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3 Typology, risk and protective factors for reproductive coercion:
4 A scoping review of the literature
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1. Introduction

Reproductive coercion (RC) is a term introduced by Miller et al. in 2010 to refer to “male partners’ attempts to control a woman’s reproductive choices” (p.2) [1]. Victims of RC can be adolescents and/or adults, in heterosexual and/or bisexual populations, and in populations with and without a history of IPV [8]. One of the first reviews was performed by Miller and Silverman [6] highlights the relationship between unwanted pregnancy and the presence of male partner violence, specifically in the form of RC.

As such, it represents a limitation of sexual autonomy and a major threat to sexual reproductive health, which according to the World Health Organization is an integral part of overall health, well-being and quality of life. Autonomous decision-making of women with regard to their sexual and reproductive functioning can be reduced through various factors, including socio-economic conditions, lack of support, exposure to violence, or the prevailing legislative and policy context (for instance, when control over sexual and reproductive autonomy is exercised by state policy or legislation) [2]. In RC, this control is exercised by a person with whom one is, or has been, involved in a close personal relationship, such as a partner or family member.

In the wake of enhanced societal interest in improving reproductive and sexual health, RC has increasingly gained recognition over the past years, also from researchers. Several empirical studies have documented the characteristics of RC, the contexts in which it occurs, and potential risk factors for its occurrence. And although the academic interest in RC is relatively recent, several literature reviews have already been published on the topic [3,4].

However, the existing literature as represented in these reviews mainly focuses on RC within the context of intimate partner violence (IPV) [3,4,5], whereas reproductive coercion may also occur in relationships where violence is not present. Some authors such as Grace and Fleming [5] believe that, although the perpetrators are not always intimate partners and may also be the partner's or victim's family, RC is a subset of intimate partner violence. While other authors such as Rowlands and Walker [11] point to the need to distinguish between IPV and RC, although there are similarities between the two phenomena and they may overlap.

Moreover, nearly all the published research on RC thus far has been performed in the US and Canada, with very few studies originating from other parts of the world. This may introduce a culturally and socio-demographically biased view on the ways in which RC is experienced

and on the factors that underlie it. Finally, despite the growing number of studies of the problem, empirical evidence on programs or interventions to prevent RC remains scarce.

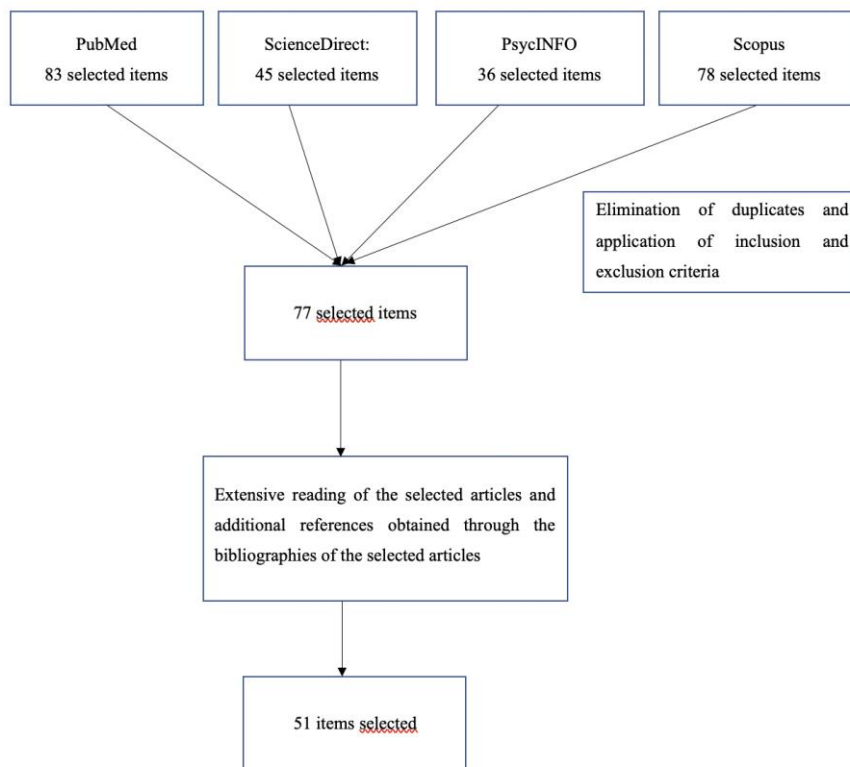
The narrative literature review presented in this paper aims to complement existing research on RC by summarizing the existing reviews of the literature and adding findings from research conducted outside North America, thereby considering RC as separate from IPV. In addition, it will focus on the possibilities for primary and secondary prevention of this problem in addition to its prevalence, typology and potential risk and protective factors.

