

Improving access to quality contraceptive counselling in community pharmacy: Examining the knowledge, attitudes and practices of community pharmacists in Australia

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Abbreviations

DPA: Distribution Priority Area; ECP: Emergency contraceptive pill; IRSD: Index of Relative Socioeconomic Disadvantage; IUD: intrauterine device; LARC: long-acting reversible contraception; LNG: levonorgestrel; UPA: Ulipristal acetate; MMM: Modified Monash Model; SRH: Sexual and reproductive health

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Competing interests

DM has received research funding, travel grants and honorarium from Bayer. The other authors have no conflict of interest to declare.

Contributorship

PB: conceptualisation (lead); methodology (lead); writing – original draft (lead). SH, JS, WVN, DB, DM: conceptualisation (supporting); methodology (supporting); writing – review and editing (equal).

Ethics

Ethics approval to undertake this research was obtained from Monash University Human Research Ethics Committee (project identification #21105)

Data sharing

De-identified data available for secondary analysis upon request

Abstract

Background

Across most of Australia, community pharmacists' role in contraceptive care has been unchanged since 2004. To understand their current scope of practice and potential for practice advancements, we examined community pharmacists' contraceptive knowledge and their attitudes, practices and perceived barriers to and benefits of contraceptive counselling provision.

Methods

A nationwide postal survey was conducted between September and December 2020. We contacted a state/territory-stratified sample of 2,149 community pharmacies and limited eligibility to one pharmacist per pharmacy. Summary statistics of respondent characteristics and parametric (Chi-Square, linear regression) and non-parametric (Mann-Whitney, logistic regression) tests were computed for the outcomes: practices, knowledge (reported and tested), confidence, attitudes, barriers and benefits.

Results

Eligible responses were received from 366 pharmacies (19%). Pharmacists' median pharmacist was 34. Pharmacists (85%) agreed that contraceptive counselling fits within their current professional activities and emphasised benefits to their patients including improved access to contraceptive decision support (80%) as being key motivators of counselling. A lack of payment mechanisms (66%), training opportunities (55%) and technical assistance tools (54%) were the most important barriers. Self-rated knowledge and confidence were highest for combined oral contraceptive pills and lowest for the copper intrauterine device (IUD). When tested, pharmacists were very knowledgeable about method dosage frequencies and costs and relatively less knowledgeable about side-effects and IUD suitability for adolescents.

Conclusions

Community pharmacists provide contraceptive information but lack the necessary resources and support to meet their patients' contraceptive counselling and information needs. Remuneration mechanisms, training opportunities and pharmacy-specific professional resources need to be explored.

What is already known on this topic – Community pharmacists in Australia dispense emergency contraceptive pills over-the-counter but often forego discussing ongoing contraception at this potentially crucial time. There is a need to determine pharmacists' current scope of practice and how best to support pharmacists taking on a greater role in contraceptive care.

What this study adds – Pharmacists working in areas with general practitioner shortages had the highest odds of advanced accreditation and a private consultation room in their pharmacy, highlighting an opportunity for these pharmacists to improve access to contraceptive counselling and methods in currently underserved communities. Most also held positive perceptions of contraceptive counselling provision but described key barriers including a lack of adequate education, professional resources and remuneration for contraceptive counselling consultations.

How this study might affect research, practice or policy – Contraceptive counselling provision could be a key focus of future contraceptive care advancements in Australian community pharmacy. To implement contraceptive counselling in pharmacy practice and address the barriers described, changes are first required at the level of policy (e.g. federal pharmacy funding agreements, medicine rebates), pharmacy curricula and further professional development opportunities.

