

Supplementary Information

Questionnaire data collection tool (English and Arabic versions)

English version

Questionnaire

Part 1: The following questions are about sociodemographic and work-related:

1. Age: years
2. Place of residency: North Gaza, Gaza, Midzone , Khan Younis , Rafah.
3. Academic qualification: Diploma 2 years , Diploma 3 years , Bachelor's degree , Master's degree , PhD
4. Years of experience:
5. Name of clinic:
6. Have you ever received any lectures or courses on drug effects on breastfeeding?
 Yes No

If yes, please specify according to the table below

Course	Organization

Part 2: The following items relate to knowledge about drugs affecting breastfeeding

No.	Items	Yes	No
1.	Taking a drug during breastfeeding is safe.		
2.	Some drugs affect the amount of milk for the baby.		
3.	Almost all drugs transfer into breast milk, and this may carry a risk to breastfeeding.		
4.	Some drugs should be stopped during breastfeeding.		
5.	Antiemetic drugs such as metoclopramide (Pramin) increase the amount of milk the baby receives.		
6.	The benefits of breastfeeding continue if mothers avoid using drugs.		
7.	Prolactin is affected by the use of some drugs during breastfeeding.		
8.	Drugs can affect milk secretion or composition by affecting mammary gland development and milk secretion.		

9.	Antihistamines are considered to be safe.		
10.	Anticonvulsants are considered unsafe during breastfeeding.		
11.	Anticoagulants such as heparin are considered and do not cross into breast milk.		
12.	Antibiotics, such as tetracyclines, affect bone growth.		
13.	Avoid taking aspirin during breastfeeding due to the risk of Reye's syndrome.		
14.	Have access to resources about drug safety on breastfeeding.		
15.	Analgesics such as paracetamol (Acamol) affect breastfeeding.		
16.	ibuprofen (Trufen) effect on the taste of milk for the baby		
17.	Some mothers need to use drugs during breastfeeding.		
18.	Transfer some drugs from maternal plasma to milk		
19.	Have good information about drugs affecting breastfeeding.		

Part 3: The following items relate to attitudes towards drugs affecting breastfeeding.

No.	Items	Agree	Not sure	Disagree
1.	Workload pressure prohibits me from giving information about drugs affecting breastfeeding.			
2.	The effect of drugs on breastfeeding is a problem for the baby.			
3.	Health Education is the best way to decrease the harmful effects of drugs on breastfeeding.			
4.	Nursing counselling is the best way to decrease the harmful effects of drugs on breastfeeding.			
5.	Women should be encouraged to avoid over-the-counter drugs during breastfeeding.			
6.	Drugs affecting breastfeeding should be included in the clinic's guide.			
7.	Service provided by health education and nursing counselling is adequate for women about the effects of drugs on breastfeeding.			
8.	There is a relationship between the income of the family and drug use during breastfeeding.			

9.	There is a relationship between a mother's educational level and drugs.			
10.	There is a relationship between the number of births and attitudes about the effect of breastfeeding on drugs.			
11.	Would you like to conduct training courses on drugs affecting breastfeeding			

Note: The questionnaire is presented as administered. Minor linguistic irregularities in the English version reflect the original study instrument and its close translation from the Arabic interviewer-administered version.

Arabic version

الاستبانة

الجزء الاول : المعلومات الشخصية:

1. العمر:
2. مكان السكن: شمال غزة غزة الوسطى خان يونس رفح.
3. المؤهل العلمي: دبلوم سنتين دبلوم 3 سنوات بكالوريوس ماجستير دكتوراه .
4. سنوات الخبرة:
5. اسم العيادة:
6. هل سبق لك أن تلقيت أي محاضرة أو دورة عن الأدوية التي تؤثر على الرضاعة الطبيعية؟

لا نعم

إذا كانت الإجابة بنعم، يرجى تحديدها وفقًا للجدول أدناه:

الدورة	المؤسسة

الجزء الثاني: العناصر التالية حول (معرفة الممرضات حول الأدوية التي تؤثر على الرضاعة الطبيعية):