2. Method

To retrieve articles on RC, a literature search was performed on ScienceDirect, PsycINFO, Scopus and PubMed, using the keywords reproductive coercion, contraception sabotage, contraceptive coercion, condom sabotage, pregnancy coercion, and pregnancy pressure. To be considered for inclusion, articles had to be: (1) published in French or English; (2) published after 2015; and (3) presenting quantitative or qualitative data, including systematic reviews. related to RC. In terms of focus, articles included in the study could consider any of the following topics: the definitions of RC, its characteristics, different forms of RC, its prevalence with and without IPV, risk and protective factors for RC, and possibilities for prevention and intervention. Articles that only addressed IPV, unwanted pregnancy or sexual coercion were excluded.

To select studies based on these inclusion and exclusion criteria, the titles and abstracts of the identified articles were first analysed and then, after eliminating duplicates, the full text of the selected articles was read in their entirety. In a third step, an other search was performed of the reference lists of selected articles to find any additional papers. As a result of this procedure, 51 articles were retrieved and selected for this review. The PRISMA chart of the search procedure and its results is given in Figure 1.

Figure 1: PRISMA chart of the selection of articles included in the review.



To extract the information from the 51 selected articles, a two-step approach was followed. In a first instance the information from existing literature reviews published since 2016 was summarized. Next, information was extracted from the primary studies by examining data on the prevalence of the phenomenon, typology, potential risk and protective factors, and primary or secondary prevention in each of the selected articles. For further details on the included studies, see the table in Annex 1.

3. Results

3.1. Tactics of RC

To complete the information on RC deriving from the abovementioned reviews, information on the prevalence and manifestation of the phenomenon was extracted from the primary studies included in the current review. In agreement with the systematic review by Lévesque and Rousseau [3], the majority of the articles included in this review allowed to identify the three main tactics of RC: contraceptive sabotage, pregnancy pressures, and coercion during pregnancy

1. *Contraceptive sabotage* refers to interference with a woman's contraceptive method via the use of one or more manipulations: concealing, sabotaging, destroying contraceptive pills, damaging or piercing a condom, removing a condom during intercourse, not withdrawing when this was the agreed method, or extracting the vaginal ring, patch or IUD. To commit sabotage, the partner may use physical violence, threats, accusations or pressure to manipulate the female partner and interfere with the contraception. He may also prevent or reduce access to health services or refuse to support contraception financially. A specific form of contraceptive sabotage is *stealth*, whereby the condom is removed during sexual intercourse without the partner being aware of this. While the focus may be on increasing male sexual pleasure rather than on achieving pregnancy, this practice is to the detriment of the female partner's sexual and reproductive health. This opens up the question of non-consent with regard to the conditions and parameters that frame a sexual relationship, which should basically be consensual.
2. *Pregnancy-related pressure* consists of putting pressure on the partner to get pregnant, without considering her own reproductive wishes or intentions. The female partner is being pressured or forced to not use contraception and/or may receive threats of physical or psychological violence if she does not become pregnant (marital breakdown, infidelity, etc.)
3. *Coercion during pregnancy* includes coercive behaviors that occur when the woman does not comply with her partner's demands and wishes regarding the outcome of a pregnancy. This includes threatening a woman who does not want to be pregnant, forcing her to carry the pregnancy to term or to terminate it when she does not want to. The male partner may also physically harm the female partner to prevent access to abortion in various ways, such as refusal to contribute financially to the abortion, depriving his partner of a means of travel, etc.

3.3. *The context of RC*

RC typically occurs in the context of an intimate relationship between two partners. The majority of existing studies report that it is almost always the intimate partners who engages in RC. However, there is also evidence that RC can be perpetrated by a member of the intimate partner's family (e.g. in-laws) or even by a member of the victim's own family [11,12]. When RC is exercised by the extended family, it may involve the coercion of contraceptive use, abortion or sterilization. Women with disabilities appear to experience more RC in a family

context [2]. Alhusen and al. (2019) report, among other things, that RC may lead to a higher risk of unintended pregnancy among women with disabilities.

The literature also suggests that in non-western cultures women may experience RC differently, due to prevailing cultural norms, policies and laws [10]. This is particularly the case when public policies make contraception and abortion inaccessible. As such, RC must also be considered at a structural level [10].

RC can also be experienced by men [4]. The National Survey on Intimate Partners and Sexual Violence (NISVS) published by the Centers for Disease Control and Prevention in 2011 revealed that 10.4% of men report having experienced RC. Out of these, 8.7% reported having experienced pregnancy-related pressure and attempts to interfere with contraception [4,8]. In the United States, 9.7% of men have reportedly experienced RC in their lifetime [13]. A recent study among students showed that 6.15% of male students had experienced RC [14]. In a study involving 296 men in relationships, Willie and al. [15] found that 11% of the respondents had experienced RC by the mother of their child and 16% by a previous partner, while Addington [16] reported that in her sample of 1078 men and 1026 women, 3.2% of the men had experienced RC, compared to 6.5% of the women.

Studies in the US also suggest a higher risk of RC among women with a minority sexual status [3,8] and among women who have sex with men and women [7]. Within a same-sex relationship, lesbian women identifying as more feminine reported RC from other lesbian women identifying as more masculine. The latter appeared to be the main decision-makers on whether to become pregnant, how to plan and how to monitor the pregnancy [8].

