Enhancing use of emergency contraceptive pills: A systematic review of women's attitudes, beliefs, knowledge and experiences in Australia

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Abstract

Over a decade after emergency contraceptive pills (ECPs) became available without a prescription, the rate of unintended pregnancies remains high in many settings. Understanding women's experiences and perceptions of ECPs may provide insights into this underutilisation. We systematically searched databases to identify qualitative and quantitative primary studies about women's beliefs, knowledge and experiences of ECPs in Australia. Findings demonstrate persistent misunderstandings around access, how ECPs work, and a moral discourse around acceptable versus unacceptable use. Addressing knowledge and the stigma around ECPs use is fundamental to increasing the use of this medically safe and effective strategy.

Keywords: Emergency Contraception, Contraception, Public Health

Manuscript

Emergency contraception pills (ECPs), also known as postcoital contraception or the 'morning-after pill', are used to prevent pregnancy following sexual intercourse where contraceptives were not used, were used incorrectly or were believed to have failed, or in cases of sexual assault (Cameron, Li, & Gemzell-Danielsson, 2017; World Health Organization, 2012). Available worldwide for over 50 years, ECPs are now used in over 148 countries; in a third of these countries they are available without a doctor's prescription (Eshre Capri Workshop Group et al., 2015). International efforts to enhance access to ECPs have been effective but they are still considered to be widely underutilised (Eshre Capri Workshop Group et al., 2015). For example, studies in Scotland, France and Denmark show that most women seeking an abortion had not used ECPs (Cameron, Gordon, & Glasier, 2012;

Moreau, Bouyer, Goulard, & Bajos, 2005; Sørensen, Pedersen, & Nyrnberg, 2000). An international systematic review found no population level effect for unintended pregnancy or abortion rates following enhanced ECPs access but that "[f]urther research is needed to explain this finding and to define the best ways to use emergency contraception to produce a public health benefit" (Polis et al., 2007; Raymond, Trussell, & Polis, 2007). Understanding women's experiences and perceptions of ECPs may provide insights into this established underutilisation.

ECPs were initially a combination of oral contraceptive pills known as the Yuzpe regimen; this was approximately 75% effective in preventing pregnancy but had unpleasant side effects (Shochet et al., 2004). A single-dose ECP has been available worldwide since the 1990s (Cameron et al., 2017); a 1.5mg dose of levonorgestrel (LNG) is approximately 85% effective at preventing pregnancy and better tolerated than the Yuzpe regimen (Family Planning NSW, 2013; Shochet et al., 2004). LNG-ECP is licensed for use up to 72 hours after unprotected intercourse (World Health Organization, 2012); studies show it may be effective for at least four days after unprotected intercourse (International Consortium for Emergency Contraception, 2012; Rossi, 2014). LNG-ECP is safe for repeated use and does not increase the risk of cancer or ectopic pregnancy, or affect future fertility, nor can it harm an existing pregnancy (World Health Organization, 2010). The most recently introduced ECP – ulipristal acetate (UPA), a selective progesterone receptor modulator – became available in Europe in 2009 and the US in 2010; UPA prevents more pregnancies than levonorgestrel and is effective up to five days after unprotected intercourse (Glasier, Cameron, et al., 2010). ECPs inhibit or delay ovulation until any present sperm are unable to fertilise, they are ineffective if administered after ovulation has occurred; because ECPs *prevent* fertilisation they are not an abortifacient (Cameron et al., 2017; Eshre Capri Workshop Group et al., 2015).

Different countries provide different modes of access to ECPs: a consultation with a general practitioner, a consultation with community pharmacist, or over the counter pharmacy access with no prescription or consultation. In some countries advance home supply is permitted. Seeking insights into underutilisation means taking account of these local differences and attending to changes over time. In this paper we focus on the case in Australia, where LNG-ECP has been available since 2002 and was rescheduled as a pharmacist medicine available without a prescription from a doctor in 2004 (Hussainy et al., 2011). UPA became available as a pharmacist medicine in early 2017 (although there is no Australian research on women's experiences). Echoing the international picture, while general practitioner management rates of ECPs decreased significantly

after the LNG-ECP rescheduling – that is, the mode of access changed – GP management rates of unintended pregnancies remained stable (Mazza et al., 2014). To better understand how ECPs' potential could be better realised, we conducted a systematic narrative review to ascertain women's attitudes, beliefs, knowledge and experiences of ECPs in Australia, and whether there were changes after ECPs became available without a prescription.

Methods

Search Strategy

Author AL used Ovid to conduct a systematic review of Medline, CINAHL, Global Health, Informit, Sociological Abstracts, Embase and PsycInfo electronic databases, and hand searched reference lists and Google Scholar for grey literature. Searches were undertaken in August 2015 (updates conducted in October 2015 and July 2017). Working with a medical librarian, AL developed the search strategy using three terms: emergency contraception/contraceptives OR postcoital contraception/contraceptives OR morning after pill, AND Australia (Appendix 1).

Inclusion and Exclusion Criteria

We included any published primary research conducted in Australia in which women's attitudes, beliefs, knowledge, and experiences of the ECPs comprised a substantial part of the analysis. Articles were excluded if they were: not about consumer perspectives, understandings, and experiences of the emergency contraception pill (e.g. effectiveness studies); not reporting primary research; or not primarily about Australian consumers (e.g. provider perceptions).