الرقم	العنصر	نعم	لا
1	العديد من الأدوية آمنة أثناء الرضاعة الطبيعية		
2	تؤثر بعض الأدوية على كمية الحليب للرضيع.		
3	جميع الأدوية تنتقل إلى حليب الثدي وهذا قد يحمل خطرا على الرضيع.		
4	يجب إيقاف بعض الأدوية أثناء الرضاعة الطبيعية.		
5	تزيد الأدوية المضادة للتقيؤ مثل البرامين من كمية الحليب للرضيع.		
6	تزيد فوائد الرضاعة الطبيعية إذا تجنبت الأم استخدام الادوية.		
7	هرمون الحليب يتأثر ببعض الأدوية المستخدمة أثناء الرضاعة.		
8	يمكن أن تؤثر الأدوية على إفراز الحليب أو تركيبه من خلال التأثير على نمو الغدة الثديية وإفراز الحليب.		
9	الأدوية المضادة للحساسية آمنة أثناء الرضاعة.		
10	ادوية التشنج غير آمنة أثناء الرضاعة الطبيعية.		
11	الأدوية مانعة التجلط مثل: الهيبارين آمنة ولا تؤثر على حليب الثدي.		
12	يؤثر المضاد الحيوي التتراسيكلين على نمو العظام عند الرضيع.		
13	تجنب تناول الأسبرين أثناء الرضاعة لأنه يسبب Rye's syndrome للرضيع.		
14	صعب الوصول إلى المراجع حول الادوية المؤثرة على الرضاعة الطبيعية.		
15	المسكنات مثل الاكامول آمنة أثناء الرضاعة .		
16	يؤثر التروفين على طعم الحليب للرضيع .		
17	تحتاج بعض الأمهات إلى استخدام الأدوية أثناء الرضاعة الطبيعية.		
18	يتم نقل بعض الأدوية من بلازما الأم إلى الحليب .		
19	لدي معلومات جيدة عن الأدوية التي تؤثر على الرضاعة الطبيعية.		

الجزء الثالث: العناصر التالية حول (اتجاهات الممرضات حول الأدوية التي تؤثر على الرضاعة الطبيعية)

1.	ضغط العمل يؤثر من إعطاء معلومات (للأم) عن الأدوية التي تؤثر على الرضاعة الطبيعية.
2.	تأثير الأدوية على الرضاعة الطبيعية يمثل مشكلة بالنسبة لحليب الأم.
3.	التثقيف الصحي هو أفضل وسيلة لتقليل استخدام الأدوية التي تؤثر على حليب الأم
4.	الاستشارة التمرضية هي أفضل وسيلة لتقليل استخدام الادوية أثناء الرضاعة الطبيعية.
5.	تشجيع النساء على تجنب استخدام الأدوية التي تؤثر على الرضاعة الطبيعية
6.	ارغب في تضمين الأدوية التي تؤثر على الرضاعة الطبيعية في دليل العيادات.
7.	الخدمة المقدمة من التثقيف الصحي والاستشارة التمرضية كافية للنساء حول الأدوية التي تؤثر على الرضاعة الطبيعية.
8.	هناك علاقة بين دخل الأسرة وكثرة استخدام الدواء أثناء الرضاعة الطبيعية.
9.	تعتقد هناك علاقة للمستوي التعليمي للأم حول الأدوية المؤثرة على الرضاعة الطبيعية.
10.	هناك علاقة بين عدد الولادات للأم واتجاهاتها حول الأدوية المؤثرة على الرضاعة الطبيعية.
11.	ارغب في إجراء دورات تدريبية أثناء العمل حول الأدوية التي تؤثر على الرضاعة الطبيعية.

