








## Breastfeeding friendly pharmacy from pharmacists perspective

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### ABSTRACT

**Objective:** The primary goals of our research were to explore pharmacists' perception of breastfeeding friendly pharmacy (BFPh) requirements and factors associated with their awareness about these requirements.

**Methods:** A cross-sectional study design was conducted using a self-administered survey. A convenience sample (n=381) of community pharmacists, was recruited through social media resources. Data were entered and analyzed using SPSS software version 35. The frequency or percentages were used for categorical variables while means and standard deviations were used for continuous variables. Also, linear regression analysis was used to evaluate factors affecting pharmacists' awareness about BFPh requirements.

**Results:** The majority of recruited pharmacists were female (n=329, 86.4%), aged between 23 to 30 years of age (78.7%, n=300). The most common steps to describe a pharmacy as a BFPh from the perspective of surveyed pharmacists were training all pharmacy staff to develop the necessary skills (n=239, 62.7%) followed by informing all pregnant women about the benefits of breastfeeding (n=225, 59.1%) and having a written policy on feeding infants and young children according to the recommendations of the WHO and in compliance with the international code (n=209, 54.9%). Furthermore, pharmacists aging 40 years or less showed a significantly higher awareness about BFPh requirements compared to those aging above 40 years (beta=-0.013, p=0.045). In addition, 37% (n=142) of pharmacists perceived that answering general questions or concerns on general medication intake while breastfeeding babies is their major role in breastfeeding support.

**Conclusion:** Breastfeeding support is a promising area for promoting professional pharmacy services. Training all pharmacy staff and informing all pregnant about the benefit of breastfeeding are the most common two steps to describe a pharmacy as BFPh. Additionally, the awareness of BFPh requirement was associated with pharmacists age. Future focus should be placed on implementing BFPh project in Jordanian pharmacies, where the steps of this project are modified in line with the capabilities of pharmacies in Jordan within governmental pharmaceutical control.

**Keywords:** pharmacist, breastfeeding, friendly, pharmacy, steps

## INTRODUCTION

Breastfeeding protection, promotion, and support are now an international concern, as highlighted in the global strategy for infant and young child feeding [1]. Owing to the development and following commercialization of infant formula in the 18<sup>th</sup>, 19<sup>th</sup>, and 20<sup>th</sup> centuries, there has been a strong decline in breastfeeding rates worldwide [2, 3]. Barriers for breastfeeding are many and diverse, ranging from the mother's inadequacy of knowledge, lack of social and family support, social norms, embarrassment with public nursing, employment and childcare issues, lactation problems, and worries about sexuality [4-6].

Given the nutritional, immunological, neurological, endocrinological, and ecological benefits of breastfeeding, it is essential for both the health and survival of mothers and their

children [7]. National drives, highlighting the health benefits of breastfeeding, have been developed to extend the duration of breastfeeding [8]. The baby friendly hospital initiative (BFHI) of the World Health Organization/United Nations International Children's Emergency Fund (WHO/UNICEF) is the best illustration of this [9]. By 1991, the WHO/UNICEF introduced BFHI universally to motivate health facilities to improve breastfeeding support, which involves the 10 steps to successful breastfeeding [10, 11]. A recent international systemic review has revealed that the BFHI is the intervention with the most confirmed scientific evidence for the promotion, protection, and support of breastfeeding [12]. In Jordan, the Primary Healthcare Administration, a division of the Jordanian Ministry of Health, is committed to promoting breastfeeding as the ideal way for all newborns to start their lives [13]. By 2022, the Health Institutions Accreditation Board renewed the granting of a "Baby friendly hospital certificate" to five

**Table 1.** Nine steps for a breastfeeding friendly pharmacy

Every pharmacy should
1. have a written policy on feeding infants & young children according to recommendations of WHO & in compliance with international code.
2. train all pharmacy staff in the skills necessary to apply this policy.
3. inform all pregnant women of the benefits of breastfeeding & of the disadvantages of artificial feeding.
4. help and encourage all mothers to initiate breastfeeding within half an hour of birth.
5. prepare an environment to welcome mothers with their infants & children.
6. promote the image of breastfeeding mothers & avoid promoting the image of mothers who are bottle feeding.
7. provide and sell breastmilk substitutes only when specifically requested (with regard to breastmilk substitutes the code states: All powdered or liquid milk, specially formulated for starting, continuing and growing, and so on; all the complementary foods and drinks for feeding when they are represented as suitable substitutes for breastmilk; bottles and artificial teats).
8. acquire breastmilk substitutes without adhering to promotional discount campaigns & refusing to give mothers promotional gadgets.
9. promote community initiatives and network projects with other players active in the protection, promotion, & support of breastfeeding.

