CSIRO PUBLISHING

COLLECTION | RESEARCH ARTICLE
https://doi.org/10.1071/PY25181

Australian Journal of Primary Health

Exploring Australian community pharmacists' perspectives, practices and use of emergency hormonal contraception guidelines: a qualitative study using the Theoretical Domains Framework

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Received: 2 September 2025
Accepted: 5 January 2026
Published: 5 February 2026

Cite this: Nona RA *et al.* (2026) Exploring Australian community pharmacists' perspectives, practices and use of emergency hormonal contraception guidelines: a qualitative study using the Theoretical Domains Framework. *Australian Journal of Primary Health* **32**, PY25181. doi:10.1071/PY25181

ABSTRACT

Background. Emergency hormonal contraceptive pills (ECP), a safe and effective way to reduce the risk of unwanted pregnancy, are available without a prescription in community pharmacies in Australia, and >90 countries globally. Supply is informed by practice guidelines for pharmacists in several countries; however, use remains limited. This study aimed to explore the perspectives and practices of community pharmacists in Australia when providing ECP, to identify challenges and facilitators encountered when using ECP practice guidelines. **Methods.** Semi-structured interviews were undertaken with purposively sampled Australian community pharmacists who actively supplied ECP, from across a diversity of locations and years of practice. Interview questions were informed by the Theoretical Domains Framework. The interviews were audio-recorded, transcribed verbatim, thematically analysed inductively, then deductively mapped against the Theoretical Domains Framework and double coded. **Results.** Seventeen interviews were conducted. The four overarching themes – decision-making in ECP provision, geographic variation in practice, guideline use, and knowledge gaps and training needs – could be mapped against seven of the 10 relevant Theoretical Domains Framework domains. A lack of confidence and up-to-date knowledge among pharmacists was a challenge to optimal provision of ECP. Practice guidelines were acknowledged to contain valuable information, but were difficult to interpret, and use was limited. **Conclusions.** Australian pharmacists' perspective of their practice in providing ECP has highlighted the challenges and facilitators to the use of the ECP practice guidelines. Guidelines were seen as inaccessible, ambiguous and impractical, indicating the need for future research to optimise their use. Findings can inform targeted interventions to enhance ECP guideline uptake and improve patient outcomes.

Keywords: access, adolescents, community pharmacists, emergency contraception, equity, gender diverse, postcoital contraception, practice guideline, practices, reproductive health, sexual health, Theoretical Domains Framework, women's health.

Introduction

In 2020, approximately 40% of pregnancies in Australia were unintended, equating to 197,234 pregnancies that were either unwanted or mistimed, with approximately 60% ending in abortion (Bearak *et al.* 2020; Organon Pharma Pty Limited 2022). In an Australian report surveying high school students, >30% had vaginal intercourse by the age of 15 years, and >50% by the age of 18 years, with 3.5% of these resulting in an accidental pregnancy (Walsh 2020). Additionally, studies show women living in rural areas are 1.4 times more likely to experience an unintended pregnancy due to limited availability and access to reproductive health care (Shankar *et al.* 2023).

Community pharmacists are accessible providers in primary care, and play a pivotal role in reducing barriers to reproductive care by providing timely access to emergency hormonal contraceptive pills (ECP), a safe and effective means of preventing unwanted

Collection: Quality Improvement and Evaluation in Primary Health Care

pregnancy (Ali *et al.* 2025). Levonorgestrel ECP (LNG), is licensed for use within 72 h of unprotected sexual intercourse (UPSI), preventing approximately 85% of unintended pregnancies (Glasier *et al.* 2010). In contrast, ulipristal acetate (UPA) offers higher efficacy, up to 97%, and can be used within 120 h of UPSI (Glasier *et al.* 2010). Currently, ECP is available without a prescription in >90 countries (European Consortium for Emergency contraception 2025), supporting the public health goal of reducing the incidence and impact of unintended pregnancy (Organon Pharma Pty Limited 2022; World Health Organization 2024). Pharmacists in the majority of these countries, including Australia, have access to specific ECP evidence-based practice guidelines, (Supplementary material 1), which are designed to facilitate consistency and optimal patient outcomes.