Search Outcomes

Articles meeting the search terms were extracted into EndNote and after duplicate removal, 408 of 533 articles remained (Appendix 2). A hand search to the 11th page of Google and Google Scholar yielded no new articles. AL applied the inclusion and exclusion criteria by title, which produced 107 articles. The 301 excluded articles were disqualified because they were animal studies, opinion pieces, or pharmaceutical studies, or were conducted in countries other than Australia, or were about abortion/termination, gynaecological cancers, sexually transmitted infections (STIs)/HIV/AIDS, sexual assault, or child abuse. Abstracts for all 107 articles were double coded by AL and JMS for exclusion/inclusion; inter-rater reliability was 96% and consensus was reached through discussion. A further 96 papers were excluded because they were not about women's

experiences, attitudes, knowledge, or perceptions of ECPs, were not primarily about ECPs, or were not based in Australia. Of the remaining 14 papers, three were excluded after review of the published manuscript; one was a policy brief and two reported research more substantively covered in an article already included in the review. Two articles that surveyed both women and men were included, but we noted only the findings relating to women participants. The final sample comprised 11 papers.

Approach to analysis

We coded the data for the following dimensions: year of study, location (rural/regional/urban), aim, design and sample, whether the women had used ECPs or not, and key findings/results. We noted whether the sample was clinical, mixed or general. Finally, we noted whether studies were conducted before or after ECPs became available from a pharmacist without prescription (rescheduled); this allowed us to determine whether women's attitudes, beliefs, knowledge or experiences had changed. When reporting on perceptions in the general population we gave priority to quantitative studies with a representative sample. Qualitative studies were especially valuable for elucidating and providing context for experiences (but not prevalence).

Results

Description of the Studies

Of the 11 included articles, eight used quantitative (Calabretto, 2009; Fox, Weerasinghe, Marks, & Mindel, 2004; Hobbs et al., 2011; McDonald & Amir, 1999; Mohoric-Stare & De Costa, 2009; Novikova, Weisberg, & Fraser, 2009; Pyett, 1996; Weisberg & Fraser, 1997) and three used qualitative methods (Table 1)(Calabretto, 2004; Hobbs, Taft, & Amir, 2009; Keogh, 2005). The quantitative studies used self-administered questionnaires (n=6) (Calabretto, 2009; McDonald & Amir, 1999; Mohoric-Stare & De Costa, 2009; Novikova et al., 2009; Pyett, 1996; Weisberg & Fraser, 1997), computer-assisted telephone interview (CATI; n=1)(Hobbs et al., 2011) or case-control review of medical records (n=1)(Fox et al., 2004). Five of the cross-sectional studies reported response rates ranging from 69% to 92% (Hobbs et al., 2011; McDonald & Amir, 1999; Mohoric-Stare & De Costa, 2009; Pyett, 1996; Weisberg & Fraser, 1997). The qualitative studies used semi-structured individual interviews (n=2)(Calabretto, 2004; Keogh, 2005) or focus groups (n=1)(Hobbs et al., 2009). Most studies were conducted in major cities (Calabretto, 2009; Fox et al., 2004; Hobbs et al., 2009; Keogh, 2005; McDonald & Amir, 1999; Novikova et al., 2009; Pyett, 1996; Weisberg & Fraser, 1997), with one in a regional town (Mohoric-Stare & De Costa, 2009);

there was one representative (random digit dialling) national survey (Hobbs et al., 2011). One study did not state location (Calabretto, 2004). Six studies collected data before ECP was rescheduled in 2004 (Calabretto, 2004; Fox et al., 2004; Keogh, 2005; McDonald & Amir, 1999; Pyett, 1996; Weisberg & Fraser, 1997); four were conducted after (Calabretto, 2009; Hobbs et al., 2009; Hobbs et al., 2011; Mohoric-Stare & De Costa, 2009), and one was conducted both before and after to monitor the effect of the change (Novikova et al., 2009). None of the studies asked women which type of ECPs they had used; all studies were conducted before UPA was available in Australia, so findings likely relate only to LGN-ECP and the Yuzpe regimen.

Table 1 here

Study Samples

Six study samples comprised women who came into clinical settings for emergency contraception or abortion counselling (Fox et al., 2004; Keogh, 2005; McDonald & Amir, 1999; Novikova et al., 2009; Pyett, 1996; Weisberg & Fraser, 1997). Three studies used general samples of convenience samples of university and college students (Calabretto, 2009; Mohoric-Stare & De Costa, 2009) and one national sample of Australian women aged 16 to 35 (Hobbs et al., 2011). Two studies were of mixed clinical and general samples (Calabretto, 2004; Hobbs et al., 2009). One study did not report how the sample was generated (Calabretto, 2004). Four study samples were restricted to women who had used ECPs (Calabretto, 2004; Fox et al., 2004; Hobbs et al., 2009; Keogh, 2005), including a case-control review of medical records of women receiving ECPs (Fox et al., 2004). The remaining eight studies included but were not restricted to women who had used ECPs (Calabretto, 2009; Fox et al., 2004; Hobbs et al., 2011; McDonald & Amir, 1999; Mohoric-Stare & De Costa, 2009; Novikova et al., 2009; Pyett, 1996; Weisberg & Fraser, 1997); between 27% and 59% of women had experience with ECPs.

Awareness of ECP

In surveys with clinical samples, awareness of the term "morning after pill" was reasonably high (70% (Weisberg & Fraser, 1997), 83% (McDonald & Amir, 1999)). Recognition of ECPs under another name was much lower: 42% had heard of "emergency contraception" and 17% of "postcoital contraception" (McDonald & Amir, 1999). Awareness of ECPs significantly increased from 87% before they became a pharmacy medicine, to 94% after rescheduling (Novikova et al., 2009). Two surveys using general samples conducted after rescheduling found that 95% (Hobbs et

al., 2011) and 97% (Mohoric-Stare & De Costa, 2009) had heard of emergency contraception or the "morning after pill". Knowledge regarding access was mixed. A pre-rescheduling qualitative study demonstrated that while women knew ECP existed, they did not necessarily know how or where to obtain it ("I had no idea where to get it. We rang up Crisis Care at like 3 in the morning") (Calabretto, 2004). Post-rescheduling surveys reported 38% to 65% of women were aware that ECPs were available from a pharmacy without a prescription (Calabretto, 2009; Hobbs et al., 2011; Mohoric-Stare & De Costa, 2009). Most notable is that 48% of women in a national survey conducted several years after ECPs were rescheduled were unaware that they did not require a doctor's prescription (Hobbs et al., 2011).

