questionnaire and its individual sections; It was clearly stated that the collection of data respected the requirement of confidentiality.

Statistical methods

The data was analysed using SPSS ver. 19. Descriptive statistics were used to describe the demographic and occupational characteristics of respondents, as well as attitudes and barriers to pharmaceutical care for pregnant women. Quantitative data are presented as means and standard deviations (SD), and categorizing data – as frequencies and percentages. The pharmacists' attitudes and perceived barriers towards providing pharmaceutical care for pregnant women were measured using multiple scales. The internal consistency of the scales was calculated by Cronbach's alpha. Attitudes and perceived barriers were measured using means and standard deviations.

Results

Demographic and professional characteristics

The demographic and professional characteristics of the surveyed pharmacists are presented in Table 1. The predominant part of the participants were women (72.9%) and the remaining 27% – men. The majority of the respondents (60.6%) were aged 20–29 years. The mean age of the respondents was 32 years with an age range from 24 to

Table 1. Demographic and professional characteristics of the surveyed pharmacists.

Characteristics	Frequency	Percentage
Gender		
Female	89	72.9%
Male	33	27.0%
Age groups (years)		
20–29	74	60.6%
30–39	32	26.2%
40–49	12	9.8%
>50	4	3.3%
Work experience (years)		
1–5	77	63.1%
6–10	32	26.2%
11–15	9	7.4%
>15	4	3.3%
Pharmacy type		
Independent	42	34.4%
Chain	80	65.6%
Position		
Pharmacy manager	45	36.9%
Pharmacy staff	77	63.1%
Postgraduate specialization		
Yes	5	4.1%
No	117	95.9%

61 years. More than half of the pharmacists (65.6%) reported working in chain pharmacy. The surveyed participants with work experience of 1–5 years (63.1%) predominated, followed by 6–10 years (26.2%). Pharmacy managers were 36.9% of the respondents. Only five community pharmacists (4.1%) reported that they had received a postgraduate qualification.

Attitudes and barriers towards pharmaceutical care for pregnant women

The statements included in the survey aimed to establish pharmacists' opinion about providing pharmaceutical care for pregnant women. The results regarding attitudes and barriers of providing pharmaceutical care for pregnant women are presented in Tables 2 and 3.

The majority of respondents (90%) agreed or strongly agreed with the statement that providing pharmaceutical care will improve health and awareness of pregnant women. The statement that providing pharmaceutical care brings professional satisfaction, obtained the highest mean score (4.61 ± 0.54). The predominant part (79.5%) of the respondents agreed or strongly agreed that detecting and solving problems related to the health and drug therapy of pregnant women is an important responsibility of the pharmacist. The majority (72.9%) of the respondents believed that there is no effective provision of pharmaceutical care for pregnant women in Bulgarian community pharmacies. One in five pharmacists (20.5%) stated that the provision of pharmaceutical care would not benefit pregnant women, while 70.4% thought the opposite. Half of the respondents (50.8%) were worried about taking risks associated with assuming responsibility for the treatment outcomes of pregnant women. The same percentage of the respondents reported that pharmacists in Bulgaria do not have enough knowledge to provide effective pharmaceutical care. Over 90% of the respondents said they need additional courses and specializations to be effective health advisers for pregnant women. Cronbach's alpha over the 9 statements was 0.587.

One of the main barriers for providing pharmaceutical care was the lack of time. This statement received the highest mean score (4.10 ± 0.85). Other important barriers were the lack of additional training (83.9%) and electronic medical record of the pregnant woman (68.9%). For 73.7% of the participants in the study, the lack of funding for the "pharmaceutical care" service was a major obstacle to its provision to patients. Less than half of the respondents (45.9%) reported that the lack of specialized software or other technical resources would negatively affect the provision of pharmaceutical care, while 24.6% of the respondents cannot give a definite answer. More than half of the pharmacists stated that the lack of effective communication (58.2%) as well as a pregnant woman's reluctance to take pharmaceutical care (56.6%) can be barriers. Cronbach's alpha over the 9 statements was 0.756.

Table 2. Pharmacists' attitudes towards pharmaceutical care.

Statement	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)	Mean score ± SD (95% CI)
	1	2	3	4	5	
1. I think that providing pharmaceutical care will improve the health and awareness of pregnant women	0.0%	0.0%	0.0%	41.8%	58.2%	4.58±0.50 (4.49–4.67)
2. Pharmaceutical care would improve pregnant woman's appreciation of the pharmacist's role.	0.0%	0.8%	9%	32.8%	57.4%	4.47±0.69 (4.34–4.59)
3. Providing pharmaceutical care offers me professional satisfaction	0.0%	0.0%	2.5%	33.6%	63.9%	4.61±0.54 (4.52–4.71)
4. I believe that preventing and solving health-related and drug-related problems in vulnerable patients like pregnant women, are my responsibilities.	1.6%	6.6%	12.3%	42.6%	36.9%	4.07±0.95 (3.90–4.24)
5. In Bulgarian community pharmacies there is no effective provision of pharmaceutical care for pregnant women	2.5%	9%	15.6%	43.4%	29.5%	3.89±1.01 (3.70–4.07)
6. I do not think that provision of pharmaceutical care would result in any significant benefit to pregnant women	31.1%	39.3%	9%	9.8%	10.7%	2.30±1.30 (2.06–2.53)
7. I am not comfortable with taking risks associated with assuming responsibility for the treatment outcomes of pregnant women	3.3%	24.6%	21.3%	33.6%	17.2%	3.37±1.13 (3.17–3.57)
8. Bulgarian community pharmacists do not have enough knowledge and skills to provide effective pharmaceutical care	5.7%	21.3%	23%	32%	18%	3.35±1.17 (3.14–3.56)
9. I need to attend additional courses to be an effective health adviser for pregnant women	0.0%	3.3%	4.9%	43.4%	48.4%	4.37±0.73 (4.24–4.50)

Abbreviations: SD (standard deviation), CI (confidence interval).