Jordanian hospitals and preparing nine more hospitals to obtain it in next future [14]. The Council awards this certificate to hospitals that meet the requirements of the “baby friendly hospital initiative” and their commitment to national system to control the marketing of breast-milk substitutes, which prohibits the promotion of any breast-milk substitute [14].

Breastfeeding promotion activities in health care settings have been a focus of global breastfeeding promotion efforts. Health workers including pharmacists are well trusted by the general public and have regular contact to new parents [15, 16], making them a perfect channel for communicating the company’s messaging to parents. As a result, they are frequently the target of promotional activities [17].

Globally, attempts are under way to identify and create “Baby friendly communities”. Breastfeeding support at a community pharmacy can fill a key care need. One of the good practices that have been suggested is a “breastfeeding friendly pharmacy (BFPh)” project which was started in Italy in 2007 [18]. The main goal of the project is to support mothers in achieving their breastfeeding goals by creating a warm atmosphere in the pharmacy and listening to and supporting the family through collaboration between health care providers (HCPs) [18]. The pharmacies participating in the project are committed to training all employees in accordance with WHO/UNICEF standards [19] and complying with the 9 steps of the BFPh initiative (**Table 1**) [18]. Under the slogan “Breastfeeding protection: A shared responsibility,” raised by the Jordanian Ministry of Health, efforts are being made to emphasize the importance of collective efforts to encourage and protect breastfeeding for every child [13]. Thus, the primary goals of our research were to explore pharmacists’ perception of BFPh requirements and factors associated with their awareness about these requirements.

## METHODS

### Study Design and Participants

This study followed a descriptive cross-sectional design that was conducted in Jordan from 2<sup>nd</sup> August 2021 to 17<sup>th</sup> February 2022. The online survey was developed and validated by clinical researchers to solicit anonymous responses, which were treated confidentially. Participants’ recruitment was conducted using a convenience sampling technique. All approach through social media portal (Facebook and WhatsApp groups). The inclusion criteria were explained at the start of the survey. Participants were advised that their participation in the study was voluntary and did not pose any risks. A written participant consent statement “your

participation in completing this questionnaire is highly appreciated” was given to the participants at the beginning of the survey. If the participants were willing to proceed with the survey, they approved their consent. If not, they selected “disagree to participate” and did not continue with the survey questions. Potential participants who completed the survey were considered to have given informed consent for their participation in the study.

### Survey Development, Validation, and Reliability

The online survey was developed after reviewing related studies on the topics in the literature [18, 20, 21]. A draft questionnaire was designed, then the draft questionnaire was examined for fitness of purpose and face validity in a focus group involving experts in pharmacy practice, other than the research team. Following this review, the final version of the questionnaire was piloted in a sample of 10 volunteers of community pharmacists, to verify its comprehension, clarity and cultural acceptability prior to moving on to the main survey. Internal consistency and reliability was tested by the Cronbach’s alpha coefficient, which was 0.775. The alpha test value shows that the survey has an excellent internal consistency. The data obtained from the pilot test were not included in the final data analysis. The survey contained multiple-choice questions and was designed to be completed within five-seven minutes. The final version of the survey contained three parts. Part one comprised of 10 questions, which included sociodemographic information. The second part evaluated pharmacists’ perception about their role in breastfeeding support. While the last part aimed to explore the pharmacist’s awareness about the requirements that must be met to describe pharmacy as a “BFPh”. The internal consistency and reliability of the third section was evaluated using Cronbach’s alpha with a value of 0.755 indicates an acceptable internal consistency. The online survey was finally prepared using Google Forms, it was self-administered and presented in English language.

### Sample Size

The most recent statistics released by the Jordanian Pharmacist’s Association (JPA) showed that there were 22,667 registered pharmacists by February 2019 [22]. Sample size was estimated using Raosoft<sup>®</sup> sample size calculator for online survey. With margin of error of 5% confidence level 95%, population size of 22,667 and with response distribution of 50% the minimum recommended sample size was 378 participants. The decision was made to increase the number to around 380 pharmacists to consider any unknown issues that might arise.