Understanding how ECP works

Several studies identified significant gaps in women's understanding of how ECPs works to prevent pregnancy (Calabretto, 2004, 2009; Hobbs et al., 2009; Hobbs et al., 2011; McDonald & Amir, 1999; Novikova et al., 2009). Confusion between ECPs and medical abortion persisted. An early clinical survey found 16% agreed with the statement that ECPs were an abortion pill, and 14% agreed with the statement that ECPs worked by inducing a miscarriage; 58% did not know how they worked (McDonald & Amir, 1999). In the general population, post-rescheduling, 32% agreed with the statement that that ECPs were an abortion pill (Hobbs et al., 2011), 17% agreed with the statement that ECP were also known as RU486 (mifepristone) (Hobbs et al., 2011), 56% said the statement that ECPs caused an abortion was false (that is, 44% were unsure or thought ECP did cause an abortion) (Calabretto, 2009). Even some ECP-experienced women were unsure whether ECPs acted before or after implantation (Hobbs et al., 2009).

There was mixed awareness of the effective timeframe for ECPs use. The proportion who felt unsure of the timeframe appears to have diminished over time; 35% in a pre-rescheduling access survey were not aware of the timeframe (McDonald & Amir, 1999), compared to 10% in a post-rescheduling survey (Mohoric-Stare & De Costa, 2009). However, a significant proportion continued to believe ECPs were only effective within 24 hours of intercourse: 29% pre- (McDonald & Amir, 1999) and 40% post-rescheduling (Mohoric-Stare & De Costa, 2009); with only 27% aware that it was *not* restricted to the "morning after" (Calabretto, 2009). The proportion aware that the effective timeframe was at least 72 hours remained steady: 26% before (McDonald & Amir, 1999) and 20% after rescheduling (Mohoric-Stare & De Costa, 2009). Only one study asked about perceived effectiveness of ECPs; in this national survey 74% said ECPs were effective or very

effective at preventing pregnancy (Hobbs et al., 2011).

Knowledge sources

Two surveys conducted pre-rescheduling showed that women who had used ECPs were more likely to say they learned about ECPs through friends and family (40-51%), media/magazines (17-29%), or school (13-19%) than a health service or doctor (17-20%) (McDonald & Amir, 1999; Pyett, 1996). While no surveys post-rescheduling reported on where participants had learned about ECPs, ECP-experienced women in a qualitative study described very similar sources: school, siblings, friends, parents, and doctord (Hobbs et al., 2009). The same women said their ideal source would have been at school but from an independent body, rather than a teacher or staff member they knew.(Hobbs et al., 2009) When asked where information on ECPs should be available, a general sample of women were more likely to select health settings (84% medical centre, 53% pharmacy, 33% family planning) than school (36%) or the internet (35%) (Hobbs et al., 2011).

Using ECP

In surveys with general samples, post-rescheduling, the proportions reporting ECP-use were steady: 29% among university and college students (Mohoric-Stare & De Costa, 2009) and 27% among a national sample (Hobbs et al., 2011). Among clinical samples, the proportion of women reporting ECP-use had increased over time: 6% in 1997 (based on data from 1992) (Weisberg & Fraser, 1997), 29% in 1999 (McDonald & Amir, 1999), and 43% post- rescheduling (Novikova et al., 2009). After rescheduling, surveys found the majority of ECP-users had used ECPs only once: 50% of university and college students (Mohoric-Stare & De Costa, 2009) and 69% of a national sample (Hobbs et al., 2011). Single use was also the most common reported experience in a clinical sample (pre-rescheduling): 49% once, 23% twice, 27% 3+ (Pyett, 1996).

The majority of ECP-users in a focus group study said they would use ECPs again; although the authors note "they would not plan to use it" (Hobbs et al., 2009). A survey found only 16% would be "extremely likely" or "likely" to use it again (Pyett, 1996). Only one survey asked women about home supply; only one respondent of 600 reported storing ECP for future use (Hobbs et al., 2011). While some ECP-experienced women in a focus group study felt it was a good idea to have a home supply (advance provision), especially for those who did not have easy access to a pharmacist, participants expressed concern that this could encourage "misuse", that women might "just take advantage of it" (Hobbs et al., 2009).

After rescheduling, 9% of women in a general sample had thought about using ECPs but had not. The most common reasons were: not believing they would become pregnant (57%), fear of side effects (33%), not being able to access it within what they believed to be the effective time period (28%), too inconvenient to obtain (26%) and too expensive (10%) (Hobbs et al., 2011). While 10% of women in that survey said they had not used ECPs because of cost, 79% of all respondents said they would find it somewhat/very easy to pay the average cost of ECPs (then $AUD25) (Hobbs et al., 2011). That is, cost may be a major barrier for a minority of women.