INTRODUCTION

Community pharmacists across North America and Europe have improved sexual and reproductive health (SRH) care access through recent developments in *task-sharing*,^[1-3] where certain health professionals adopt extended patient care roles.^[4] These community pharmacy task-sharing initiatives include pregnancy options counselling,^[1] interventions integrating contraceptive care across community pharmacy and clinic-based services,^[2] and legislative amendments providing pharmacists with practice licensing authority to dispense hormonal contraception without a physician's prescription.^[2, 3]

Meanwhile, community pharmacists in Australia are highly trained, some of the most equitably distributed health professionals across the country,[5] and the third-most visited by young people.[6] The levonorgestrel (LNG) emergency contraceptive pill (ECP) was downregulated from prescription to over-the-counter status in 2004 and, currently, both LNG and ulipristal acetate (UPA) ECPs can be purchased directly from supplying pharmacies (e.g. where stock is available and pharmacists do not conscientiously object). Any pharmacist can also register to become a certified medical abortion (mifepristone and misoprostol regimen) dispenser, with a physician's prescription. However, pharmacists' contraceptive care scope of practice has not advanced in several years: Attempts to amend medicines regulation for oral contraceptive pills, thereby making them more accessible through pharmacies, have so far been unsuccessful.[7] Because of these challenges, contraceptive counselling provision could be a viable focus of future pharmacy practice advancements in the Australian context.

Community pharmacies and pharmacists have been recognised as important settings and providers for improving access to contraceptive counselling, a central component of holistic and person-centred contraceptive care.[8, 9] While the provision of information about ongoing contraception is a recommended component of ECP dispensing,[10] data on the usual content of ECP and medical abortion consultations, and referral for follow-up care, are limited. In two previous studies, pharmacists inconsistently discussed ongoing contraception during ECP consultations;[11, 12] yet 82% of 427 pharmacists surveyed in 2008 agreed this task was part of their professional role.[13] These contradictory findings may infer potential limitations to a pharmacist's contraceptive care skillset and/or logistical barriers to provision. Their competency and capacity to provide person-centred contraceptive counselling requires further investigation.

We undertook a nationwide cross-sectional survey to examine community pharmacists' knowledge, attitudes towards contraceptive counselling provision, practices, and perceived barriers and benefits of providing this service.

METHODS

Patient and public involvement

Patients were not involved in any aspect of this research. Ten pharmacists and pharmacy/primary care researchers piloted the survey prior to finalisation.

Design, setting and participants

In 2019, Saha *et. al.*[14] compiled a database of the postal addresses of >3000 out of 5700 pharmacies across Australia[15] using publicly available information from Yellow Pages telephone and Google directories. We employed pharmacy-level sampling and limited participation to one pharmacist per pharmacy, to gain an understanding of the availability and average quality of contraceptive counselling across pharmacies nationwide. Based on prior research findings[11-13] and our professional knowledge of community pharmacy practice we estimated that at any given time, the pharmacist/s on duty at >50% of pharmacies would have contraceptive counselling provision within their scope of practice. A sample size of 360 would provide a 5% margin of error and 95% level of confidence for this outcome. We anticipated an 18% participation rate—lower than that attained in prior surveys,[13, 14] due to the Covid-19 pandemic—and employed a stratified sampling strategy to randomly select 2149 pharmacies across the six states and two territories of Australia (Appendix 1).

Survey development

We developed a survey guided by expert opinion and prior surveys.[13, 16, 17] To determine pharmacists' innovation adoption practices according to Rogers' Diffusion of Innovations theory,[18] pharmacists were asked to self-identify their willingness to adopt new clinical initiatives in a question that was previously implemented and validated question among community pharmacists in British Columbia, Canada.[16, 17]

- *innovators* actively seek and are the first to adopt new initiatives[18] (*"I actively seek out new clinical initiatives to integrate into my practice"*);
- *early adopters* are often opinion leaders and embrace change opportunities without hesitation[18] (*"I play an active role in implementing new clinical initiatives and am one of the first among my peers to try these new services"*);

- *early majority* are among the first to adopt initiatives but are usually not leaders and may need to see evidence of innovation benefits prior to adoption[18] (“*I wait for my peers to try out new clinical services prior to adopting the service myself*”);
- *late majority* are sceptical of change and will only adopt initiatives after they have been adopted by the majority[18] (“*I do not provide new clinical services unless it is required (e.g. by corporate policies or to perform my job as a pharmacist)*”);
- *laggards* are averse to change and highly conservative[18] (“*I prefer not to change my practice*”)

The final survey after piloting included 20 multiple-choice questions plus a definition of contraceptive counselling. The Pharmaceutical Society of Australia (PSA), the national professional pharmacy organisation representing all pharmacy sectors, and the Pharmacy Guild of Australia, an organisation for community pharmacy owners, endorsed the survey prior to distribution.