Since 2001, global studies have consistently reported that pharmacists lack up-to-date knowledge of ECP and do not adhere to practice guidelines (Nona *et al.* 2025). Despite 25 years having passed, these behavioural and contextual challenges remain unresolved (Nona *et al.* 2025). A recent scoping review identified that previous international studies have shown behavioural inadequacies in pharmacists' knowledge, resulting in inconsistent clinical assessment and patient counselling, and poor interpretation and application of guidelines (Nona *et al.* 2025). Research also indicates that guidelines are underutilised by pharmacists and contain information irrelevant to current practice needs (Mill *et al.* 2021, 2023; Nona *et al.* 2025). Recommendations called for further research to enhance pharmacists' knowledge of ECP, and to improve the usability and relevance of practice guidelines (Nona *et al.* 2025).

Over the past two decades, the evolving scope of pharmacists' practice in Australia has increased workload pressure, and decreased time for continuing education or review of practice guidelines (Hussein *et al.* 2021). Previous international and Australian studies address the poor uptake of current practice guidelines, but do not examine relevance and accessibility within the context of ECP provision, or the challenges that prevent pharmacists from utilising ECP practice guidelines, which contribute to suboptimal patient outcomes (Mill *et al.* 2021, 2023). Additionally, studies have not examined pharmacists' behaviour when providing ECP, nor the relevance and accessibility of ECP guidelines. To identify barriers and enablers to pharmacists' practice, the Theoretical Domains Framework (TDF) can be utilised to unpack behavioural and contextual determinants of guideline adherence and practice change.

Aims

This study aimed to explore the perspectives and practices of community pharmacists in Australia when providing ECP, to identify challenges and facilitators encountered when using ECP practice guidelines.

Methods

Study design

Qualitative data were collected via online audio-recorded semi-structured interviews with community pharmacists. Previous studies in this area lacked nuance and depth, therefore, interviews gave pharmacists the opportunity to reflect on and share their in-depth perspectives and practices used in the provision of ECP, without the restrictions of survey-style questions. Conversational style open-ended questions enabled pharmacists to speak freely about their everyday practice, and the challenges and facilitators encountered when using current ECP guidelines. The interviewer, being a practising pharmacist, had a positive impact, improving rapport with participants, as they knew the interviewer understood their perspectives. All participants provided informed consent before interview. The study was reported in accordance with COREQ guidelines (Supplementary material 2; Tong *et al.* 2007).

Setting, sampling and eligibility criteria

Between August and October 2024, pharmacists were recruited from across Australia through purposive and subsequent snowball sampling, to ensure participants from diverse practice contexts based on the following eligibility criteria: currently practising pharmacists actively providing ECP in community pharmacy practice. Sample size was guided by information power and thematic saturation. The research team disseminated an email to potential participants from the James Cook University professional network database, notifying them of the study, and providing contact information and encouraging them to share this information with their peers. The research team consisted of RN (practising pharmacist and researcher), RR (healthcare professional and experienced qualitative specialist), BG and ST (experienced pharmacy academics, practitioners and researchers). Acknowledging professional characteristics could influence the interpretation of the data; the inclusion of a non-pharmacist, RR, helped ensure data credibility and eliminate professional bias (Liamputtong 2013). Although participants were known through professional networks, there were no close relationships.

To explore any urban/rural variation in the provision of ECP, pharmacists were selected to ensure a geographically representative sample across all Modified Monash Model (MM) locations, based on the Australian Statistical Geography Standard Remoteness Areas framework (Supplementary material 3). Pharmacists expressing interest in the study were emailed an information sheet and asked to complete a consent form before being enrolled. The information sheet outlined the objectives, aims and methods of the study, associated risks, and risk minimisation approaches. In addition, they were informed of compensation for their participation with

a voucher. This information was explained verbally before commencement of the interview. Confidentiality was assured, participation was voluntary and withdrawal from the study before data deidentification was explained.

Theoretical framework

The Theoretical Domains Framework (TDF) offers a framework for identifying potential targets for implementation or change in current behaviours by health professionals (Cane *et al.* 2012; Hussein *et al.* 2021). For the purposes of this study, the framework was reduced from 14 domains and 84 constructs to 10 domains and 43 constructs, most relevant to the provision of ECP, and the challenges and facilitators surrounding the use of ECP guidelines (Supplementary material 4; Cane *et al.* 2012). RN initially analysed and reduced the framework; this was discussed as a team, with differences resolved by consensus before proceeding. The TDF is suitable for exploring ECP guideline use, as it enables a systematic examination of behavioural determinants influencing practice.