Single women, women who were in a relationship but not living with their partner and women who were living with a partner but not married were more likely to report ECP-use than married women (survey conducted after rescheduling) (Hobbs et al., 2011). A pre-rescheduling survey found the episode of intercourse precipitating ECP-use was overwhelmingly with a regular partner (76%); 11% was with an occasional partner and 13% with a new partner (Pyett, 1996). A review of medical records in the same period revealed women seeking ECPs were significantly more likely to have a partner than matched controls attending the same clinic (Fox et al., 2004). Relatively few women (6-8%) reported their use of ECPs was for their first experience of sexual intercourse with a man (Fox et al., 2004; Pyett, 1996). A pre-rescheduling survey found the episode of intercourse precipitating ECPs had usually (91%) occurred in the woman's or her sexual partner's home; the remaining locations were, someone else's house (4%), a hotel/motel (2%), or a car (2%) (Pyett, 1996).

Four studies reported on women's contraceptive use during the sexual encounter that led to ECP-use. Two studies found the most common reasons for ECP-use were contraceptive failure (31-47%; these included condom failure, sick while using oral contraceptive pill (OCP), missed/OCP, and partner failure to withdraw), and no contraceptive use (34-51%; including during sexual assault and in the context of alcohol use) (Fox et al., 2004; Pyett, 1996). Two qualitative studies reported similar findings (Calabretto, 2004; Keogh, 2005). Medical reasons prevented some women from using a preferred contraceptive method, others had engaged in unplanned sexual intercourse and were unable to implement their preferred method, and finally some women used ECPs as part of their contraceptive strategy (Keogh, 2005). Two studies reported on women's contraceptive use at the time they were seeking emergency contraception. One survey found that while condoms were the most commonly used method (60%), they were the usual form for only 34%; ECPs were the

usual form for 45% of women exclusively, and for 18% in combination with other contraceptives (Pyett, 1996). The remaining women used condoms in combination with withdrawal (7%), withdrawal alone (3%), diaphragm (< 3%) or IUD (<2%) (Pyett, 1996). A review of medical records found women seeking emergency contraception were significantly more likely to rely on condoms and less likely to be using hormonal contraceptives than matched controls (Fox et al., 2004).

Accessing ECP

The majority of reviewed studies (6/11) were conducted pre-rescheduling so women reported accessing ECPs through pharmacies (with a prescription), family planning clinics, general practice, hospital emergency departments, sexual health services, and university clinics. One early study found that among those who had ever tried to obtain ECPs, 12% had been unsuccessful (Weisberg & Fraser, 1997). Another study found 7% of women were unsuccessful pre-rescheduling and 4% unsuccessful post-rescheduling (Novikova et al., 2009). No study explored why women were unsuccessful.

In a pre-rescheduling qualitative study, only a few women reported feeling comfortable seeking ECPs via their usual GP ("I was pretty comfortable with her … I'd known the doctor all my life"). Others described seeking a GP other than their usual physician because of a perceived stigma of needing ECPs ("he thinks highly of me now and I don't want him thinking less of me") or because of concerns around confidentiality where they shared their GP with family members ("I wouldn't have wanted my dad to find out. Only out of respect for him"). Some women simply did not have a regular GP, while others attended hospital emergency or after-hours services because they saw their need for ECPs as a medical emergency (Calabretto, 2004). Concern about being stigmatised through ECP-use persisted after rescheduling. Women reported avoiding pharmacies where they were known: "I would never go in my home town because I know everyone that works in the pharmacy" (Hobbs et al., 2009). A post- rescheduling survey using hypothetical scenarios found 23% of students would be too embarrassed to purchase "in a small town or other place where people knew you"; 58% would be embarrassed but able to purchase. In a hypothetical scenario going to a "pharmacy or clinic to ask for it in a place where you no-one was likely to know you" only 5% would be unable to purchase (51% would be embarrassed but able to purchase) (Mohoric-Stare & De Costa, 2009).

All the women in a pre-rescheduling qualitative study described their experience of accessing ECPs as stressful; although they reported increased confidence when they accessed ECPs on subsequent occasions. Challenges included not knowing how or where to access it, being unable to find a provider or an after-hours service so they would be within the effective timeframe, and being unable to find an appropriate provider who would be sensitive to their situation ("I wanted to go to a place which was suitable for my age group and the situation I was in and the people are especially trained to deal with me").Women mentioned needing financial, practical, emotional and moral support from a partner, friends or family member, and also noted male partners not engaging at all or to the extent they felt they needed (Calabretto, 2004).

Interactions with health care providers

ECP-experienced women in a pre-rescheduling qualitative study felt judged by health practitioners ("she really made me feel as if I'd done something wrong"; "get a rap over the knuckles), uncared for when triaged as a low priority by hospital staff ("I don't think they really cared") and patronised when receiving contraception information ("the safe sex talk") for what they perceived as a contraceptive failure rather than a lack of knowledge. Some women felt high levels of distress about contraceptive failure and risk of pregnancy. Some reported that GP questioning felt intrusive: "You just think they're prying and you think they should just shut up and mind their own business" (Calabretto, 2004). A post-rescheduling qualitative study found that while ECP-experienced women said that obtaining ECPs from a pharmacist was "easy", "simple" and straightforward", they were surprised to be questioned by the pharmacist about the personal circumstances that led to the need for ECPs. One woman commented, "like he said, 'Oh like was that with your partner or did you know the person?' Or something along those lines. I remember being quite taken aback and thinking that's none of your business". Women wanted the interaction with the pharmacist to be brief, and did not welcome advice about future contraception or safer sex: "if I wanted to talk to someone about, you know, proper contraception, then I'd go and talk to my own GP or come to somewhere like here [a family planning clinic]" (Hobbs et al., 2009). Half of women in a post-rescheduling national survey agreed it was the pharmacist's role to give advice on contraception (53%) and STIs (51%) during the consultation (Hobbs et al., 2011).