3.4. Prevalence of RC

As mentioned in existing systematic reviews, estimates of RC prevalence vary widely. Lévesque and Rousseau [3] report a prevalence ranging between 9% and 16% outside an IPV setting, with the prevalence rising to 25% for couples where IPV is present. In a groundbreaking study, Alexander et al (2019) report that nearly 10% of the 118 young black women included in their study reported experiencing CR without LPI (Alexander and al., 2019).

Other studies also estimate the prevalence of RC to be between 8% and 16% among women in intimate relationships with a partner [8,12]. Using the National Intimate Partner and Sexual Violence Survey (NISVS) in the United States, Basile and al. [13] found a prevalence of RC of 8.4% among women in the US. Grace and Anderson [4] report a prevalence of 5% to 13% among women attending a family planning clinic, but also report specific prevalence

estimates for different forms of RC, namely: 7% to 11% for contraceptive sabotage, 1% to 19% for pressure to get pregnant, 0.1% to 4% for coercion to terminate a pregnancy, and 8% for coercion to maintain an ongoing pregnancy. Most recently, a recent study found that 8.6% of 202 women reported experiencing CR during their last pregnancy [17]. In another prevalence, of 240 women surveyed, Skracic and al. (2021) report that 13.9% of these women reported verbal CR and -16.1% experienced behavioural CR.

Prevalence estimates may also depend on the victim's age: a study of 550 sexually active teenage girls found that 12% had experienced RC and that 17% had experienced physical or sexual violence in a relationship with another teenager [18]. Finally, in a study of 14 to 17-year-old girls, 29 of 149 participants reported having been exposed to RC [19].

It should be noted that these prevalence estimates should be considered with caution, as there is a wide methodological variation between studies in the way prevalence is estimated. Since RC is often included in scientific studies dealing with the more general terms of domestic violence or IPV, it is not easy to understand the mechanisms underlying RC and its specific impacts [25]. In this sense, Grace advocates to consider RC as a distinct phenomenon and to define its antecedents and consequences independently of IPV without obscuring the links between both phenomena [12].

3.5. Risk and protective factors for RC

3.5.1. Individual risk factors

Being a teenager or young adult remains a predominant risk factor for RC [3,4,11,19,21,22,23]. A recent study by Swan et al. [14] confirms this finding by reporting that younger women and undergraduates are at greater risk of RC [14]. However, a study by Grace and al (2022) suggests a low prevalence of RC (3.1%) among a sample of 2291 adolescents. They also report that older age, younger age at first intercourse, black and American race, bisexuality, and a large number of sexual partners and previous pregnancy are associated with the experience of RCC in these students.

The same applies to having a minority or multiethnic background, although the results are more nuanced [3,4,5,10,22]. Several studies show an increased risk of RC among black, African-American, Hispanic and multi-ethnic women [9, 21, 25, Munoz and al. 2022).]. While Basile and al. [13] report that non-Hispanic black men and women in particular experience RC

more often. This is also the case for Munoz et al (2022) who report a higher prevalence of CR among the Hispanic participants in their study.

In a similar way, a study of 354 students in the US found that being of a non-white ethnicity was a risk factor for RC [26]. Other studies show more ambivalent results [3,4,5,13,23]. For instance, one study conducted in the Bronx reported that self-identifying oneself as 'white' was *more* associated with RC than being non-Caucasian [28], while others found no significant difference in the experience of RC among Black, Hispanic and White students [7, 15].

In particular, a study by Holliday and al (2018) shows the existence of racial differences in experiences of IPV and CR in relation to unintended pregnancy. These differences related to experiences of IPV and CR, gender roles in intimate relationships and trauma history. Among the white women interviewed, more death threats and IPV related to pregnancy and sexual abuse were recorded. Among the black women interviewed, pregnancy was influenced by CR. The latter was linked to impending incarceration, subfertility and non-use of condoms. Contraceptive choices were often male dependent.

Other risk factors that have been mentioned in the literature are: being a member of a sexual minority [5], not having health care insurance [4], being undocumented [10], being homeless or residing with in-laws [3], having had sex for money [27], and having depressive symptoms [4]. As for education and financial status, research outcomes are ambivalent or contradictory, up to the point where it is not clear whether they function as a risk or protective factor [3,4]. Being a woman with a low socio-economic status is potentially a risk factor for RC due to the difficulty of accessing health care and pursuing a pregnancy in a precarious context [10,22,28]. On the other hand, at least one study showed no association between RC and factors such as age, relationship status and having health care insurance [27].

Alcohol consumption appears to be a factor that influences the practice of stealthing in particular [29]. Alcohol consumption during sexual intercourse and excessive alcohol consumption are also risk factors for not using condoms and other behaviors that do not take the consequences of unprotected sexual intercourse into account. In a similar vein, drug use has also been reported to be a risk factor for RC. In a study of 96 American women participating in an SEP, of which 79% were methamphetamine users and 74% heroin users, 62% had experienced IPV or RC in the past 3 months [30].