An interview guide was developed (Supplementary material 5), informed by a scoping review of the literature (Nona *et al.* 2025) and the modified TDF (Cane *et al.* 2012). The interview format enabled participants to provide insights into their perspectives of, and practices providing, ECP and their use of ECP guidelines (Liamputtong 2013). The interview guide was piloted on one experienced qualitative researcher and one final year pharmacy student, to ensure clarity and dependability of the questions. Several interview questions were reworded for clarification, and after a final pilot interview with one practicing pharmacist; no further changes were made.

Data collection and analysis

Semi-structured interviews were conducted (with an average of 26 min duration) in a zoom online video call by RN, audio-recorded only and voice to text used to generate the transcript. The transcripts were manually checked for accuracy against the audio-recording, inconsistences corrected, identifying information removed and numerically coded to distinguish participants (e.g. P1M3 = Pharmacist 1. Male. MM 3) and imported into NVivo (Ver. 14) for data management (Liamputtong 2013). Data were analysed using Braun and Clarke's six-phase framework for thematic analysis to inductively look for patterns, identify codes and group them into themes across the data (Braun and Clarke 2006). The resulting themes and sub-themes were then deductive mapping to the relevant TDF domains (Cane *et al.* 2012). To ensure credibility, RR and RN double independently coded, with discrepancies resolved by discussion and consensus as a team. Similar themes and subthemes were grouped while accurately reflecting the transcript.

Results

A total of 17 community pharmacists, 12 women and five men, agreed to be interviewed, with their years as practising pharmacists ranging from 8 months (<1 year) to 40 years. Eleven worked in urban areas (MM 1–3), and six in rural and remote areas (MM 4–7). Participant demographics are provided in Table 1. As ECP guidelines in Australia are produced and accessible only through the Pharmaceutical Society of Australia, participants were asked about membership of this professional body to assess its influence on guideline use.

Challenges and facilitators influencing guideline use and ECP provision behaviours

Four themes were developed from the data: decision-making in ECP provision, geographic variation in practice, guideline

Table 1. Demographic characteristics of participants ($N = 17$).

	n = 17	*n* (%)
Gender		
Woman		12 (71%)
Man		5 (29%)
Years in practice		
<1 year		1 (6%)
1–5 years		4 (23.5%)
6–15 years		7 (41%)
16–25 years		3 (17.5%)
>25 years		2 (12%)
MM location		
MM 1 (metropolitan)		5 (29%)
MM 2 (regional centre)		4 (23%)
MM 3 (large rural town)		2 (12%)
MM 4 (medium rural town)		1 (6%)
MM 5 (small rural town)		2 (12%)
MM 6 (remote)		1 (6%)
MM 7 (very remote)		2 (12%)
Pharmacists on duty at one time		
Single		4 (23.5%)
Multiple		9 (53%)
Both		4 (23.5%)
Ulipristal stocked at pharmacy		
Yes		16 (94%)
No		1 (6%)
PSA member		
Yes		4 (23.5%)
No		13 (76.5%)

MM, Modified Monash Model Location (1–7); PSA, Pharmaceutical Society of Australia.

use, and knowledge gaps and training needs. These themes and associated subthemes were compared, and where appropriate, aligned with the relevant domains and constructs of the TDF. Of the 10 TDF domains initially considered relevant to this study, challenges and facilitators were identified in seven: knowledge, skills, professional role and identity, beliefs about capabilities, beliefs about consequences, environmental context and resources, and behaviour regulation, and in 25 constructs (Fig. 1). A sub-theme within knowledge gaps and training needs led us to further modify the framework by adding a new construct, 'professional interventions', to the behaviour regulation domain. The additional construct captured participant input to improve ECP practice guideline usability (Fig. 1). Table 2 summarises challenges and facilitators aligned to the relevant TDF domains and constructs, along with example quotations.

Theme: decision-making in ECP provision

Domains: knowledge, skills and beliefs about consequences

Participants articulated theoretical knowledge of ECP, alongside practical communication and empathetic skills, when discussing their decision-making. However, a stark contrast between clinical judgement and guideline recommendations highlighted how these behavioural determinants influence ECP supply. Participants stated that if the patient is biologically capable of conceiving, the benefit of supply outweighs any risk of non-supply, in terms of preventing an unwanted pregnancy. All participants displayed overall willingness to supply ECP, reflecting their knowledge, skills and beliefs about the consequences of non-supply.

> I think unwanted pregnancy can have dire consequences, especially in towns where you may not be able to get access to other options, so I think possibly the benefits outweigh the risks. (P9F6)

Participants stressed the importance of verifying the legitimacy of the request with the patient, when a third party made the request, despite guidelines stating contact was not explicitly needed with the patient in these cases.