**Table 2.** Sociodemographic characteristic of participants

Characteristics	n (%)
Age	
≤40	355 (93.2)
>40	26 (6.8)
Gender	
Female	329 (86.4)
Male	52 (13.6)
Marital status	
Single	221 (58.0)
Married	152 (39.9)
Divorced	7 (1.8)
Widow	1 (0.3)
Do you have any children?	
Yes	116 (30.4)
No	265 (69.6)
Years of practices	
<5 years	286 (75.1)
≥5 years	95 (24.9)
Educational level	
BPharm	234 (61.4)
Pharm D	96 (25.2)
MSc	39 (10.2)
PhD	12 (3.1)
Work location	
Rural (village)	86 (22.6)
Urban (city)	295 (77.4)
Pharmacy type	
Independent pharmacy	280 (73.5)
Chain pharmacy	101 (26.5)
Do you have personal experience in breastfeeding? <sup>†</sup>	
Yes	210 (55.1)
No	171 (44.9)
In your pharmacy, is there any promotion of breastfeeding as norm in all interactions with breastfeeding mother/mother's representative?	
Yes	165 (43.3)
No	216 (56.7)

Note. <sup>†</sup>For the purposes of this survey, personal experience in breastfeeding is defined as having breastfed yourself; or having a spouse/partner (wife) who has breastfed; or have a family member who has breastfed, with whom you have spent significant time, including overnight, while they were breastfeeding & n=381

### Statistical Analyses

The completed surveys were extracted from Google Forms as an Excel sheet and were then exported to statistical package for social sciences version 25.0 (SPSS1 Inc., Chicago, IL, USA)

for the statistical analysis. The frequency or percentages were used for categorical variables. Continuous variables presented by means and standard deviations.

For part two, an awareness score for each pharmacist was calculated by counting the number of BFPH requirements that were identified by each participant (out of nine). To assess the factors associated with pharmacists' awareness about BFPH requirements, univariate and multivariable linear regression were used. Variables that were found to be significant on a single predictor level ( $p \leq 0.250$ ), using univariate logistic regression analysis, were entered into multiple linear regression analyses. Statistical significance was considered at  $p \leq 0.05$ .