Among women seeking ECPs through a sexual health clinic (pre-rescheduling) 43% were offered an STI screen and 28% were prescribed hormonal contraception in the consultation or at a follow up appointment (Fox et al., 2004). A qualitative study found participants could not remember much

about information they received from a range of providers including GPs, sexual health clinics and hospital emergency departments about recommended follow-up pregnancy or STI testing (where relevant) (Calabretto, 2004). Few reported receiving written information; most said verbal instructions and ECPs package inserts were the main information provided (Calabretto, 2004). A post- rescheduling survey reported women generally felt the pharmacist told them all they wanted to know about how to take ECPs (84%), the side effects of ECPs (70%), when to take ECPs (87%), and how effective ECPs were (63%) (Hobbs et al., 2011). However, only 24% recalled the pharmacist giving advice about future contraception and only 19% recalled advice about STIs (Hobbs et al., 2011).

Women's experiences of privacy when obtaining ECPs through a pharmacy were examined by studies post-rescheduling. ECP-experienced women in a qualitative study expressed a "real concern" about privacy: they felt awkward and embarrassed, with one woman describing feeling that other customers were looking on (Hobbs et al., 2009). A national survey found that 62% of those who had accessed ECPs through a pharmacy felt they had sufficient privacy; of the women who did not, 88% felt they were unable to talk in private, 72% felt that others could see them obtain ECPs and 22% felt their details could be passed on (Hobbs et al., 2011).

Attitudes to ECP use

Women were overwhelmingly supportive of ECPs being available from a pharmacist without a doctors' prescription: 44% (Pyett, 1996) and 71% (McDonald & Amir, 1999) of clinical samples before rescheduling, and 65% (Calabretto, 2009) and 71% (Hobbs et al., 2011) in general samples after rescheduling. Experienced users supported ECPs being a pharmacist medicine because they enhanced access and gave women direct control over their contraception (Hobbs et al., 2009).

However, women sampled before and after ECP's rescheduling had concerns about the health impact of ECP-use. Before, 78% of women seeking pregnancy counselling were unsure if ECPs were harmful to their health (McDonald & Amir, 1999). After, only 45% of women in a national survey believed ECPs were safe or very safe for women (Hobbs et al., 2011). A significant proportion of women across several studies said they would not use ECPs because of health concerns, including 21% of university students (Calabretto, 2009). Of women attending abortion clinics, 10–15% regarded ECPs as "unhealthy" and were unwilling to use them, while 14–20% were unwilling to use them because they were concerned about side effects (tiredness, risk of breast

cancer, blood clots, damage to uterus, future fertility) (Novikova et al., 2009). A minority of women (13%) in a national survey expressed concerns around future fertility (Hobbs et al., 2011). The safety of ECPs if a woman was not aware she was already pregnant was a major concern: 39% disagreed and 55% were unsure if ECPs were "medically safe" (the question did not specify safe for the woman or safe for the pregnancy) (Calabretto, 2009). Of women in a national survey, 61% believed ECPs could cause birth defects or a miscarriage and 24% were unsure (Hobbs et al., 2011).

Studies conducted after ECPs became available without a prescription found women had significant concerns about the moral and social impact of ECP-use, and in particular the consequences of easier access. A national survey found 38% agreed or strongly agreed that ECPs availability would "lead to more women having sex without using contraception", while 43% agreed or strongly agreed that "men would be less likely to use a condom if they knew that their female partners could get the ECP whenever they needed it" (Hobbs et al., 2011). A qualitative study with experienced users found some were concerned that easier access might encourage other women to "misuse" ECPs, meaning deliberately have unprotected sex and then use ECPs afterwards: "I think a disadvantage might be that because it is so easy to access now, it might encourage young girls or whoever to have unprotected sex and think, 'Oh I'll just go to the chemist in the morning'". The authors reported that many women said cost could be an effective deterrent to such "misuse": "I don't think you want it really cheap because then it just ups the possibility of opening it up as an alternative form of contraception" (Hobbs et al., 2009).

Discussion

The reviewed studies demonstrate several consistent findings and provide evidence of some changes and some persistent issues since ECPs became available from a pharmacist without a doctor's prescription in Australia. In this discussion, we focus on issues relevant to the uptake of ECPs in countries where ECPs are available via a community pharmacy without a prescription.

Misinformation about ECP is a barrier to uptake

While there was very high awareness of ECPs – more so when it was described as the "morning after pill" – studies demonstrated high levels of confusion and misinformation. Women were unsure how to obtain ECPs, with high proportions unaware it was available without a prescription. There was widespread misunderstanding about how ECPs prevents pregnancy, with significant proportions of women believing it to be an abortifacient; this persisted across time. Our findings

echo compelling international evidence that a significant proportion (30-40%) of women do not know how ECPs work (Campbell, Busby, & Steyer, 2008; Gainer et al., 2003; Lopez-del Burgo et al., 2012; Nappi, Lobo Abascal, Mansour, Rabe, & Shojai, 2014). These misconceptions are unsurprising; two Australian pharmacy studies show very few pharmacists report providing information on mode of action when they dispense ECPs (Hussainy et al., 2011; Queddeng, Chaar, & Williams, 2011) .

The reviewed studies showed considerable confusion about the effective timeframe for ECPs, with many women believing it was limited to 24 hours after unprotected intercourse. LNG-ECP is licensed for use 72 hours post-intercourse and pharmacists can dispense for use up to 5 days post-intercourse (Pharmaceutical Society of Australia, 2011). UPA is effective for up to 5 days (Glasier, Cameron, et al., 2010). Finally, health concerns persisted, with specific concerns about the impact on a pregnancy. Many women reported that this lack of confidence in the safety of ECPs prevented them from using it.