Table 3. Perceived barriers for providing pharmaceutical care for pregnant women.

Statement	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)	Mean score ± SD (95% CI)
	1	2	3	4	5	
1. Lack of time to provide pharmaceutical care	0.8%	4.9%	11.5%	49.2%	33.6%	4.10±0.85 (3.95–4.25)
2. Lack of private consultation area	3.3%	11.5%	18%	45.1%	22.1%	3.71±1.04 (3.53–3.90)
3. Lack of training regarding provision of pharmaceutical care for pregnant women	0.8%	5.7%	9.8%	50.8%	32.8%	4.09±0.85 (3.94–4.24)
4. Lack of effective communication between pharmacist and pregnant woman	4.1%	27%	27%	41.8%	16.4%	3.56±1.02 (3.37–3.74)
5. Lack of acceptance of the pharmacist's role by the pregnant woman	2.5%	19.7%	19.7%	37.7%	18.9%	3.49±1.10 (3.29–3.69)
6. Lack of knowledge about the medication safety during pregnancy	4.1%	27%	22.1%	28.7%	18%	3.30±1.17 (3.09–3.50)
7. Lack of documentation (e.g., software for keeping the patients' medical data and other technical resources)	5.7%	23.8%	24.6%	28.7%	17.2%	3.28±1.17 (3.07–3.49)
8. Lack of access to patient medical records	2.5%	8.2%	20.5%	41%	27.9%	3.84±1.01 (3.66–4.02)
9. Lack of funding (e.g., reimbursement) for providing pharmaceutical care	2.5%	9.8%	13.9%	43.4%	30.3%	3.89±1.03 (3.71–4.08)

Abbreviations: SD (standard deviation), CI (confidence interval).

Discussion

According to our respondents, the main barriers that prevent the implementation of pharmaceutical care for pregnant women are the lack of sufficient time, the lack of a database, the lack of additional training, and funding for the service. Very often in the pharmacy there are organizational barriers (lack of time, insufficient staff, lack of private space), which can obstruct the implementation of pharmaceutical care services. Our results confirm the data from studies conducted in different countries, namely that the lack of time is a major barrier to the application of pharmaceutical care (Dunlop and Shaw 2002; Ngorsuraches and Li 2006; Uema et al 2008; El Hajj et al 2016). The lack of reimbursement as well inconvenient access to patient medical information, are reported by different authors as main barriers to the implementation of pharmaceutical care (Van Mil 2001; El Hajj et al 2016).

Examples for European countries with high implementation of pharmaceutical care are Belgium, Netherlands, and France (WHO 2019). Experience has shown that some components of the concept of "pharmaceutical care" are applied in pharmacies in Bulgaria, and the positive aspects have been demonstrated in a number of studies, including for pregnant women (Petkova et al. 2006, 2008, 2011, 2012; Getova et al. 2017; Todorova et al. 2017).

The importance of communication is essential for providing effective pharmaceutical care for pregnant women. More than half of community pharmacists participated in our survey, reported communication barriers between them and pregnant women. Effective communication skills and professional behavioral models suggest a high level of competence related to humanity and empathy. (Kasnakova 2015, 2016). The establishment of modern information and communication technologies worldwide

will create significant advantages for more efficient use of resources and management of pharmaceutical care. (Kilova et al 2020).

A recent study conducted in Belgium examined community pharmacists' attitudes, barriers, knowledge, and counselling practice regarding pharmaceutical care during preconception, pregnancy, and lactation. The study, which was conducted in the form of an online survey, involving 63 community pharmacists. According to the participants' responses, the main barriers to pharmaceutical care provision during preconception, pregnancy and lactation include difficulties in identifying the woman's status (71%) and lack of education (67%) (Ceulemans 2020a). Another study conducted by the same authors assessed the impact of a blended learning program on community pharmacists' barriers, knowledge, and counselling practice regarding preconception, pregnancy, and lactation (Ceulemans 2020b). The intervention included an e-learning and an on-site training day. The results of the training program showed decreased pharmacists' barriers and improved knowledge (Ceulemans 2020b).

Although community pharmacists are the most accessible health care providers there are gaps in knowledge and consulting practices with regard to medication use during pregnancy, which is confirmed by a number of studies (Bains 2014; Alrabiah 2017). In order to provide effective counselling for pregnant women, pharmacists must have appropriate and evidence-based information.

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This will help for the full implementation of pharmaceutical care services regarding pregnancy.

Our results confirm the need for educational interventions regarding the counselling of pregnant women. Continuing education organized by the Bulgarian Pharmaceutical Union (BPhU), as well as the participation of pharmaceutical faculties can help increase pharmacists' awareness of the specifics of drug use during pregnancy.

Conclusion

Based on our findings, we can summarize that Bulgarian community pharmacists generally have positive attitudes towards providing pharmaceutical care to pregnant women. The establishment of a framework for the development of standards for pharmaceutical care in Bulgaria is one of the main objectives in the Good Pharmacy Practice Rules of the BPhU. Due to the lack of a precise definition in the Bulgarian legislation, as well as insufficient collaboration between pharmacists, physicians, and other healthcare providers, the implementation of the concept in practice is difficult. The pharmacist needs to be actively involved in the care of pregnant women and to provide information on the rational and safe use of medicines, vitamins and food supplements. BPhU can play a key role in the development and implementation of pharmaceutical care programs for pregnant women.

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