Finally, PettyJohn et al. [31] suggest that having a history of foster care is also a risk factor for RC. In their study of 136 adolescents with a history of foster care, 30.1% experienced

RC [31]. This was particularly true of women of color and those from the LGBTQ+ community [31].

3.5.2. Relational risk factors

Although RC may occur in the absence of IPV [3,4,5,13,16,21], being a victim of IPV is considered as a factor that significantly increases the risk for RC. Studies in the US reveal a higher prevalence of RC when a woman experiences IPV. A study of women aged 18-44 years attending an urban obstetrics and gynecology clinic found that almost one-third of the women in the sample who experienced IPV also experienced RC in their relationship [7]. A recent study among college women in New York found that 50% of the women who experienced RC also reported partner violence [20], and in a study of 660 women recruited from domestic violence shelters, almost a third reported experiencing RC [21]. Other research suggests that women who experience IPV are eight times more likely to experience RC than women who do not [22]. On the other hand, RC *can* also occur without IPV. An Australian report published in 2017 found that 26% of women who experience RC do not report other forms of violence or control [2]. Another Australian study estimated the prevalence of RC in coexistence with IPV to be 21.1%, as compared to 3.1% in the absence of IPV [23]. While this prevalence is much lower, it does suggest that RC can indeed occur without IPV. In addition to finding an association between IPV and RC among young pregnant and parenting couples, Willie et al. [15] reported that women who experienced RC are at greater risk of IPV within 6 months following the event. They also found that young women and men who had experienced RC in a previous relationship were at a greater risk of experiencing RC with a new partner. Yet while this would suggest that a history of RC is also a risk factor [3,4,5,15,20], this relationship was not confirmed in a study by Swan et al. [14], where physical violence was also not associated with RC. A recent study conducted in 2022 indicates a link between seeking accommodation due to IPV and RC. In this study of 70 women with IPV, 16.4% of those seeking accommodation due to IPV had experienced an RCA in the past three months. In particular, RC was associated with the frequency and severity of IPV (Grace and al.,2022). Finally, in a study conducted in 2022, Liu et al. show that women in abusive and violent relationships have less control over their fertility, have an increased risk of unwanted pregnancy as well as poor pregnancy outcomes (preterm birth, miscarriage).

An increased risk of RC has also been reported for women who are single or who have an unstable relationship status [4,5,9,22,26], for separated women [23], and for women with an older partner [4]. Adolescent girls exposed to both relationship violence and RC are more likely

to have a partner who is older [18]. In a more general sense, living in a gendered and socially normed context with strong gender inequalities has been reported to increase the risk of violence against women, including RC and sexual violence [3,4,10].

As for perpetrators of RC, it appears that young men who exhibit violent behaviors are more likely to want their partners to become pregnant [32]. They then use threats and physical assaults to enforce their demands, including through sexual intercourse and non-use of contraceptives, thereby increasing pregnancy rates.

3.5.3. Protective factors

While the risk factors for RC are relatively well researched and documented, very few studies have considered the factors that can protect against RC. In the review by Lévesque & Rousseau [3], no protective factors for RC were reported. In contrast, Grace and Fleming [5] mention that attending urban clinics, inbreeding and higher parity may be a protective factor for RC. Other factors that may facilitate women's recognition of an RC experience have also been identified, such as getting informed about RC; confiding in a friend or acquaintance; or having a partner who respects reproductive rights [24]. Yet overall, protective factors against RC seem to be rather neglected in the literature.

3.6. Preventive interventions in the field of RC

Given the very limited information about protective factors against RC, it is not surprising that thus far very few studies have been conducted on interventions to prevent RC. One exception is a study by Miller et al. [1], who evaluated the effectiveness of a brief educational intervention on RC titled *Addressing Reproductive Coercion in Health Settings* (ARCHES) delivered by health professionals in family planning centers. The program was shown to significantly raise the awareness of partner violence resources among participating women, as well as their self-efficacy to enact harm reduction behaviors and the use and sharing of a domestic violence hotline number. Although it did not significantly reduce RC or partner violence per se, it reduced RC among women experiencing multiple forms of such abuse a year later.

Another study [33] looked at the effectiveness of an intervention to reduce IPV and RC in family planning centers by educating women about existing resources and risk reduction strategies. The intervention encouraged the discussion of IPV and RC in an atmosphere of trust and increased the participants' knowledge of the various services that are available to cope with

interpersonal violence. It also provided support to patients and encouraged empowerment through enhancing the participants' ability to help other women.

In terms of secondary prevention, the focus can be placed on enhancing caregiver skills to identify and address RC. An exploratory study conducted in four family planning clinics explored the effect of two training programs for health professionals: One was a standard education about RC and IPV, while the other focused on teaching communication skills to address sensitive subjects [34]. Both trainings formats were found to increase and improve the quality of health professionals' communication about RC and IPV. In addition, clinics that had received the standard RC and IPV education training communicated more about RC-related topics following the training [34].