The reviewed studies show most women who had obtained ECPs from a pharmacy had done so without a prescription. The experience of accessing ECPs changed from women describing it as stressful, to women reporting accessing ECPs from a pharmacist as easy and straightforward; this is good news.

Women had unfavourable views of contraception and sexual health counselling

Women expressed surprise and disapproval at their health care provider asking detailed questions about their sexual history. They described such questioning from a pharmacist as prying; they wanted the consultation to be brief, suggesting they would seek advice on contraception from their own GP or family planning provider. Women's reluctance to receive information about ongoing contraceptive use during their consultation with a pharmacist echoes findings from a systematic review of community pharmacy ECPs supply (Anderson & Blenkinsopp, 2006).

The moment a woman is focused on responding to a contraceptive emergency may not be an ideal time to consider long-term contraception options and/or STI prevention. In the reviewed studies, less than half of women agreed it was the pharmacist's role to give contraceptive advice during the ECP-consultation, and many could not recall receiving future contraception and STI testing information. Pharmacist studies in Australia, Serbia, and the UK show only a minority had

counselled women on regular contraception (and even less on STI screening) (Glasier, Manners, Loudon, & Muir, 2010; Milosavljevic, Krajnovic, & Bogavac-Stanojevic, 2016; Queddeng et al., 2011).

Given many women had used contraception during the intercourse that precipitated ECP-use, generic advice may be irrelevant and experienced as insulting. Specific and tailored guidance on managing the oral contraceptive pill, avoiding condom failure or exploring long-acting reversible contraction, or a simple encouragement to see their GP or family planning clinic about avoiding contraceptive failure may be more appropriate. Women not using any contraception at the time they required ECPs may need ongoing support to develop a better contraceptive strategy for their individual situation, advice around developing skills to negotiate their preferred strategy with a partner, or advice on contraception that does not require negotiation with a partner. There is some evidence that direct intervention may be more effective than general advice: a UK pilot study found women were far more likely to be using effective contraception at follow-up when they had received a short supply of progestogen-only pills or an appointment at a family planning clinic, than if they just received the standard advice (Michie et al., 2014).

Concerns that ECP-provision outside a GP consultation would miss opportunities to address ongoing contraceptive needs lead to many countries mandating pharmacist counselling. For example, the Pharmaceutical Society of Australia developed a protocol for pharmacists that included counselling regarding sexual health and safer sex practices (Pharmaceutical Society of Australia, 2004). This was subsequently softened to advise that pharmacists offer general information about the appropriate use of contraception or a referral (Pharmaceutical Society of Australia, 2017). As Queddeng and colleagues (2011) note, while contraception and STI information is important, it "does not need to be provided to ensure the appropriate use of the ECP – the primary goal of the [pharmacist] consultation".

Moral prohibition on ECP is a barrier to uptake

Despite broad support for ECPs and for access without a prescription among women in the reviewed studies, stigma associated with ECPs persisted. There is a clear moral discourse running through our findings: ECPs should not be used as a preferred contraceptive strategy nor as a licence to behave "irresponsibly" (women should take responsibility for successful contraception). These perceptions seemed especially resonant in studies conducted after rescheduling, that is, after ECPs

became more easily accessed. Women in the studies were concerned that easy access might encourage women to "misuse" ECPs by having unprotected sex. The idea that women should use ECPs for emergencies and not treat them as a contraceptive reflects international findings (Gainer et al., 2003). ECP-users in one UK study were keen to characterise themselves as "responsible" users, and expressed concern about repeated ECP-use by less responsible others (Bissell & Anderson, 2003). Moral concerns were a recurring theme in a systematic review of community pharmacy supply of ECPs (Anderson & Blenkinsopp, 2006). This moral discourse is also evident among pharmacists, with UK pharmacists contrasting "responsible" ECP requests due to missed pills and contraceptive failure, with "irresponsible" ECP requests due to unprotected sex; they expressed concern that free/low-cost ECPs through a pharmacy would encourage unprotected intercourse (Bissell & Anderson, 2003). Although the role of community pharmacists' moral beliefs on their willingness to prescribe ECPs has been explored in several settings (Borrego et al., 2003; Hussainy et al., 2011; Milosavljevic et al., 2016), we are unaware of research on how their beliefs shape specific counselling practices, such as commentary on in/appropriate use of ECPs.

The moral fear described above contrasts with the evidence: the reviewed studies show that in Australia, single use of ECPs was the majority experience, and overwhelmingly a response to a contraceptive mishap within an established relationship, after an occurrence of intercourse in a woman's or her partner's home. Equal proportions of women reported using ECPs following contraceptive use as reported using ECPs following contraceptive non-use due to unplanned sex, medical reasons, or where ECPs were the primary contraceptive method. The reviewed studies conducted after rescheduling did not ask about the immediate context (relationship or contraception) of ECP-use so we do not know whether women's use of ECPs changed as a result of them becoming easier to access. However, the striking absence of women reporting that they had a supply of ECPs at home in case of contraception non-use or mishap (termed 'advance provision' in Australia) could be interpreted as evidence that women have not adopted what the moral discourse frames as an "easy" option. Reflecting international findings (Eshre Capri Workshop Group et al., 2015), the proportion of women in Australia who have ever used ECPs did increase after rescheduling: from 23% in 2001-2002 to 34% in 2011-2012 (Richters et al., 2016). However, studies in the UK and US fail to find any evidence of an increase in unprotected sex after rescheduling (Marston, Meltzer, & Majeed, 2005; Raine, Harper, Rocca, & et al., 2005). Indeed, a Cochran Review of randomised controlled trials conducted in United States, China, India and

Sweden on advanced supply of ECPs (the most liberal approach to ECPs), found no increase in unprotected intercourse and no increase in rates of STIs (Polis et al., 2007).