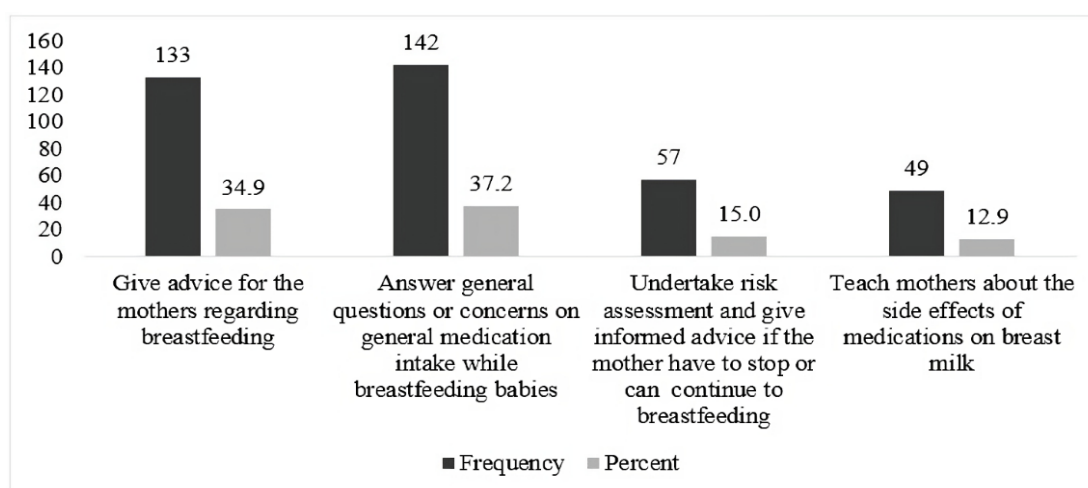
## RESULTS

### Sociodemographic Characteristics

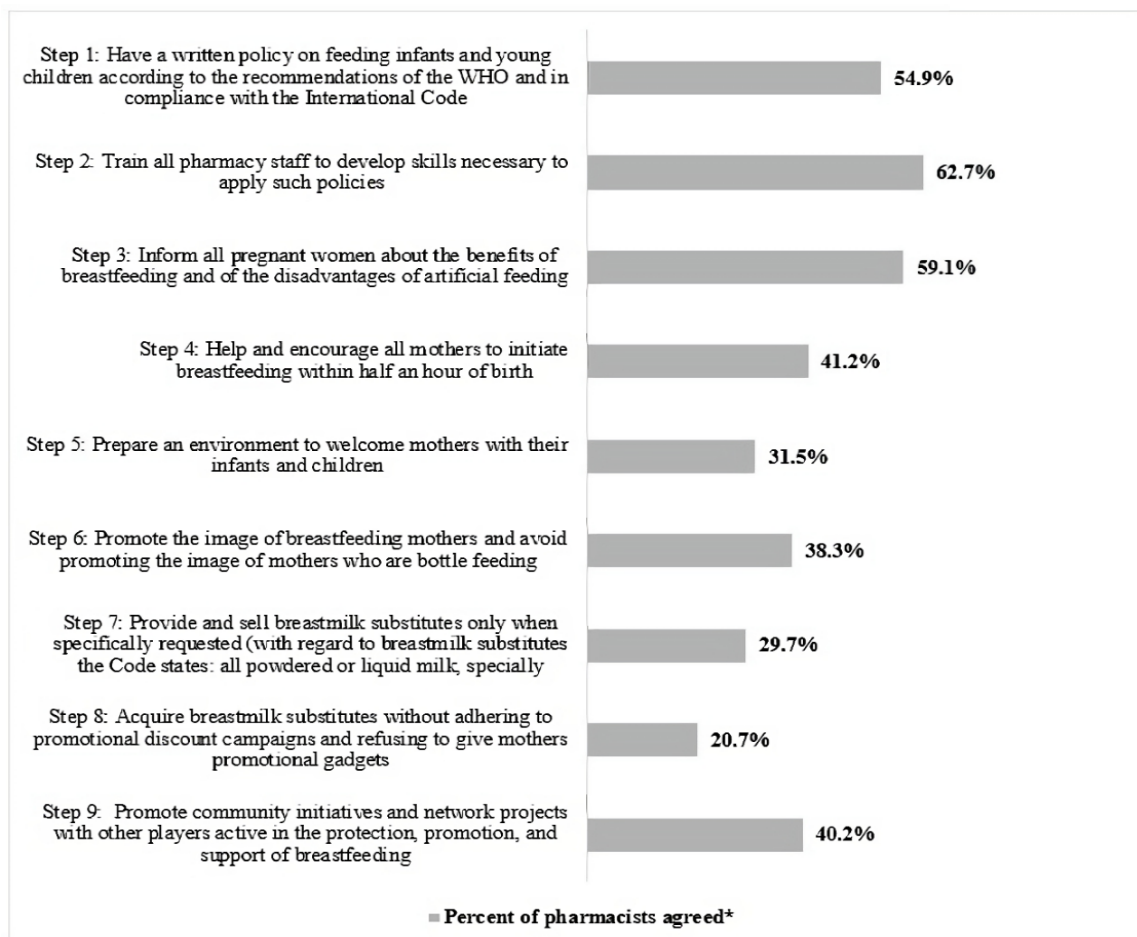
After distributing the online questionnaire, a total of 381 completed forms were included. The majority of participants were females made up to 86.4% ( $n=329$ ) with the majority between 23 to 30 years of age ( $n=300$ , 78.7%). Investigating the marital status revealed that the more than half of the participants ( $n=221$ , 58%) were single and almost 70% ( $n=265$ ) of the participants did not have children. Finally, more than half (55.1%, ( $n=210$ )) of the study sample had a personal experience in breastfeeding. More details about participants' demographic characteristics are presented in **Table 2**.

### Pharmacists' Perception About Their Role in Breastfeeding Support

The pharmacists were asked about their perceptions of their role in breastfeeding support (**Figure 1**). Of these, 37% ( $n=142$ ) perceived that answering general questions or concerns on general medication intake while breastfeeding babies is their major role. Interestingly, almost the same percentage ( $n=133$ , 35%) thought that giving advice for the mothers regarding breastfeeding is their primary role in breastfeeding support. In addition, very few pharmacists perceived that undertaking risk assessment and giving informed advice if the mother have to stop or can continue breastfeeding whilst taking medicines ( $n=57$ , 15%) is their major role in breastfeeding support.