An effective resource to screen for RC is the 'Safety Card' [7], which is a small card providing essential information on risk reduction strategies, safety planning and additional resources about IPV, RC and sexual coercion that a health professional can review with her patient in less than a minute. The safety card helps patients link coercive behaviours to reproductive health problems [8]. A randomized controlled trial of the use of the safety card in family planning clinics showed that the safety card in combination with provider education could reduce women's risk of forced pregnancy by 71%. Women who used the card were also more likely to leave a relationship they considered unhealthy or unsafe [7].

A digitalized version of the safety card is to use an interactive app with patient activation messages combined with provider scripts to guide interactive patient-provider discussions about IPV and RC, and to reduce caregiver and patient barriers to disclosure of harmful partner attitudes. Hill et al. [35] compared two versions of such *Trauma-Informed Personalized Scripts* (TIPS) interventions: TIPS-Basic contained only personality scripts for caregivers, while TIPS-Plus contained both personalized scripts for caregivers and psycho-educational app messages for patients. An evaluation of both interventions confirmed the potential benefits of using provider scripts to guide discussions, but showed no statistically significant difference between the scores obtained from TIPS-Plus and TIPS-Basic in the disclosure of IPV and RC, leading to the conclusion that patient activation messages provide no added benefit.

Finally, in 2018, Girr et al. attempt to question how IPV advocates deal with IPV and CR. It is found that IPV advocates have little discomfort and barriers to discussion around CR. However, regular interventions around CR are poor and these professionals need specific training and organisational support.

4. Discussion

This review updates the state of knowledge regarding RC, also considering its occurrence outside the context of IPV, and adding a focus on risk and protective factors and prevention strategies.

As appears from the literature, RC typically occurs in the context of an intimate relationship between two partners, although it can also be perpetrated by family members or in-laws. It can also be structural, when a country's public policies impact on women's reproductive and sexual health. The three main tactics that are used for RC are: contraceptive sabotage, with stealthing as a specific form of sabotage; putting pressure on the partner to get pregnant without considering her own reproductive wishes or intentions; and coercing a pregnant woman who does not comply with her partner's demands regarding the outcome of her pregnancy.

RC mostly affects young women and women with low socio-economic status, although it can also be experienced by men and by LGBTQ people. In addition, having a gendered social context with low gender parity, belonging to a sexual minority, and having a history of substance abuse or foster care are considered risk factors for RC. In contrast, the role of education, financial status or ethnic background as risk factors of RC remains unclear and requires further study. There is a strong association between CR and IPV suggesting that IPV is a major risk factor for CR. However, the latter also occurs without IPV. Unfortunately, few studies have looked at CR outside the context of IPV. Innovative studies related to this specific context are essential. Furthermore, most studies that focus on the overlap of CR with physical and/or sexual IPV do not address the complex relationship between CR and psychological abuse [36].

While most of these risk factors are structural in nature, they can, however, be used to identify groups or individuals that are at a higher risk to experience RC, and thus be considered for selective or identified secondary prevention. As suggested by several authors [3,7,11], it is recommended that early detection of RC would be integrated into health service policies of reproductive/contraceptive clinics and consultation services. For that purpose, health professionals need to be made aware and informed of the phenomenon, diagnostic skills and communication to address sensitive subjects should be trained, screening methods like the 'Safety Card' need to be further developed and validated [3,7], and specialized IPV and RC services made available. In the meantime, ways to facilitate the detection of RC can include asking specific RC-related questions, especially when a woman frequently presents for

emergency contraception, pregnancy tests or STI screening [27], ensuring that patients are interviewed alone in a private space with an interpreter present if necessary [12], or placing RC-related materials in visible (waiting room) and private (consulting room, toilets) areas in clinics, hospitals and health centers [8]. However, few studies have actually evaluated the effectiveness of such interventions.

Unlike the risk factors, protective factors have hardly been addressed in the RC literature. It is therefore not surprising that effective interventions for the (primary) prevention have hardly been developed. Nevertheless, some scholars offer suggestions for prevention, based on the assumption that gender parity in one's relationship and social environment, awareness of the problem, and access to social support may protect against RC. These interventions include raising the population's awareness on RC and on the availability of resources to cope with violence, offering education on risk reduction strategies, encouraging discussion of IPV and RC in an atmosphere of trust, and empowering women through enhancing their ability to help other women. The few intervention programs that have been developed along those lines yield encouraging results [1,33].

This study is not without limitations. Firstly, despite our intention to broaden the scope and include research from outside the USA and Canada, nearly all of the publications that could be retrieved and included in the review are from English speaking countries. While this reflects the geographical reality of the research interest for the problem, a fuller understanding of the phenomenon would require more research from other parts of the world. A comparison between findings from different cultures would allow to explore the structural, cultural and socio-economic factors that underlie the occurrence of RC and the victims' experience. Furthermore, the lack of comparable empirical data made it impossible to perform a meta-analysis, which meant the review had to be limited to a narrative review of the literature. As such, the inconclusive and sometimes contradictory findings that are reported in the RC literature could only be noted and not systematically addressed. Further research is thus needed to get a more accurate estimation of the prevalence of RC (with and without IPV), and to clarify the role of ethnicity, relationship status, education and financial status as potential risk factors for RC. It is also important to recognize that vulnerability factors may vary greatly depending on the location and social context.