Despite enhanced access to ECPs in many countries – often with no doctor's prescription required – there is no evidence to date of a population level effect on the rate of unintended pregnancy (Polis et al., 2007; Raine et al., 2005; Raymond, Stewart, Weaver, Monteith, & Van Der Pol, 2006; Raymond et al., 2007). Even when women have an advance supply, they often do not use it after an episode of risky intercourse (Raine et al., 2005; Raymond et al., 2006); this tends to be explained in terms of a low perception of pregnancy risk. Our findings of a persistent concern among women that they should not "misuse" use ECPs, suggests the role of a moral discourse in the underutilisation of ECPs needs further investigation.

Limitations

With the exception of one national survey, the study samples cannot be taken to be representative of Australian women; general samples were restricted to university students and the rest captured women seeking ECPs or abortion counselling. The experiences of women outside metropolitan areas, where access to community pharmacies may be restricted, were not well represented in the reviewed studies. While 75% of Australian pharmacists reported they had occasionally declined ECPs provision (Hussainy et al., 2011), no reviewed study asked women about pharmacist refusal to dispense ECPs. The second most common reason pharmacists reported for declining ECPs was a concern about the patient's age (Hussainy et al., 2011), but no study reported on the experiences of women aged under 16 years. No study asked women what actions they took around contraception and STIs after their pharmacy consultation; that is, we do not know the utility of pharmacist counselling. Finally, while we know the proportion of women in Australia who have ever used ECPs increased after rescheduling (Richters et al., 2016), there is a lack of data on whether patterns of ECP-use have changed since rescheduling made it more accessible in Australia.

Conclusion

Our systematic narrative review demonstrates that women continue to misunderstand how ECPs work, the effective timeframe, how to access them, and their safety; this reduces the window of opportunity for ECP-use. The persistent moral discourse around acceptable versus unacceptable ECP-use is likely to influence women's decisions around their own ECP-use and the way they talk about ECP-use to others. International evidence suggests enhanced access to ECPs has yet to reduce

the rate of unintended pregnancy. Our findings suggest we should continue to enhance women's knowledge about ECPs but we also need to directly engage moral prohibitions that may discourage women from using ECPs.

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Table 1: Study Characteristics

Study	Aim	Design	Location	ECP experienced?	Pre/Post resched uling?
Weisberg, et al.,1997 (Weisberg & Fraser, 1997)	To examine knowledge and use of EC among women with unintended pregnancy	Quantitative, cross-sectional study of all women seeking pregnancy termination (n=2249 responded); self-report questionnaire; descriptive statistics	Metropolitan, NSW; clinical	6%	Pre

Pyett, 1996 (Pyett, 1996)	To examine the sociodemographic characteristics of women who had presented to family planning clinics for EC and to investigate their reasons for engaging in unprotected heterosexual intercourse.	Quantitative, cross-sectional study of all women requesting or being recommended EC (n=206/297responded); self-report questionnaire; descriptive statistics	Metropolitan, Victoria; clinical	56%	Pre
McDonald, , et al., 1999 (McDonald & Amir, 1999)	To determine the level of awareness of emergency contraception in women seeking pregnancy counselling and to investigate their attitudes towards emergency contraception	Quantitative, cross-sectional study on EC of all women presenting for pregnancy counseling (n=153/ 166 responded); self-report questionnaire; descriptive statistics, chi square	Metropolitan, Victoria; clinical	7% used for current pregnancy	Pre
Calabretto, 2004 (Calabretto, 2004)	To examine women's experiences of used ECP.	Qualitative study of EC with convenience sample of 13 young women; semi-structured interviews; thematic analysis	Not stated	All	Pre
Fox, et al.,2004 (Fox et al., 2004)	Describe the demographic and sexual characteristics of clients attending a Sexual Health Clinic for EC and compare them with a random group of women attending the service for other reasons.	Case-control review of clinic database of all clients who received EC during 4-year period (n-267) and randomly elected controls (n=26); descriptive and univariate statistics and logistic regression	Metropolitan, NSW; clinical sample	All	Pre

Keogh, 2005 (Keogh, 2005)	To examine the situation that led to needing EC, the decision and experience of using it and the consequences for contraceptive use	Qualitative study of EC with convenience sample of 32 women; structured interviews; thematic analysis	Metropolitan, Victoria; clinical sample	All	Pre
Calabretto, 2009 (Calabretto, 2004)	To explore first year Australian university students' knowledge and attitudes about emergency contraception and their understanding of the risk for pregnancy.	Quantitative, cross-sectional study of EC with convenience sample of 627 (403 female and 224 male) first year university students; self-report questionnaire; descriptive statistics and chi-square	Metropolitan, Queensland; general sample	Not asked	Post
Hobbs, et al., 2009 (Hobbs et al., 2009)	To explore Australian women's knowledge of, attitudes towards and experiences of using the ECP, particularly since it has been rescheduled.	Qualitative study of EC with convenience sample of family planning clinic clients (n=27) and university students who had used or had wanted to use the ECP; focus groups separate by age (under 25 years and 25 years and over); thematic analysis	Metropolitan, across Australia; clinical and general samples	All	Post
Mohoric-Stare, et al., 2009 (Mohoric-Stare & De Costa, 2009)	To determine the extent of knowledge of EC among tertiary students in Far North Queensland, and their ability to access EC in the region.	Quantitative, cross-sectional study of EC with convenience sample of 460 (291 female and 164 male) (tertiary students; self-report questionnaire;	Regional, Queensland; general sample	Not reported separately for women	Post