**Figure 1.** Pharmacists' perception about their role in breastfeeding support (Source: Authors' own elaboration)



**Figure 2.** Community pharmacists' application of nine steps of breastfeeding friendly pharmacy (results do not add to 100% due to multiple responses for different items) (Source: Authors' own elaboration)

### Pharmacists' Awareness for Breastfeeding Friendly Pharmacy Requirements

The descriptive statistics for the "nine-steps BFPh" question are presented in **Figure 2**. Step 2 (training all pharmacy staff to develop the necessary skills [n=239, 62.7%]) followed by step 3 (informing all pregnant women about the benefits of breastfeeding [n=225, 59.1%]) and step 1 (having a written policy on feeding infants and young children according to the recommendations of the WHO and in compliance with the international code [n=209, 54.9%]) were the most common steps to describe a pharmacy as a BFPh from the perspective of surveyed pharmacists. Moreover, only few pharmacists perceived that step 8 (acquiring breastmilk substitutes without adhering to promotional discount campaigns and refusing to give mothers promotional gadgets [n=79, 20.7%]) and step 7 (providing and selling breastmilk substitutes only when specifically requested [n=113, 29.7%]) were required to describe a pharmacy as BFPh.

### Factors Associated With Pharmacists Awareness About Breastfeeding Friendly Pharmacy Requirements

Linear regression analysis was conducted to evaluate factors affecting pharmacists' awareness about BFPh requirements (**Table 3**). Results showed that pharmacists aging 40 years or less showed a significantly higher awareness about BFPh requirements compared to those aging above 40 years (beta=-0.013, p=0.045).

## DISCUSSION

For the first time in Jordan, this study assessed community pharmacists' perceptions of a BFPh steps and requirements. Moreover, it offered a wonderful chance to enlighten pharmacists on this concept. Breastfeeding is not just the job of women, for it to really work you need a network made up of governments, families, local communities, workplaces and health systems [23]. Pharmacists are listed among the health workers who should comply the international code of marketing of breast milk substitutes, which was established by the World Health Assembly (WHA) in 1981 [24]. Reports listed pharmacists in pharmacies as the target for breastmilk substitutes marketing where the code violations could occur [25]. In the current study, the most encouraging results, but also the most surprising, was the high percentage of pharmacists who perceived that having a written policy on feeding infants and young children according to the recommendations of the WHO and in compliance with the international code (step 1), informing all pregnant women about the benefits of breastfeeding and the disadvantages of artificial feeding (step 3), and training all pharmacy staff to develop skills necessary to apply such policies (step 2) were the most common steps to describe a pharmacy for being BFPh. This might be due to pharmacists accepting commitments and believing in the importance of the international code in protecting families from commercial incentives.

**Table 3.** Assessment of factors affecting pharmacists' awareness about breastfeeding friendly pharmacy (n=381)

Parameters	Awareness score			
	Using simple linear regression		Using simple linear regression	
	Beta	p-value	Beta	p-value
Age				
≤40	Reference: -0.098	0.057‡	-0.103	0.045*
>40				
Gender				
Male	Reference: 0.024	0.646	---	---
Female				
Marital status				
Married	Reference: -0.017	0.734	---	---
Non-married (single, widowed, or divorced)				
Having children				
Yes	Reference: 0.001	0.990	---	---
No				
Years of practices				
<5 years	Reference: -0.045	0.385	---	---
≥5 years				
Highest degree				
BPharm/Pharm D	Reference: -0.059	0.249‡	0.067	0.191
Graduate degree (MSc and PhD)				
Work location				
Rural (village)	Reference: -0.044	0.396	---	---
Urban (city)				
Pharmacy type				
Independent pharmacy	Reference: 0.012	0.816	---	---
Chain pharmacy				
Having breastfeeding experience†				
Yes	Reference: -0.003	0.959‡	---	---
No				
Promotion of breastfeeding in your pharmacy				
Yes	Reference: -0.056	0.280	---	---
No				

Note. †For the purposes of this survey, personal experience in breastfeeding is defined as having breastfed yourself; or having a spouse/partner (wife) who has breastfed; or have a family member who has breastfed, with whom you have spent significant time, including overnight, while they were breastfeeding; ‡Eligible for entry into multiple logistic regression; & †Significant at 0.05 significance level

Although, a recent systemic review displayed that violations of the code have not stopped, and the WHA and national governments must pay closer attention to preserve the health of infants and their mothers [25]. Further research on the awareness of pharmacists about the international code and prevalence of its violations among Jordanian pharmacists.