Despite these limitations, the results of this review provide a state-of-the-art overview of the current insight with regard to the prevalence of RC, its presentation forms and context, its potential risk and protective factors, and the possibilities for interventions. This allows to make

practical recommendations for practice, as well as identify the main gaps in current knowledge and suggest avenues for further research.

In terms of practice, our review highlights the importance of both primary and secondary prevention of RC already voiced by other scholars. Specifically, there is a need to raise the population's awareness on RC and offer education on risk reduction strategies, as well as to make health professionals, especially those working in reproductive clinics and consultation services, aware of the phenomenon, provide them with adequate screening tools such as the 'Safety Card', and train them to communicate on sensitive subjects.

In terms of future research, a first suggestion would be to further document the occurrence of RC without IPV, and to identify the underlying mechanisms, risk and protective factors, and possibilities for prevention. More research also seems necessary on RC among male victims and in populations of different sexual orientation, to address the questions as to whether gender, gender identity or sexual orientation are risk or protective factors for RC, and whether the mechanisms underlying RC and the consequences for male or LGBTQ+ victims are similar to those in female victims. RC in new relationships and other forms of conjugal relationships also deserve special attention [4].

417 **Author contributions**

418 CE and AB performed the literature search, CE carried out the review, FA and SV were
419 consulted on the data extraction and structure of the review and participated in writing the
420 manuscript. All authors approved the final manuscript.

421 **Ethics approval and consent to participate**

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426 **Conflicts of interests**

427 The authors declare no potential conflicts of interest.

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Annex 1: Overview and details of the studies included in the review.

Primary studies						
Authors	Year	Country	Study type	Study objectives	Participants	Results
Phillips et al.	2016	USA	Quantitative study	Understanding how RC affects women in a primary care population	97 women who presented for care at a family practice clinic in the Bronx	<ul style="list-style-type: none"> • Reporting of RC, often associated with other forms of control and violence, by 24% of participants. • Risk factors: lack of personal safety, history of transactional sex for money, history of sex for shelter • Linkage of RC and pregnancy not clear. • Importance of discussion between health care providers and patients about sabotaging contraception and coercing pregnancy.
Liu, F., Mcfarlane, J., Maddoux, J. A., Cesario, S., Gilroy, H., & Nava, A.	2016	USA	Quantitative study	Describe the degree of perceived fertility control and the associated likelihood of unintended pregnancy and poor pregnancy outcomes among women who have experienced IPV.	282 female IPV victims who sought help for the first time from a shelter or district attorney's office.	<ul style="list-style-type: none"> • 29% of participants reported at least one unwanted pregnancy related to their abusers' refusal to use contraception. • 14.3% of participants reported at least one unwanted pregnancy related to their abusers' refusal to allow them to use birth control. • Abuse-induced miscarriages were 28 times more likely to occur when abusers did not use contraception • Participants were 8 times more likely to report preterm births if they were abused because of their use of contraception • Women in abusive and violent relationships show less fertility control, increased risk of unintended pregnancy as well as poor pregnancy outcomes (preterm birth, miscarriage).
Miller et al.	2016	USA	Quantitative study	Evaluate the effectiveness of an RC intervention program conducted in family planning clinics	25 family planning clinics in 17 groups with a total of 4,009 women aged 16-29 years.	<ul style="list-style-type: none"> • Increased participants' knowledge of domestic violence resources through the program. • Increased participants' self-efficacy to adopt risk reduction behaviors and use/share domestic violence hotlines because of the program • Reduction in RC among women experiencing multiple forms of domestic violence one year later but no significant reduction in RC or partner violence.

Alexander et al.	2016	USA	Quantitative study	Examine the prevalence of RC, sexual risk behaviors and mental health symptoms in women who have sex with men and women, compared to those who have sex only with men.	149 women, 42 of whom reported sex with both men and women and 107 of whom reported intimate sex with men only.	<ul style="list-style-type: none"> • Lower condom use during vaginal sex among women who have sex with men and women. • Greater frequency of post-traumatic stress and sex against resources among women who have sex with men and women. • Greater frequency of physical and sexual RC and IPV experience among women who have sex with men and women.
Holliday et al.	2017	USA	Quantitative study	Explore racial/ethnic differences in RC, IPV and unintended pregnancy.	1234 patients aged 16-29 years recruited from five family planning clinics in the San Francisco area.	<ul style="list-style-type: none"> • Greater exposure to the risk of RC and unintended pregnancy among black (37.1%) and multiracial (29.0%) women seeking care at family planning clinics. • Twice the risk of having an RC among multiracial women than among white women. • Identical risk of unintended pregnancy for white and black women.
Katz et al.	2017	USA	Quantitative study	Examine the association between domestic violence, female students' sexual health, and reproductive coercion by male sexual partners	223 sexually active female undergraduate students at a public liberal arts college in New York State.	<ul style="list-style-type: none"> • Experience of RC for 30% of the sample, most often through contraceptive interference. • No relationship between occurrence of partner violence and association between RC and contraceptive use. • Reduced contraceptive use among female students if there is RC or partner violence. • If there is RC and partner violence, RC is the main predictor of reduced contraceptive use. • No relationship between past experiences of RC, partner violence, and condom negotiation. • Lower contraceptive and sexual self-efficacy among women who experienced RC.
Katz, J., & Sutherland, M. A.	2017	USA	Quantitative study	<ul style="list-style-type: none"> • Explore the existence of coexistence of contraceptive interference (CI) with intimate partner violence (IPV). 	146 sexually active undergraduate students who had ended a (hetero)sexual relationship of at least one month.	<ul style="list-style-type: none"> • Positive associations between target partner's CI and psychological abuse, severe physical assault and attempted or actual sexual assault by the same partner. • Negative associations between CI and self-efficacy of condom negotiation. • The main motivation for CI is reportedly to promote pleasure.