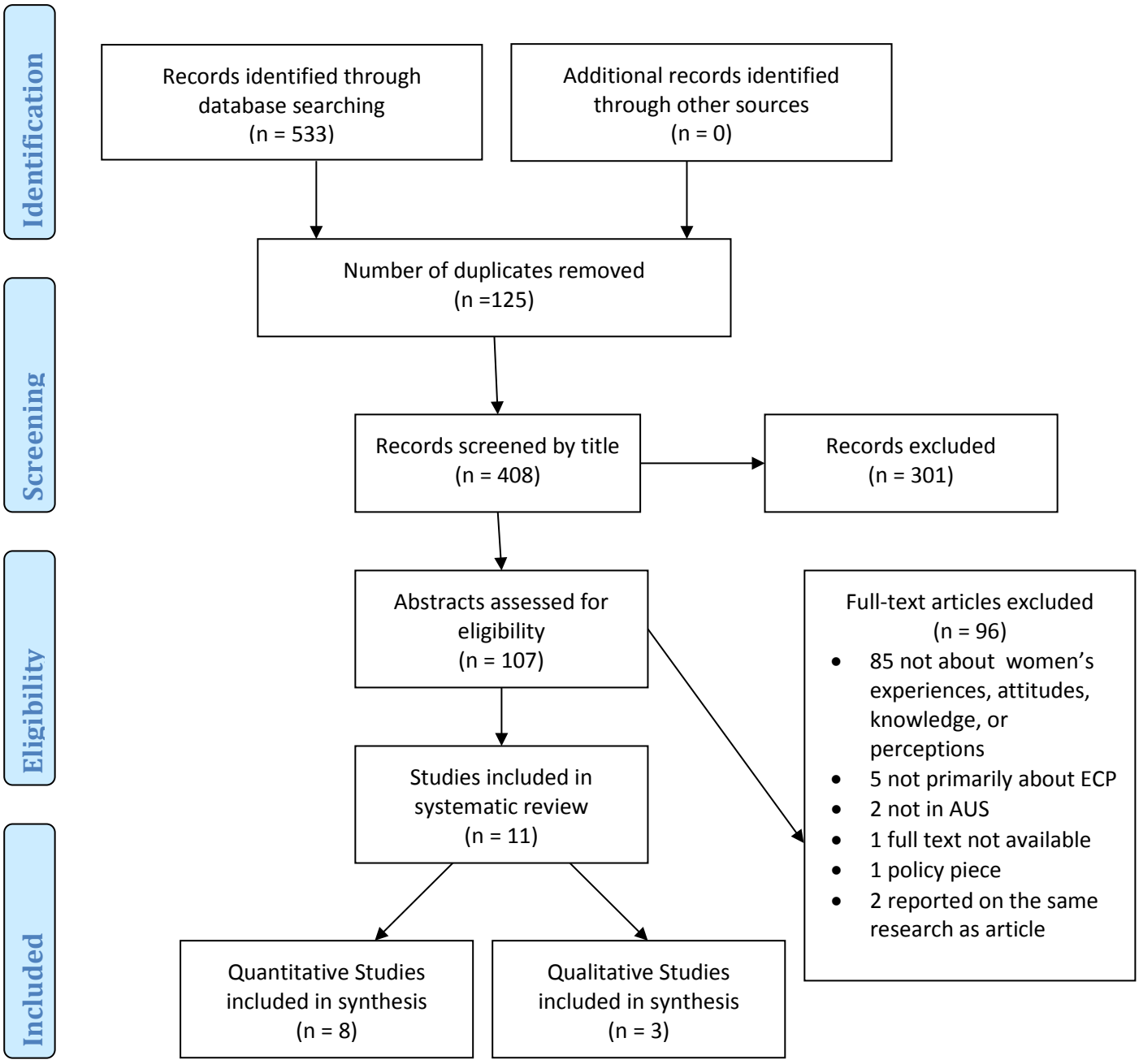
		descriptive statistics			
Novikova, et al., 2009 (Mohoric-Stare & De Costa, 2009)	To determine if rescheduling increased knowledge and use of ECP	Quantitative, cross-sectional study of EC conducted pre and post rescheduling with a convenience of women (N=718) attending for abortion; self-report questionnaire;	Metropolitan, NSW; clinical	Across three time points: 41%, 45%, 44%	Pre and Post
Hobbs, et al., 2011 (Hobbs et al., 2011)	To investigate the knowledge of, need for, cost of, sociodemographic patterns of use of and barriers and facilitators to access to the ECP by a random sample of Australian women aged 16 to 35 years.	Quantitative, cross-sectional study of EC using national sample of 632 Australian women generated through random digit dialing; CATI survey; weighted, descriptive and univariate analysis, logistic regression	Across Australia; general sample	26%	Post

Enhancing use of emergency contraceptive pills: A systematic review of women's attitudes, beliefs, knowledge and experiences in Australia

Appendix 1 Search Strategy

1. ((postcoital or emergency) adj2 contracept*).tw.
2. (contraceptives or oral contraceptives or contraception).sh.
3. emergencies/
4. (postcoital or emergency).tw.
5. 3 or 4
6. 2 and 5
7. 1 or 6
8. exp Australia/
9. australia.in,tw.
10. 8 or 9
11. 7 and 10
12. Remove duplicates from 11

Appendix 2: PRISMA Flow Diagram



From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). *P*referred *R*eporting *I*tems for *S*ystematic Reviews and *M*eta-*A*nalyses: The PRISMA Statement. PLoS Med 6(6): e1000097. doi:10.1371/journal.pmed1000097