> I didn't have to see her, *per se*, but as long as the partner who was getting it, was happy for me to communicate to them in some way or another and make sure appropriate counselling. (P7F1)

Time since UPSI was the primary decision-making factor, with the majority of participants offering LNG as a first-line option, contrary to guideline recommendations. Long-term familiarity with LNG resulted in participants not offering UPA to patients. In some cases, this was described as a habit.

> My starting point is the levonorgestrel, because it's been around a long time, I'm familiar with it and the ulipristal is more complicated . . . I do not think I have ever used it. (P5F7)

Some participants could not provide a choice of ECP, as they did not stock UPA or worked in pharmacies that indicated a preference for LNG, a reflection of organisational commitment. They also stated the cost of ECP may outweigh the clinical benefit when a choice is presented to the patient.

> It's a A$10 difference between the two [UPA being more expensive]. Where I work is in a lower socioeconomic

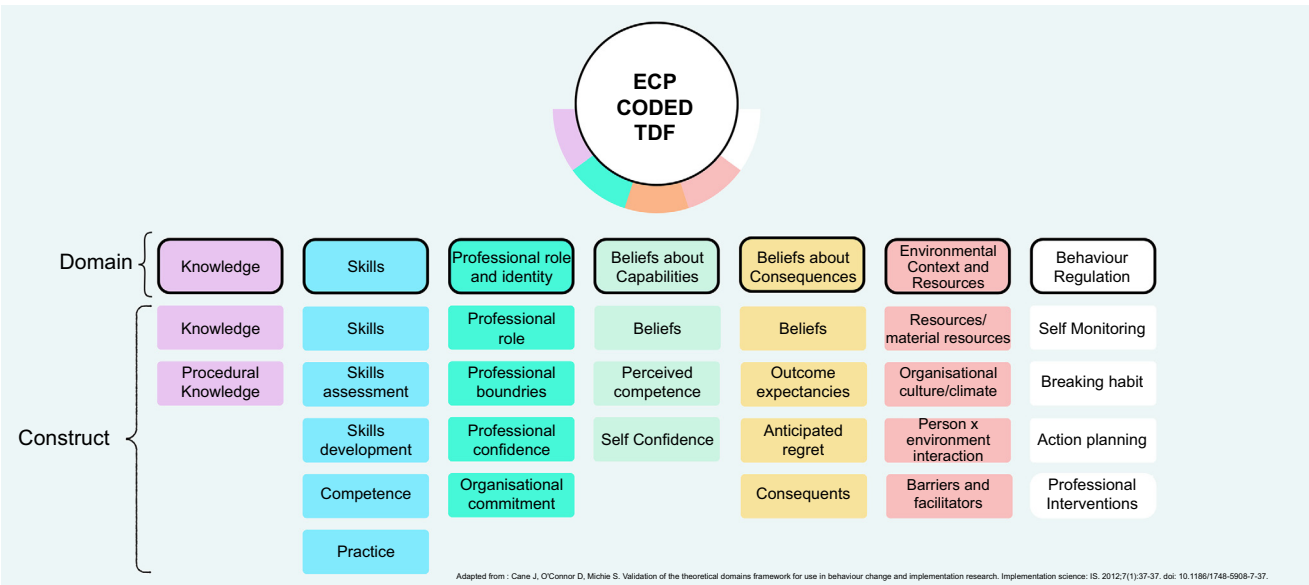

Fig. 1. TDF domains and constructs aligned with ECP provision.

Table 2. Summary of challenges and facilitators aligned to TDF domains and constructs with quotations.