Table S1 Distribution of the total PHCC nursing workforce and achieved sample by governorate

Residency	Total PHCC nursing workforce by region*	Sample
North	78	22
Gaza	113	42
Midzone	109	18
Khan Younis	50	36
Rafah	44	32
Total	394	150

*Population column refers to the total governmental PHCC nursing workforce by governorate, whereas the eligible study population comprised 194 female nurses

Table S2 Knowledge of study participants (n=150) regarding drug safety in breastfeeding

No	Item	Yes		No		Rank
		N	%	N	%	
1.	Taking drugs during breastfeeding is safe.	67	44.7	83	55.3	7
2.	Some drugs affect the amount of milk for the baby.	32	21.3	118	78.7	13
3.	Almost all drugs transfer into breast milk, and this may carry a risk to breastfeeding.	95	63.3	55	36.7	4
4.	Some drugs should be stopped during breastfeeding.	22	14.7	128	85.3	17
5.	Antiemetic drugs such as metoclopramide (Pramin) increase the amount of milk the baby receives.	103	68.7	47	31.3	2
6.	The benefits of breastfeeding continue if mothers avoid using drugs.	24	16.0	126	84.0	16
7.	Prolactin is affected by the use of some drugs during breastfeeding.	18	12.0	132	88.0	19

8.	Drugs can affect milk secretion or composition by affecting mammary gland development and milk secretion.	150	100.0	0	0	1
9.	Antihistamines are considered to be safe.	46	30.7	104	69.3	10
10.	Anticonvulsants are considered unsafe during breastfeeding.	46	30.7	104	69.3	10
11.	Anticoagulants such as heparin are considered and do not cross into breast milk.	28	18.7	122	81.3	15
12.	Antibiotics: Tetracyclines effect on bone growth.	57	38.0	93	62.0	9
13.	Avoid taking aspirin during breastfeeding due to the risk of Reye's syndrome.	89	59.3	61	40.7	6
14.	You have access to resources about drug safety in breastfeeding.	20	13.3	130	86.7	18
15.	Analgesics such as paracetamol affect breastfeeding.	99	66.0	51	34.0	3
16.	ibuprofen (Trufen) effect on the taste of milk for the baby	36	24.0	114	76.0	12
17.	Some mothers need to use drugs during breastfeeding.	31	20.7	119	79.3	14
18.	Transfer some drugs from maternal plasma to milk	95	63.3	55	36.7	4
19.	have good information about drugs affecting breastfeeding.	67	44.7	83	55.3	7

Table S3 Attitudes of study participants (n=150) regarding drugs in breastfeeding

No.	Item	Disagree		Not sure		Agree		Rank
		N	%	N	%	N	%	
1.	Workload pressure prohibits me from giving information about drugs affecting breastfeeding.	33	22.0	19	12.7	98	65.3	9
2.	The effect of drugs on breastfeeding is a problem for the baby.	10	6.7	26	17.3	114	76.0	7
3.	Health Education is the best way to decrease the harmful effects of drugs on breastfeeding.	0	0	2	1.3	148	98.7	1
4.	Nursing counselling is the best way to decrease the harmful effects of drugs on breastfeeding.	9	6.0	19	12.7	122	81.3	6
5.	Women should be encouraged to avoid over-the-counter drugs during breastfeeding.	1	0.7	4	2.7	145	96.7	2
6.	Drugs affecting breastfeeding should be included in the clinic's guide*.	1	0.7	5	3.3	144	96.0	3
7.	Service provided by health education and nursing counselling is adequate for women about the effects of drugs on breastfeeding.	56	37.3	47	31.3	47	31.3	11
8.	There is a relationship between the income of the family and drug use during breastfeeding.	94	62.7	0	0	56	37.3	10

9.	There is a relationship between a mother's educational level and drugs.	26	17.3	0	0	124	82.7	5
10.	There is a relationship between the number of births and attitudes about the effect of breastfeeding on drugs.	47	31.3	0	0	103	68.7	8
11.	Would you like to conduct training courses on drugs affecting breastfeeding	3	2.0	5	3.3	142	94.7	4

*Note. "clinic's guide" refers to the written clinic guide or manual used by staff in primary healthcare clinics.