				<ul style="list-style-type: none"> Find out whether past CI is negatively associated with women's contraceptive outcomes 		
McGirr, S. A., Bomsta, H. D., Vandegrift, C., Gregory, K., Hamilton, B. A., & Sullivan, C. M.	2017	USA	Quantitative study	Questioning how advocates for victims of domestic violence proactively or reactively deal with IPV and RC	700 domestic violence advocates across the United States.	<ul style="list-style-type: none"> Little discomfort around discussions of the RC Few obstacles to discussion of RC Discomfort and barriers around RC regarding less frequent use of coercion Little regular intervention in RC practices Need for specific training and organisational support
Northridge et al.	2017	USA	Quantitative study	Assess the prevalence of RC among urban girls of secondary school age and to examine the links between RC and reproductive health risks.	149 sexually active girls aged 14-17 years living in a high-poverty community	<ul style="list-style-type: none"> 1/5 of girls report having experienced RC Tripled risk of contracting chlamydia and quintupled risk of physical IPV among girls reporting RC. Less recognition of abusive behavior and less communication with sexual partners among girls reporting RC.
Brodsky	2017	USA	Qualitative study	Examine stealthing from criminal, contractual and civil rights perspectives.	N/A	<ul style="list-style-type: none"> Non-recognition of stealthing by the law. Importance of recognizing stealthing as a violent act in order to promote a positive outcome to complaints.
Miller et al.	2017	USA	Qualitative study	Evaluate an intervention on domestic violence and reproductive coercion in a family planning clinic.	18 providers, 5 administrators and 49 patients conducted semi-structured interviews.	<ul style="list-style-type: none"> Increased confidence of health care providers in discussing IPV and RC through the intervention. Victims' sharing of information with each other helps victims converse about these topics. Provision of important information and support and increased ability to help others through the intervention.
Barber et al.	2018	USA	Qualitative study	Examine the role of IPV in pregnancy during the transition from adolescence to adulthood.	867 young women in Michigan (USA)	<ul style="list-style-type: none"> Association between threats and physical assaults and higher rate of pregnancy between ages 18 and 22, only if the violence is recent. Victims' perceptions of greater desire for pregnancy in their partners, increased sexual intercourse, and decreased contraception during weeks of violence

						<ul style="list-style-type: none"> Increased desire for pregnancy, verbal and physical aggression during sex, and decreased condom use, among violent young men leading to increased risk of pregnancy for their partners.
Holliday and al.	2018	USA	Qualitative study	To qualitatively describe and compare the risk contexts for UIP between low-income black and white women with a history of IPV/RC.	10 non-Hispanic black women and 34 non-Hispanic white women with a history of IPV or RC, aged 18-29 years recruited from family planning clinics in Pittsburgh, Pennsylvania.	<ul style="list-style-type: none"> Racial differences in IPV/RC experiences with respect to UIP. The differences were in IPV/RC experiences, gender roles in intimate relationships and trauma history. For <u>white women</u>: more fatal threats and IPV related to childbearing and sexual abuse Among <u>black women</u>: pregnancy was influenced by CR. The latter was linked to impending incarceration, subfertility and non-use of condoms. Contraceptive choices were often male dependent. Experiences of childhood neglect impacted on pregnancy intentions and love-seeking behaviour.
Jargin	2018	USA	Case studies	Examine the relationship between alcohol use and sexual and reproductive coercion.	4 Case studies and mini-review	<ul style="list-style-type: none"> Decreased condom use and increased sexual risk behaviors when alcohol is consumed, especially if the consumption is excessive.
Reid et al.	2018	Australia	Case studies	Illuminate the impact of RC and other factors on women's autonomy in sexual and reproductive health.	3 case studies in Victoria	<ul style="list-style-type: none"> Less accessibility to sexual and reproductive health services for women living in rural and regional areas, resulting in a form of CR. Greater vulnerability of women to coercion, with limited knowledge of their right to safety. Manifestation of CR by religious communities or the state. Recommendation for an intersectional approach.
Zachor et al.	2018	USA	Quantitative exploratory study	Evaluate the effect of communication skills training on the frequency of IPV and RC assessment	679 participants from four family planning clinics	<ul style="list-style-type: none"> Communication skills training and standard training on IPV and RC have significantly increased providers' communication on IPV and RC.
Alexander et al.	2019	USA	Quantitative study	To examine the associations of reproductive coercion (RC) with the mental	A sample of 188 black women aged 18-25 living in Baltimore, Maryland.	<ul style="list-style-type: none"> Nearly 10% of young women reported having experienced CR without LPI. Symptoms of depression and PTSD were more common in women with CR.