On the other hand, the current study found that only few pharmacists perceived that acquiring breastmilk substitutes without adhering to promotional discount campaigns and refusing to give mothers promotional gadgets (step 8) and providing and selling breastmilk substitutes only when specifically requested (step 7) were required to describe a pharmacy as BFPh. The situation appears to be promising on one hand but critical on the other. One of the key physical element that challenges the supportive environment for breastfeeding is the aggressive marketing of breastmilk substitutes and bottles, which contributes to suboptimal breastfeeding [7]. In Jordan, the health-care system is divided into two sectors: the public/semipublic sector and the private sector [26]. Community pharmacies are part of the private sector. Because of their widespread distribution in cities, in 2022, there are 4,296 community pharmacies spread across Jordan [27], pharmacists have become the most accessible points of contact for people dealing with the health-care system [28]. Community pharmacists play an essential yet dual role in Jordan's healthcare system. This is especially evident when it comes to providing breastfeeding advice and breastmilk replacements. While pharmacists are one of the

most trusted and accessible primary care providers for breastfeeding mothers and their families, pharmacies are also businesses that rely on front-of-store income to stay afloat [29]. A previous report found that pharmacists identified breastfeeding-related inquiries and infant nutrition as a significant aspect of their pharmacy practice. Nevertheless, other replies expressed concern about the current lack of compensation capacity. This raises the issue of competing interests between commercial concerns and best practices in breastfeeding support [29]. By rewarding the pharmacists for their breastfeeding advice, this conflict of interest may be eliminated. A previous report in [30] revealed that one in four Jordanians can recall going to their community pharmacy for services unrelated to medications. Additionally, 50% of the respondents reported they receive these services for free, and 37.4% reported they would be happy to pay for these services in the future [30].

The nine-step BFPh project was successfully carried out in 2007 at an Italian pharmacy [18]. The foundation of BFPh project is a network of mothers, pediatricians, and pharmacists who collaborate to promote breastfeeding exclusivity, initiation, and duration. The project has yield promising results [18]. In the current study, we found that pharmacists who aging 40 years or less showed a significantly higher awareness about BFPh requirements compared to those aging above 40 years. This could be attributed to the fact that higher percentages of those having breastfeeding experience or having infants and young children belong to this age category compared to the

older ones. Furthermore, more than one-third of pharmacists perceived that answering general questions or concerns on medication intake while breastfeeding babies and giving advice for the mothers regarding breastfeeding are their major role in breastfeeding support. This was expected, since that pharmacists are medication professionals with the necessary skills to deliver correct medication information and exact patient education based on the risk-benefit ratio, particularly for breastfeeding women [31]. Despite the several studies that addressed pharmacists' possible roles in supporting breastfeeding [20, 32], their enrolment in this role not adequately studied in Jordan.

This study represented the first effort in assessing the pharmacists' perception of the BFPh steps and requirements that must be met to describe pharmacy as a BFPh. Through awareness campaigns and continuous educational workshops supported by specialized government agencies, Jordanian pharmacists may become more aware of the importance of breastfeeding assistance and working in environments (pharmacies) that respect one of the mother's and child's rights. Furthermore, collaborating with lactation consultants, nursing, and pharmacy practitioners can be beneficial. The results of the current study can be applied to other Middle Eastern countries that share similar cultural backgrounds. The first limitation of this study was the participant self-selection process. The survey was conducted online due to the novel coronavirus pandemic that started around January of 2020. Hence, only people who use the Internet and other social media platforms were able to participate. Moreover, all information in this study was obtained through self-report method. There may be inaccurate "social desirability" responses or recall difficulties. However, it is hoped that the anonymity of the questionnaire encouraged honesty.

## CONCLUSION

Breastfeeding support is a promising area for promoting professional pharmacy services and pharmacists' ability to provide trustworthy, precise, and evidence-based advice and support to breastfeeding mothers. Training all pharmacy staff and informing all pregnant about the benefit of breastfeeding are the most common two steps to describe a pharmacy as BFPh. Additionally, the awareness of BFPh requirement was associated with pharmacists age. Future focus should be placed on implementing BFPh project in Jordanian pharmacies, where the steps of this project are modified in line with the capabilities of pharmacies in Jordan within governmental pharmaceutical control.

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**Ethical statement:** Authors stated that the ethical approval for the study was obtained from the Institutional Review Board of King Abdullah University Hospital, University of Science & Technology, Jordan (Reference No. 56/141/2021).

**Declaration of interest:** No conflict of interest is declared by authors.

**Data sharing statement:** Data supporting the findings and conclusions are available upon request from the corresponding author.

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