The final survey collected the following quantitative data:

- pharmacist and pharmacy characteristics;
- *assessed knowledge* about contraceptive side-effects, duration, cost, effectiveness, and contraindications/safety (seven multiple-choice questions: true, false or unsure response options);
- *self-rated knowledge* about each contraceptive method available in Australia (5-point Likert scale);
- *confidence* in counselling about each of these methods (5-point Likert scale);
- *attitudes*, perceived *barriers* and *benefits* regarding contraceptive counselling (5-point Likert scale);
- *current practices*.

Respondents were invited to list additional barriers, benefits and further comments in free text. We analysed and reported on these qualitative data elsewhere.

Data collection

Each pharmacy was given a unique code and mailed a paper survey labelled with their code, an explanatory statement and reply-paid envelope. A link to the online version

of the survey (REDCap [19]) was included the explanatory statement. The survey was sent to each pharmacy three times at two-week intervals as per Dillman's Tailored Design Method for surveys.[20] We recorded identification numbers of completed surveys to exclude duplicate responses and link eligible completed surveys with the geographical variables described below. Online survey data were downloaded and PB manually entered postal survey data and later checked these for accuracy. After completing the survey, participants could enter a \$100 gift card prize draw.

Statistical methods

Pharmacy identification codes were linked to postcodes and the following:

- Modified *Monash Model (MM) categories* of Australian locations from MM 1 (city) to MM 7 (very remote)[21]
- The Australian Institute of Health and Welfare *Index of Relative Socioeconomic Disadvantage (IRSD)* percentiles, [22] where locations with low IRSD percentiles have high relative socioeconomic disadvantage
- Health Workforce Locator *Distribution Priority Area (DPA)* [23] - identifies GP shortages based on number of GPs relative to community need (e.g. MM category and indices of socioeconomic advantage and disadvantage).

All analyses were computed in StataC 16.0.[24]. Cronbach's alpha (α) assessed responses to a repeated rephrased question, with α greater than or equal to 0.7 denoting acceptable internal consistency.[25] Shapiro-Wilk tests examined normality.

We computed frequency (%) for categorical variables and medians for ordinal skewed data. All Likert scales were recoded to categorical variables with "low", "moderate" and "high" categories. Self-rated contraception *knowledge* and counselling *confidence* were averaged across:

- *short duration* - combined oral contraceptive pill and progestogen only pill;
- *medium duration* - contraceptive ring and depo-medroxyprogesterone injection, and;
- *long-acting reversible contraception (LARC)* - levonorgestrel-releasing and copper-bearing intrauterine devices [IUDs] and contraceptive implant.

We computed *self-rated knowledge of short duration* compared to both *medium duration* and *LARC* methods using Pearson's chi-squared (X^2) tests. We computed odds (95% confidence interval) of correct versus incorrect or unsure responses to *knowledge test* questions. Using logistic regression, we cross-tabulated *attitudes*, comparing Diffusion of Innovations "adopter" groups; and *respondent characteristics*, comparing DPA and non-DPA pharmacies. Demographics were compared with the Pharmacy Board of Australia's 2021 registrant data [15] and Jackson *et. al.*[26] (X^2 ; Appendix 2), both of which characterise registered pharmacists in Australia but not community pharmacists specifically. Alpha was set at 5%.

RESULTS

Response rate

Approximately 1942 pharmacies of all 2149 in the sample received the survey, as uncompleted surveys of 207 pharmacies were returned-to-sender. A total of 368 completed surveys from 366 pharmacies (42 online; 326 paper-based) were received, with two surveys subsequently removed as duplicates. This number met our target response rate (18.8%: 366 eligible responses out of 1942 surveys received by pharmacies). Cronbach's alpha of 0.7 (acceptable internal consistency) was achieved when comparing positive attitudes to perceived benefits.

Pharmacy and pharmacist characteristics

Pharmacists had a median age of 34 (IQR=28-46) and nine years' practice in community pharmacy (IQR=4-19); most were women (n=228;63%), and almost half self-identified as innovators (n=140/40%; Table 1). The observed gender distribution reflects that of registered, currently-practicing pharmacists in Australia (Appendix 2), of whom 63% are women ($X^2=0.2$, $p=0.7$). Although 60% of Australian pharmacists are <40 years old, our sample was relatively young when compared to these national data ($X^2=14.1$, $p=0.003$).