Table S4: Differences in knowledge about drugs affecting breastfeeding and selected variables (n= 150)

Variable	N	Mean score	SD	Test statistic	P value
Age					
30 years and below	10	38.4	8.2	0.411	0.664
31 - 40 years	75	34.3	13.0		
41 years and above	65	34.9	13.9		
Place of residency					
North Gaza	26	33.2	12.4	1.791	0.134
Gaza	31	40.0	12.4		
Midzone	25	35.1	14.4		
Khan Younis	33	34.1	12.4		
Rafah	35	32.0	13.4		
Qualification					
Diploma 2 years	48	35.3	13.6	0.131	0.942
Diploma 3 years	30	33.8	14.8		
BSN	60	34.7	12.2		
Master	12	36.4	12.3		
Years of experience					
10 years or less	28	35.9	10.5	0.106	0.899
11 – 20 years	84	34.5	13.7		
21 years and more	38	34.7	13.7		
Address of the clinic					
North Gaza	22	33.7	12.5	2.210	0.071
Gaza	42	38.9	14.1		
Midzone	18	32.7	11.1		
Khan Younis	36	35.8	12.8		
Rafah	32	30.4	12.5		
Had a training course (t- test)					
No	130	34.9	13.5	0.050	0.960
Yes	20	34.7	11.2		

Table S5: Differences in attitudes about drugs affecting breastfeeding and selected variables (n= 150)

Variable	N	Mean score	SD	Test statistic	P value
Years of experience					
10 years or less	28	80.5	10.4	2.343	0.100
11 – 20 years	84	74.1	13.7		
21 years and more	38	74.1	16.8		
Address of the clinic					
North Gaza	22	66.9	12.0	4.434	0.002*
Gaza	42	75.7	14.8		
Midzone	18	69.6	18.9		
Khan Younis	36	80.3	10.0		
Rafah	32	78.1	14.1		
Had a training course (t-test)					
No	130	74.6	14.7	2.524	0.114
Yes	20	80.0	8.1		

Variable	N	Mean score	SD	Test statistic	P value
Age					
30 years and below	10	80.9	10.0	0.872	0.420
31 - 40 years	75	75.2	13.3		
41 years and above	65	74.5	15.5		
Place of residency					
North Gaza	26	69.5	12.5	4.270	0.003*
Gaza	31	75.9	15.6		
Midzone	25	69.4	17.3		
Khan Younis	33	81.5	9.7		
Rafah	35	77.4	12.3		
Qualification					
Diploma 2 years	48	73.8	14.4	1.029	0.382
Diploma 3 years	30	75.7	17.7		
BSN	60	77.2	12.1		
Master	12	70.4	13.4		

* Significant $P \leq 0.05$

Table S6. Correlation between knowledge and attitudes

Domain	Attitude	
	r	P-value
Knowledge	0.236	0.004*

* Significant $P \leq 0.05$

Table S7. Effect of knowledge on attitude (Simple linear regressions)

	R	R ²	Adjusted R ²	SE	F	P-value
Model	0.236	0.056	.049	2.1	8.714	0.004*

* Significant $P \leq 0.05$

Table S8. Simple linear regression model and equation to test effect of knowledge on attitude among participants

	B	SE	Beta	t	P-value	95% CI	
						Lower	Upper
Constant	25.204	2.100		12.005	< .001	21.05	29.36
Knowledge	0.217	0.074	0.236	2.952	0.004	0.07	0.36

Table S9. Exploratory multivariable linear regression model for knowledge score

Higher scores indicate higher knowledge in the reverse-oriented adjusted analysis. Reference categories: age 31–40 years; qualification Bachelor's degree; experience 11–20 years; clinic address Gaza; prior training No.