Domains	Summary of data	Challenge Associated construct	Facilitator Associated construct
Knowledge	Knowledge of ECP included that acquired through tertiary education, CPD and sources, such as drug reps. It also included posteriori knowledge, gained through experience. Lack of knowledge was seen as a **CHALLENGE,** whereas current knowledge was seen as a **FACILITATOR**.	**Procedural knowledge** 'It hasn't been recently that I've looked at it [guidelines], so I don't really know what's in there.' (P4F5)	**Knowledge** 'I think levonorgestrel would be more appropriate because then they could recommence their COC and keeping that routine.' (P2F7)
Skills	Pharmacists' skills including communication, clinical decision-making, information gathering, counselling, empathy and compassion are a **FACILITATOR**. Participants with fewer years' experience look towards their colleagues to enhance their skills. A **CHALLENGE** is posed by increased use of professional judgement and reduced guideline use	**Skills development** 'I think maybe I need to do some further education on how to handle that line of questioning.' (P11F1) **Competence** 'I do try to prioritise, but can be a little bit difficult if we are busy, so they have to wait a bit sometimes.' (P3F3)	**Skills** 'Where are they in their ovulation (cycle), whether they're on the contraceptive pill or not, check BMI . . . medications? (P15F2) **Skills assessment** 'As a male I . . . try and make sure it's more open and make them feel comfortable.' (P12M4) **Practice** 'Educating pharmacists that they need to be able to have the conversation. It's effective communication.' (P11F1)
Professional role and identity	A **CHALLENGE** arises from professional boundaries and poor knowledge, reducing professional confidence. Organisational commitment, or enforcing behaviour, may limit capacity to provide appropriate ECP. Pharmacists' professional role as a trusted healthcare professional is a **FACILITATOR** to ECP supply.	**Professional boundaries** 'As a male, we would . . . offer a female to come with us [consultation room].' (P14M4) **Professional confidence** 'I'd need to do some training around how to treat that with the right level of professionalism and empathy [Gender diverse].' (P11F1) **Organisational commitment** 'I'm not really sure on the, but we don't stock that. [ulipristal].' (P9F6)	**Professional role** 'I will make a point to make sure that I'm the one that's handing it out. This is my role and it's very important.' (P3F3)
Beliefs about capabilities	More years in practice increased professional judgement, perceived competence and self-confidence to make informed decisions without resource guidance, this could be a **CHALLENGE** and a **FACILITATOR:**	**Self Confidence** 'If I feel confident . . . I'd probably give it. If I didn't feel comfortable, then I would say no.' (P13M1) **Perceived competence** 'If [pharmacists] comfortable with their experiences and professional opinions that they wouldn't need to refer to the guidelines.' (P6M5)	**Beliefs** 'I think the professional judgement will come in at the time in terms of workflow, so if you have more time or less time, you'll be able to triage that patient.' (P6M5)
Belief about consequences	Pharmacists showed concerns regarding the consequences of action or inaction, namely supply to adolescents, third party, advanced supply and consideration of sexual assault. However, they did not refer to guidelines in situations where they were unsure. The outcome could be a **CHALLENGE** or **FACILITATOR**	**Beliefs** 'I did refuse that [advance provision request], you just don't know how they're going to take it once they leave the pharmacy. You can't ensure that it's the appropriate way. So, I refuse that sale.' (P7F1)	**Outcome expectancies** 'I just documented it. Because I just think if I came up against the board and I had to justify my clinical decision-making. I would feel more comfortable in myself, defending my actions that I gave it out than when I didn't.' (P11F1) **Consequents** 'I think almost every situation an unwanted pregnancy is a worse outcome [supply to adolescents].' (P5F7)
Environmental context and resources	Lack of access to guideline resources and poor staffing. Were seen as a **CHALLENGE.** Geographical location of pharmacy identified customer privacy concerns. Digital health and multiple pharmacists were acknowledged as a **FACILITATOR.**	**Resources/material resources** 'I don't think you can actually access [guidelines] unless you were a member, which I wouldn't have access to.' (P8F2) 'Dependent on the systems and staff . . . you cannot [always] give the quality of care needed or expected.' (P15F2) **Person × environment** 'It's been really challenging when I've had young girls . . . in a small town, I know their family.' (P9F6) **Barriers and facilitators** 'If it's busy . . . it gets a bit harder to counsel.' (P13M1)	**Organisational culture/climate** 'When there's a second pharmacist, of course, we can counsel better and more.' (P17F2)

(*Continued on next page*)

Table 2. (*Continued*).

Domains	Summary of data	Challenge Associated construct	Facilitator Associated construct
Behaviour regulation	Pharmacists are aware of shortcomings in their knowledge base, keeping up to date with developments and the habits that need addressing. Action planning is often triggered by realisation of all of these factors. Actioning these plans is the final step. Aspects of behaviour regulation are a **CHALLENGE**, acknowledgement and action planning is a **FACILITATOR**	**Breaking habit** 'I still give the levonorgestrel, I think I'm just very comfortable with that one to be honest with you compared to ulipristal.' (P7F1)	**Self-monitoring** 'You know there's mandatory CPD we do every year . . . so, you know I should make that part of my every year, I need to do.' (P1M3) **Action planning** 'Now we're having this conversation. I probably need to find out what I need to do.' (P1M3)
Additional construct	Pharmacists shared their own ideas how guidelines may be modified to be more accessible and usable in their everyday practice. Interventions to increase knowledge and guideline use can become **FACILITATORS** if further developed.		**Professional-led interventions** 'Having easier flow charts or options to choose between A and B would really help everybody.' (P17F2)

BMI, body mass index; COC, combined oral contraceptive; CPD, continuing professional development.