The availability of a private consultation room did not differ between chain and independent pharmacies (OR=1.1, $p=0.09$). However, DPA pharmacies had higher odds of having a private consultation room than non-DPA (OR=2.0; 95%CI=1.1-3.4;

p=0.02). Pharmacists working in DPAs also had higher odds of being women (OR=1.9; 95%CI=1.2-3.0, p<0.01) and reporting attainment of further pharmacy-related accreditation after registering as a pharmacist (OR=1.7; 95%CI=1.1-2.8, p=0.03).

Practices

One-third (n=45/38%) of respondents reported at least a weekly request for contraceptive advice from patients. Pharmacists working in DPAs had lower odds of reporting daily requests for advice those in non-DPA pharmacies (OR=0.16, 95%CI=0.1-0.9; p=0.03). Counselling when dispensing ECPs (n=330/90%) and when patients asked questions about contraception (n=317/87%) were most frequently reported. Relatively few reported counselling when dispensing mifepristone + misoprostol for medical abortion (n=88/24%); however, the survey did not ask for dispensing registration status. One-third reported the current use of contraceptive counselling professional resources (n=104;30%), or willingness to actively implement (n=114;33%) or trial professional resources (n=111;32%) in their pharmacy.

Knowledge and confidence

Pharmacists reported a high level of *self-rated knowledge* about *short duration methods* at 2.4 times greater than *medium duration* ($X^2=192$; p<0.001) and 2.0 times greater than *LARC* ($X^2=116.0$; p<0.001). Similarly, low or no self-rated confidence was reported the most frequently for *medium duration* methods (n=75/21%;) and least frequently for *short duration* methods (n=8.2/2%). The copper-bearing IUD was rated lowest for both knowledge (n=122/34%) and confidence (n=117/33%) (Figure 1).

Pharmacists' *assessed knowledge* (Appendix 3) median score was 71% (IQR=57-86). The rate of correct responses was highest regarding contraceptive injection administration frequency (n=306/85% correct) and contraceptive implant costs (n=145/94% correct). Importantly, most (n=212/59%) lacked knowledge that IUDs are appropriate choices for teenagers. Over one-third also lacked knowledge about different bleeding changes during copper-bearing compared to levonorgestrel-releasing IUD use (n=139/40%), that intrauterine devices are more effective than oral contraceptive pills with typical use (n=135/38%), and that drospirenone-containing

combined contraceptives carry increased risk of venous thrombotic events compared to those containing levonorgestrel (n=129/37%).

Attitudes, benefits and barriers

Over 95% (n=340) agreed that contraceptive counselling was part of their professional role, but a smaller proportion agreed that contraceptive counselling would fit easily with existing activities (n=306/86%; $X^2=93.3$; $p<0.001$). All Diffusion of Innovations adopter groups had high agreement with positive statements about contraceptive counselling (Table 2). Compared to *laggards* and the *late majority*, *early adopters* and *innovators* agreed at higher rates that increased contraceptive counselling responsibilities would improve public perceptions of pharmacists (early adopters: OR=2.7, 95%CI=1.1-6.7, $p=0.03$; innovators: OR=5.1, 95%CI=2.0-13.1, $p=0.001$). Innovators also had lower odds of agreeing that implementation success would only occur if related tasks were not “tedious” (OR=0.5, 95%CI=0.2-0.9; $p=0.03$).

Improving patients’ access to information to enable informed decision-making (n=339/95%), improving their knowledge about pregnancy prevention (n=334/94%), and reducing health system pressure (n=287/80%; Figure 2) were the three most important professional benefits of counselling reported. Respondents regarded personal benefits, (e.g. job satisfaction as important benefit, n=229/64%) as a lower priority. The most important barriers to providing counselling were: a lack of remuneration (n=232/66%), training opportunities (n=195/55%) and technical assistance tools (n=194/54%). The least frequently reported barriers were resistance from the general public (n=104/29%) and a lack of interest from colleagues (n=79/22%).