Predictor	β (95% CI)	P value
Age: 30 years and below vs 31–40 years	-3.1 (-9.4 to 3.1)	0.322
Age: 41 years and above vs 31–40 years	-2.8 (-9.9 to 4.2)	0.427
Qualification: Diploma 2 years vs Bachelor's degree	-0.2 (-5.5 to 5.2)	0.954
Qualification: Diploma 3 years vs Bachelor's degree	1.7 (-6.6 to 10.0)	0.684
Qualification: Master's degree vs Bachelor's degree	-1.3 (-9.7 to 7.0)	0.751
Experience: 10 years and less vs 11–20 years	-1.4 (-7.4 to 4.7)	0.653
Experience: 21 years and more vs 11–20 years	-0.4 (-8.5 to 7.6)	0.919
Clinic address: Khan Younis vs Gaza	2.8 (-4.3 to 9.9)	0.436
Clinic address: Midzone vs Gaza	6.1 (-1.5 to 13.6)	0.116
Clinic address: North Gaza vs Gaza	5.7 (-1.8 to 13.1)	0.137
Clinic address: Rafah vs Gaza	9.3 (2.7 to 16.0)	0.007*
Prior training: Yes vs No	1.1 (-5.7 to 7.9)	0.751

Note: Model $R^2 = 0.072$; adjusted $R^2 = -0.010$; overall $p = 0.437$.

Table S10. Exploratory multivariable linear regression model for attitude score

Reference categories: age 31–40 years; qualification Bachelor's degree; experience 11–20 years; clinic address Gaza; prior training No.

Predictor	β (95% CI)	P value
Age: 30 years and below vs 31–40 years	1.5 (-6.4 to 9.4)	0.706
Age: 41 years and above vs 31–40 years	4.5 (-1.8 to 10.8)	0.158
Qualification: Diploma 2 years vs Bachelor's degree	-1.9 (-7.1 to 3.4)	0.479
Qualification: Diploma 3 years vs Bachelor's degree	2.1 (-4.8 to 8.9)	0.549
Qualification: Master's degree vs Bachelor's degree	-6.5 (-15.8 to 2.8)	0.172
Experience: 10 years and less vs 11–20 years	8.4 (1.8 to 15.1)	0.014*

Experience: 21 years and more vs 11–20 years	-3.3 (-10.8 to 4.2)	0.389
Clinic address: Khan Younis vs Gaza	2.6 (-2.9 to 8.1)	0.355
Clinic address: Midzone vs Gaza	-8.9 (-19.0 to 1.3)	0.087
Clinic address: North Gaza vs Gaza	-11.4 (-18.8 to -3.9)	0.003*
Clinic address: Rafah vs Gaza	0.4 (-6.0 to 6.7)	0.911
Prior training: Yes vs No	3.8 (-0.7 to 8.3)	0.098
Adjusted knowledge score, per 1-point increase	0.28 (0.09 to 0.47)	0.004*

Note: Model $R^2 = 0.246$; adjusted $R^2 = 0.174$; overall $p < 0.001$.

Table S11. Positioning of the present study in relation to selected published studies on healthcare professionals' knowledge, attitudes, or information use regarding medication use during breastfeeding

Study	Country/setting	Participant group	Main focus	What is distinctive about the present study
Hussainy and Dermele (2011) [26]	Review of published literature	Health professionals and women	Knowledge, attitudes and practices regarding medication use in breastfeeding	The present study adds primary data from governmental primary care nurses in Gaza and examines not only knowledge and attitudes, but also perceived access to medicines-information resources and adequacy of counselling.
De Ponti et al. (2015) [25]	Australia	Community pharmacists	Perspectives on medication use and safety during breastfeeding	The present study focuses on nurses rather than pharmacists, is situated in governmental PHCCs, and examines frontline breastfeeding support in a conflict-affected and resource-constrained primary care setting.
Al-Sawalha NA et al. (2017) [32]	Jordan	Healthcare providers, including nurses	Knowledge and attitudes regarding medication use in breastfeeding women	The present study focuses specifically on governmental primary care nurses in Gaza and extends the analysis by emphasising medicines-information access, perceived counselling adequacy and systems-level implications for breastfeeding support.
Present study	Gaza, governmental PHCCs	Female primary care nurses	Knowledge, attitudes, access to medicines information, and implications for breastfeeding support	Distinctive features include focus on governmental primary care nurses, a conflict-affected setting, explicit attention to access to medicines-information resources, and interpretation of the findings as a service-capacity gap rather than a simple deficit in professional attitudes.