> area . . . I'd say 80% of the time, people would probably lean towards the cheaper option. (P13M1)

Theme: geographic variation in practice

Domain: environmental context and resources

The participants' practices highlighted that a geographical disparity existed in the provision of ECP. Participants in rural and remote areas (MM 4–7) differed in their perspectives and practices, from their counterparts in other locations (MM 1–3).

Participants from remote locations were more receptive to advanced provision of ECP than those in urban areas. They cited poor access to services for people living and working in isolated communities.

> Working out in the bush . . . I think it's a very reasonable thing, again it's about benefit versus risk . . . make sure she knew how to use it, when she needed to use it. (P2F7)

Participants in urban areas were clear that access to ECP was easy for patients; therefore, ECP should only be supplied when it was needed.

> If they wanted to keep it at home, I'm not super keen. Every day of the year you've got a pharmacy open, unless you wanted it at 3 am, it's a thing that can wait for 2 h. (P13M1)

Participants in rural and remote locations had privacy concerns about ECP access in small communities, where people were more familiar with one another.

> . . . in small towns it's just really tricky . . . I think technology could be enhanced to still give that service, but not have to be dragged off to a consultation room. (P9F6)

These concerns were illustrated by participants who were seeing a large number of unwanted pregnancies occur in rural towns.

> We're still doing a lot of MS-2 Step [medical termination of pregnancy], maybe like 30 a month . . . I've actually never done an MS-2 Step dispensing for somebody that has had their morning after pill in their history . . . they just didn't access it. (P9F6)

Participants from urban areas shared how they are using technology (resources) in the form of online prescription ordering platforms to provide access to ECP.

> I think having the online service can increase accessibility . . . some people might intentionally want to avoid that face-to-face conversation and knowing that they can access it online . . . overall, I think that that does help increase accessibility. (P14F1)

Theme: guideline use

Participants discussed the implications arising from varying levels of utilisation of ECP guidelines. Inability to access guidelines was identified as a significant barrier to implementation of evidence-based recommendations, with only 23.5% of the pharmacists interviewed having access to them through PSA membership.

> The fact that they're probably not easily accessible . . . they're not right there. (P3F3).

Limited time and resources also impacted pharmacists' decision to consult guidelines, with most participants indicating reasons why they did not use them.

> It can be quite tricky to navigate, especially if you're under pressure and you don't have the time to read it straightaway . . . you're trying to do 50 things at once. You've got patients in front of you and just want to read something and trying to scan for the exact question that you have. (P6M5)

Some participants described being confused by the guidelines and felt they were open to interpretation, consequently reducing belief in their own capabilities.

> They're very grey, not the most clear cut. I don't like where it's a bit of interpretation. Like the age guideline, based on your jurisdiction. (P3M3)

Several participants suggested the length of the guideline document reduced its functionality in practice. Despite their personal lack of use, they saw value in the guidelines, and encouragedstudents and interns to use, reflecting their beliefs about consequences.

> I feel like they're there for a reason and . . . have all the information, maybe too much information . . . I like the idea of having a more succinct and easier checklist. (P6M5)

Theme: knowledge gaps and training needs

Domains: knowledge, professional role and identity beliefs about consequences, beliefs about capabilities and behaviour regulation

Participants identified areas within their practice where their actions had limitations or consequences because of knowledge gaps. Confidence in their professional role, beliefs about their capabilities and consequences, including unfamiliarity with the guidelines and recency of knowledge, indicated the need for training.

Adolescent provision

Knowledge gaps and lack of guideline use resulted in inconsistent practice, with participants being inadequately prepared for ECP provision to adolescents and third parties, including concerns around consent, and supply to transgender or gender diverse people.

> If they're young, then I'll be referring to the GP. You just don't know what the legal implications are nowadays. (P1M3)

Some participants were confused about the age when adolescents can access ECP without parental consent.

> I think back in the days we used to do them from 16 . . . now you just want . . . to protect yourself if they're under 18. I don't even know what the law is, to be honest . . . if they're young, then I will just refer. (P2M3)

Transgender and gender diverse care

Participants' attitude towards supply to transgender or gender diverse person was affirming; however, concern was expressed about their lack of knowledge about patients undergoing hormone therapy.