DISCUSSION

Of the Australian community pharmacists surveyed, many felt that contraceptive counselling was an important part of their professional role: Most reported current provision and the benefits to patients and public health were the most influential motivators of adoption. However, this is not evidence of consistent, high-quality contraceptive counselling provision as pharmacists currently lack access to the

necessary training and resources to take on this role. These findings build on those of previous research where only one-third of pharmacists discussed ongoing contraception with a simulated patient obtaining emergency contraception.[11]

Community pharmacist provision of contraceptive counselling could increase access given that over one-third of respondents stated that a patient requests contraceptive advice at least once per week. DPA-employed pharmacists in particular could improve counselling provision and contraception access in currently underserved communities. These pharmacists the highest odds of having advanced accreditation, being women (who are usually preferred SRH providers[27] and comprise over two-thirds of the Australian pharmacy workforce[15]), and a private consultation room on pharmacy premises.

Respondents reported a high level of knowledge and confidence regarding the most frequently used contraceptives[28] and those most relevant to pharmacy practice—combined contraceptive pills. However, the low level of knowledge (tested and self-rated) and lack of confidence about some contraceptives and/or their attributes, suggests that pharmacists may have difficulty navigating person-centred consultations. Given limited opportunities for Australian pharmacists to develop skills in contraceptive care beyond undergraduate study, our findings align with previous research from the United States where most pharmacists described contraceptive education in pharmacy curricula as being inadequate to prepare them for contraception prescribing.[29]

Nevertheless, pharmacists provide clinical care for a range of issues on an opt-in basis, depending on feasibility, individual interest, training and competency.[30] They competently provide a range of SRH services when the appropriate training and resources are available.[1-4, 27, 31] Two-thirds of respondents were willing to implement or trial professional resources such as technical assistance tools, guidelines and decision aids. These resources can improve care quality and the implementation of tasks within existing workflow.[1,27] Additional information is required to gain an understanding of the resources that 30% of pharmacists reported current use of. Documenting and validating these resources' origin, educational

content and ease of access for pharmacies could further enhance their implementation.

A time and motion study of pharmacy workflow identified that Australian pharmacists spend the most time out of all professional tasks providing patient counselling.[32] Although 85% of pharmacists agreed contraceptive counselling fits within their existing tasks, a person-centred counselling session may not be a feasible option as only 45% of pharmacies had a private consultation room and these consultations can take up to 20 minutes.[31] A comprehensive service requires recognition of training and professionalism through payment for the consultation as per other healthcare professions. However, past implementation challenges resulted in funding for clinical service provision being deprioritised in the most recent Community Pharmacy Agreement.[33] This lack of funding would need to be addressed to increase staffing according to demand, as many patients visit pharmacies when logistical challenges limit access to their usual provider.[34] Payment mechanisms that do not burden patients with costs are essential.

Our findings are deduced from a sample of community pharmacists where over two-thirds of respondents self-identified as innovators/early adopters. Not only is this likely to represent a sampling bias towards those more open to new ideas and the latest information, but may also predict a relative lack of knowledge, competency and enthusiasm amongst the broader pharmacy workforce. Conversely, several rural pharmacists in previous Canadian contraception task-sharing research prided themselves on not being "the first" to adopt an innovation - they saw this "laggard" category as being appropriately cautious and doing their best to safeguard their patients.[16, 17]

The barriers and benefits as reported by respondents are however congruous with prior pharmacy research in the local context.[30] Furthermore, respondent characteristics were gender-representative of the broader pharmacist population across all sectors. Although we achieved our a priori sample size, our response rate was lower than 2019 survey research by Saha *et. al.*[14] with a similar sampling frame methodology. We estimate this and the attenuation of responses to the end of the

survey was due to the work-related stress reported by healthcare professionals during the COVID-19 pandemic.[35]

CONCLUSION

Community pharmacists report providing contraceptive information, are aware that pharmacist contraceptive counselling has benefits for patients and public health, and many are enthusiastic about an extended contraceptive care scope of practice. Further exploration of pharmacists' role in contraceptive care including remuneration mechanisms, training pathways and pharmacy-specific professional resources need to be explored to determine how best to support pharmacists taking on a greater role in contraceptive counselling.