> I guess considerations and concerns would be . . . because it's still a hormone, would this interfere with their usual hormonal treatment? (P14F1)

Participants described having confidence in their experience as a pharmacist, confirming their professional role and identity, using their acquired professional judgement to make clinical decisions rather than referring to the ECP guidelines. Years in practice did not correlate with guideline use, although many participants indicated they only referred to them during university or early in their careers.

> If pharmacists have gaps in their knowledge, they're more likely to make their own clinical decision. They are comfortable with their experiences and professional opinions that they wouldn't need to refer to the guidelines, so they fill in their knowledge gaps themselves, which is not always correct. (P6M5)

Education and continuing professional development

Participants discussed gaps in their education, and recognising areas where further education could regulate their behaviour to improve their knowledge and practice. This reinforced the need for targeted training, which participants supported by sharing ideas to improve the usability of the guidelines in practice. The need for ongoing interventions was further highlighted when only participants who had been practising for <20 years recalled receiving any university education on ECP with minimal further education. Only one participant specifically recalled completing any ECP continuing professional development within the current year. Participants reflected on their education and lack of ECP guideline use, recognising the need for change in their behaviour.

> I've never read the emergency contraceptive one, I probably should, but I'm just. I'm not familiar with it at all. (P1M3)

Discussion

Pharmacists discussed challenges they encountered when providing ECP. Difficulty maintaining knowledge currency (knowledge), coupled with limited application and use of current guidelines (behaviour regulation), led to supply of LNG out of habit (beliefs about capabilities), and hesitations when supplying to adolescents, gender diverse individuals,

third parties and advanced provision (beliefs about consequences). Despite facilitating positive reasoning through professional skills (skills) and judgement (professional role and identity), differences were highlighted in access to ECP between rural and urban areas (environmental context). Mapping behaviours of the TDF revealed discrepancies between professional judgement and evidence-based guidance, alongside substantial knowledge gaps. This approach also identified that key behavioural determinants are modifiable and may be used to inform interventions enhance pharmacists' decision-making in the provision of ECP.

The International Pharmaceutical Federation states it is essential to have national guidelines to maintain optimal evidence-based care for patients, and lifelong continuing education for pharmacists, to improve clinical knowledge, skills and performance (International Pharmaceutical Federation 2011). The PSA is the national peak body for Australian pharmacists. Paying members may access a range of education and resources, including guidelines, alongside organisation advocacy. Only 23.5% of the pharmacists interviewed were members of the PSA, an initial barrier to accessing the ECP practice guidelines, resulting in pharmacists relying on their professional judgement rather than evidence-based practice. Pharmacists with more years of experience rarely used, or had never referred to, the ECP guidelines; however, value was seen in the extent of information the guidelines presented, especially for use as a tool to teach or mentor others. Similar viewpoints were seen in two Australian studies examining practice guidelines, in which pharmacists found they were common sense, but more useful for teaching students or less experienced pharmacists (Mill *et al.* 2021, 2023). Our study found challenges to use of practice guidelines were influenced by lack of accessibility and professional confidence. Additionally, pharmacists in this study did not consult current ECP guidelines, as they found them difficult to interpret, especially under time constraints. This concurred with findings in a 2013 study, of pharmacists in Victoria, Australia, where their practices were not always in line with PSA guideline recommendations (Hussainy *et al.* 2015).

These challenges led to inconsistent access to ECP for certain populations, such as adolescents and gender diverse people. Although both LNG and UPA are safe for adolescents (Supplementary material 1), the lack of legislative clarity contributed to pharmacists' hesitancy to supply ECP to those aged <16 years, creating a significant barrier to access. Confusion surrounding consent with minors has been reported among other clinicians, as a potential barrier to access to reproductive and other health care (Fenton 2020). In comparison with Australian ECP guidelines, international and UK guidelines (Supplementary material 1) offer clearer statements regarding supply of ECP to adolescent girls who are at risk of unwanted pregnancy after UPSI.

Although pharmacists were empathetic to the supply of ECP to transgender and gender diverse people, a lack of information about hormonal therapy presented a challenge to their confidence. This is consistent with findings in a previous Australian study, which highlighted the lack of guidelines available for clinicians to support contraceptive counselling, including ECP use, in gender diverse patients (Bonnington *et al.* 2020). To align with national priorities in equitable reproductive healthcare access, strategies could include embedding specific modules in gender diverse and adolescent care, embedded within focused ECP training.

Australian and international ECP guidelines (Supplementary material 1) recommend that UPA should be offered first line, in most cases, due to its greater efficacy. Despite the PSA guidelines indicating the first-line use of UPA, poor knowledge and awareness of UPA contributed to pharmacists routinely supplying LNG. Although this study did show all but one location stocked both UPA and LNG, significantly more LNG was held, with the cost of UPA referred to as an additional barrier. Consequently, patients are not being provided with the optimal ECP, risking an inability to prevent unwanted pregnancy. This is consistent with studies showing poor knowledge of ECP, and greater costs resulted in UPA not being offered or stocked in pharmacies (Stevenson *et al.* 2024; Nona *et al.* 2025).

Advanced provision provides timely access to ECP for women at high risk of unwanted pregnancy and those wishing to have ECP on hand in case of contraceptive failure (Grzeskowiak *et al.* 2017). When possible, without denying access to ECP, emphasis should be placed on effective ongoing contraception to reduce unintended pregnancies (Mazza and Botfield 2022). Differences were identified in access to and provision of ECP in rural and remote locations and urban areas. Pharmacists in rural and remote Australian locations were amenable to advanced provision of ECP, being accustomed to patients living and working long distances from services. Their urban counterparts stated ECP is readily available when needed, denying advanced supply, but encouraging regular contraceptive use. A study undertaken in the UK saw a meaningful increase in the uptake of regular oral contraception when provided alongside ECP from a community pharmacist (Cameron *et al.* 2020).

Pharmacists in remote areas recognised patients may not be accessing ECP, risking unwanted pregnancy, related to a perceived lack of privacy when living in a small town. Similar findings were identified in studies highlighting fear, shame and the worry of 'town gossip' as challenges to accessing sexual and reproductive health care in rural and remote areas (Golestani *et al.* 2025). In urban areas, the use of digital health has enabled increased access to ECP. Pharmacists in a remote location suggested patient access to ECP could be improved via an app linked to the pharmacy. This positive outcome was seen in a study in Ghana, where online pharmacies have made medications, particularly regarding sexually related issues, more accessible in remote areas (Eab-Aggrey and Khan 2023). If integrated into current ECP guidelines, many Australian community pharmacists have the scope to improve access to oral contraceptives

following the use of ECP (Ali *et al.* 2025). Through digital health and ongoing contraceptive access, the value of pharmacists as public health agents in providing increased access to sexual and reproductive services is emphasised (Eab-Aggrey and Khan 2023; Ali *et al.* 2025).

Interestingly, disparity was seen between acceptance of digital requests for ECP and third-party requests made in person. Pharmacists accepted online verification of a patients' identity, but insisted on speaking to a patient if a third-party request was made. This practice is inconsistent with the current PSA guidelines (Supplementary material 1), which do not require contact with the intended patient unless sufficient information cannot be gathered to assess safety and effectiveness of ECP. Although pharmacists need to be mindful of the possibility of sexual assault, information gathering from a patient or third party must always be acquired in a respectful and non-judgemental manner, while providing access to ECP in a timely manner.

Strengths of this study include the use of the TDF (Cane *et al.* 2012) to identify and integrate factors influencing pharmacists' behaviour in ECP provision. Data from geographically diverse pharmacists indicated possible location-based practice differences. However, the small sample size and focus on Australian pharmacists are key limitations indicating the need for a larger study. Despite this, findings support and extend previous research into equitable and timely access to ECP, and confirm the need for further research into guideline enhancement. A further limitation was the lack of demographic data on pharmacy ownership, preventing comparison between banner groups and independent pharmacies.

Conclusion

This study revealed key behavioural and contextual factors influencing Australian pharmacists' provision of emergency contraception, particularly their use of practice guidelines. Pharmacists described guidelines as inaccessible, ambiguous and impractical, contributing to inconsistent provision and reduced adherence to evidence-based ECP recommendations. Findings support the need for focused training alongside more accessible, streamlined guidelines that are co-designed to enhance usability and confident clinical decision-making. By addressing these barriers, community pharmacists can be supported to deliver equitable, timely and evidence-based emergency contraception. Future research must examine the development and implementation of co-designed, context-sensitive practice guidelines, and leverage digital health innovations to support pharmacists in improving access to emergency contraception across diverse settings.

Supplementary material

Supplementary material is available online.

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Data availability. The data that support this study will be shared upon reasonable request to the corresponding author.

Conflicts of interest. The authors declare no conflicts of interest.

Declaration of funding. This research did not receive any specific grant from funding agencies in the public, commercial nor not-for-profit sectors.

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