Figure 1. Pharmacists' self-rated contraceptive knowledge and confidence in providing contraceptive counselling

COCP - combined oral contraceptive pill, POP – progestogen-only pill, LNG-IUD – levonorgestrel intrauterine device, Cu-IUD – copper-bearing intrauterine device

Figure 2. Pharmacist reported barriers to and benefits of providing (or potentially providing) contraceptive counselling, from most to least important

Percentage of ambivalent and 'not important' responses are not shown

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Table 1. Pharmacist demographic and pharmacy characteristics comparing those within and outside General Practice Workforce Distribution Priority Areas (DPAs)

	Pharmacy located in DPA		
	Yes (n=134)	No (n=231)	Total (n=366)
Pharmacists' characteristics			
Age (n=353):			
<30	36 (26.9)	75 (32.5)	111 (31.4)
30-39	42 (31.3)	78 (33.7)	120 (34.0)
40+	51 (38.1)	70 (30.3)	122 (34.6)
Median (95% CI)	35 (32.9-39)	34 (32.4-35)	34 (33-36)
Gender (n=361):			
Woman ^a	97 (72.4)	130 (56.3)	228 (63.2)
Man	36 (26.9)	92 (39.8)	128 (35.5)
Gender not listed / prefer not to say	0 (0.0)	5 (0.8)	5 (1.4)
Years practicing in Australia (n=353):			
≤5	40 (29.9)	83 (35.9)	123 (34.8)
6-15	43 (32.1)	77 (33.3)	120 (32.8)
>15	45 (33.6)	64 (27.7)	110 (30.1)
Median (95% CI)	9.5 (7-11)	9 (7-11)	9 (7-10)
Qualification when first registered as a pharmacist (n=359):			
Bachelor	-	-	265 (73.8)
Bachelor (Hons)	-	-	59 (16.4)
Master	-	-	30 (8.4)
PhD	-	-	3 (0.8)
Other	-	-	2 (0.6)
Completed further pharmacy-related study ^a (n=342)	43 (32.1)	50 (21.7)	93 (27.2)
Position in pharmacy ^b :			
Sole owner/Partner	-	-	75 (20.5)
Full time	-	-	221 (60.4)
Part time	-	-	59 (16.1)
Casual/contract/locum	-	-	22 (4.6)
Pharmacy characteristics			
Location (n=365):			
Metropolitan	18 (13.4)	197 (85.3)	215 (58.9)
Regional centre or large rural town	37 (27.6)	27 (11.7)	64 (17.5)
Medium or small rural town ^a	69 (51.5)	7 (3.0)	76 (20.8)
Remote or very remote community ^a	10 (7.5)	0 (0.0)	10 (2.7)
Type (n=364):			
Chain	71 (53.0)	123 (53.3)	195 (53.6)
Independent	62 (46.3)	107 (46.3)	169 (46.4)
Average number of full-time equivalent pharmacists on duty/day	2 (1.5-2)	2 (2)	2 (1-2.5)
Professional service room on premises (n=364):			
Yes ^a	77 (57.5)	91 (39.4)	168 (46.2)
No – patient counselling occurs at: differentiated prescription drop-off or pick-up area:	28 (20.9)	77 (33.3)	106 (29.1)

non-differentiated prescription drop-off/pick-up area:			
Other	25 (18.7)	58 (25.1)	83 (46.2)
Other	2 (1.5)	5 (2.2)	7 (1.9)
Frequency patients requested contraceptive advice/information during the past 6 months (n=362)			
Every day ^a	3 (2.2)	12 (5.2)	15 (4.1)
At least once per week	44 (32.8)	81 (35.1)	125 (34.5)
At least once per month	34 (26.1)	63 (28.0)	99 (27.4)
Less than once per month	43 (32.1)	60 (26.0)	103 (28.5)
Never	8 (6.0)	12 (5.2)	20 (5.5)
Respondent pharmacist practices			
Counselling in current practice ^b (n=362):	127 (94.8)	218 (94.4)	346 (95.6)
when dispensing ECP	117 (87.3)	212 (91.8)	330 (95.4)
when dispensing mifepristone & misoprostol (medical abortion) upon request	39 (29.1)	49 (21.2)	88 (25.4)
when patients discuss current contraception side effects/issues	118 (88.1)	198 (85.7)	317 (91.6)
when providing information about other related products (e.g. pregnancy tests)	108 (80.6)	182 (78.8)	290 (83.8)
other (free-text responses)	60 (44.8)	97 (42.0)	158 (39.9)
New contraceptive therapies/switching method/when regular pill isn't available (e.g. due to shortage)	18 (13.4)	26 (11.3)	44 (12.7)
When patients/partners request advice about missed pills or what to do after 'unprotected' sex	15 (83.3)	20 (76.9)	35 (79.5)
Hypothetically would do so when dispensing medical abortion but either not registered or have had no requests	0 (0.0)	3 (11.5)	3 (6.8)
For friends, relatives (informally)	1 (5.6)	1 (3.8)	2 (4.6)
For friends, relatives (informally)	0 (0.0)	1 (3.8)	1 (2.3)
Use of professional resources (e.g. protocols or decision-making tools) during contraceptive counselling (n=351)			
Currently uses	35 (26.1)	69 (29.9)	104 (29.6)
Would implement in pharmacy and use during counselling	47 (35.1)	66 (28.6)	114 (32.5)
Would prefer to trial prior to adoption	41 (30.6)	70 (30.3)	111 (31.6)
Would provide contraceptive counselling if pharmacy policy mandated but would not use resources	0 (0.0)	8 (3.5)	8 (2.3)
Prefers not to change practice	7 (5.2)	7 (3.0)	14 (4.0)
Willingness to adopt new clinical initiatives ^c (n=355)			
Innovator	51 (38.1)	89 (38.5)	140 (39.4)
Early adopter	41 (30.6)	65 (28.1)	106 (29.9)
Early majority	21 (15.7)	41 (17.8)	62 (17.5)
Late majority	15 (11.2)	23 (10.0)	39 (11.0)
Laggard	1 (0.8)	7 (3.0)	8 (2.3)

DPA=distribution priority area indicating areas with a shortage of General Practitioners relative to community needs.

^ap<0.05 (logistic regression, Mann-Whitney U test)

^bRespondents could select more than one option, therefore total >366/>100%

^cAdapted from a validated questionnaire developed for community pharmacists, based on Rogers' Diffusion of Innovations theory: Characteristics of intervention adopters are described on a continuum from laggards (resistant to change) to innovators (the first people to adopt new initiatives)

Table 2. Rate of agreement with statements about contraceptive counselling according to Diffusion of Innovations ‘adopter’ group, reported as n (%)

	Missing (n=11)	Laggard/ late majority (n=47)	Early majority (n=62)	Early adopter (n=106)	Innovator (n=140)	Total (n=366)
Contraceptive counselling is part of the pharmacist's professional role	5 (1.5)	42 (12.4)	58 (17.1)	101 (29.7)	134 (39.4)	340 (95.51)
Contraceptive counselling directly fits into the daily activities of my pharmacy	5 (1.6)	37 (12.1)	54 (17.7)	91 (29.7)	119 (38.9)	306 (85.96)
Patients will benefit from improved access to reliable information and decision support	6 (1.8)	44 (13.1)	56 (16.6)	102 (30.3)	129 (38.3)	337 (94.40)
A contraceptive counselling service would improve the public image of the pharmacy profession	5 (1.6)	34 (11.0)	49 (15.8)	92 (29.7) ^a	130 (31.9) ^b	310 (86.83)
A contraceptive counselling service would only succeed in my pharmacy if the task is not too tedious	2 (1.1)	30 (16.4)	33 (18.0)	53 (29.0)	65 (35.5) ^a	183 (51.40)
Contraceptive counselling is an important service	6 (1.8)	42 (12.5)	56 (16.7)	98 (29.3)	133 (39.7)	335 (94.63)

Responses provided for each statement on a 5-point Likert scale from strongly disagree to strongly agree. Only the combined incidence of agree and strongly agree responses is reported.

Odds of agreement with statement (logistic regression) compared across groups with base-level odds (laggards & late majority)=10.5, 95%CI=3.8-29.3, p<0.001

^aLogistic regression p<0.05

^bLogistic regression p=0.001