				health of black adolescent girls and young adults.		<ul style="list-style-type: none"> CR and IPV contribute independently to mental health morbidities in this population.
Alhusen et al.	2019	USA	Qualitative descriptive study	To explore the perspectives of women with disabilities who had experienced unintended pregnancy due to reproductive coercion.	9 women living with various disabilities in a study examining facilitators and barriers to unintended pregnancy among women with disabilities.	<ul style="list-style-type: none"> RC may lead to a higher risk of UIP in women with disabilities. 3 ways in which physical violence and reproductive coercion raise the risk of UIP: 1) inadequate response by health care providers or the health system, 2) disability-related risks of IPV, and 3) resource needs to maximise safety.
Davis	2019	USA	Quantitative study	Investigate the prevalence, predictors, and indices of sexual risk associated with stealthing among young men.	626 men aged 21-30 years with inconsistent condom use recruited from an urban area in the Pacific Northwest	<ul style="list-style-type: none"> Stealthing since the age of 14 is reported by almost 10% of the participants. Stealthing since age 14 was committed more than once (3 times on average) for most authors. Stealth acts committed more by men who are hostile to women and have a history of sexual assault. Higher rates of STIs (sexually transmitted infections) and partners with unplanned pregnancies among stealthing authors.
Fleury-Steiner & Miller	2019	USA	Quantitative study	Examine RC as a predictor of women's perception of future violence	172 women with a protection order	<ul style="list-style-type: none"> Low prediction of perceived future violence by frequency of past physical violence. High prediction of perceived future violence by women by psychological violence and, to a lesser extent, reproductive coercion.
Hill et al. (a)	2019	USA	Quantitative study	Study the occurrence of RC and relationship abuse among young women	550 sexually active high school girls.	<ul style="list-style-type: none"> Reported recent RC for 12% of participating high school girls and physical or sexual abuse in a relationship with another teenager for 17% of participating high school girls. Greater likelihood of seeking STI testing or treatment among victims of physical or sexual abuse. Greater likelihood of having an older partner, having had two or more recent sexual partners, and using only one hormonal contraceptive for women reporting relationship violence and physical violence.

Hill et al. (b)	2019	USA	Quantitative study	Evaluate the effectiveness of an interactive application to facilitate discussions between patients and providers about intimate partner violence (IPV), reproductive coercion (RC), a wallet-sized educational card and sexually transmitted infections.	240 participants recruited from four clinics in Western Pennsylvania.	<ul style="list-style-type: none"> No significant difference in IPV and RC disclosure between an intervention involving a personalized script for the caregiver and one involving that same script plus an app providing psycho-educational messages for patients.
Samankasikorn et al.	2019	USA	Quantitative exploratory study	Investigate the prevalence, relationships and influences of male partner RC with IPV and unintended pregnancy.	20,252 women who gave birth between 2012 and 2015 and completed the PRAMS survey within 9 months of delivery	<ul style="list-style-type: none"> Reported physical IPV in 2.7% of participants and RC in 1.1% of participants. Risk factors: Younger age, history of IPV, low socioeconomic status, being single, and being black or Hispanic. Association between RC, IPV, and unintended pregnancy marking the importance of IPV and RC screening to prevent and reduce unintended pregnancy.
Lévesque & Rousseau	2019	Canada	Qualitative study	Qualitative study examining issues related to the recognition of RC	21 young women in Quebec	<ul style="list-style-type: none"> Difficulty in recognizing RC because of its different forms and the emotional connection to the perpetrator. Easier to identify behaviors such as non-consensual condom withdrawal than behaviors such as pressure and coercion to get pregnant. Better recognition of RC when relationships are casual and uncommitted. Protective factors: learning and reading about the topic, confiding in a friend or acquaintance, or finding a new partner who respects reproductive rights.
Price et al.	2019	Australia	Quantitative study	Exploring prevalence and associations with RC in Queensland	117 Queensland women who contacted a counselling and information service in the context of an unplanned pregnancy.	<ul style="list-style-type: none"> Risk factors for RC: identifying as Aboriginal, Torres Strait Islander or CALD; current domestic violence. More likely to experience other forms of IPV in addition to RC in older women. Greater rate of mental health problems among women who experienced both RC and IPV.

						<ul style="list-style-type: none"> • Greater rate of disclosure of RC, IPV, and mental health problems among women who had contacted counselors multiple times about their pregnancy.
Willie et al.	2019	USA.	Quantitative study	Examine the associations between IPV and RC in young couples longitudinally.	296 pregnant teenagers and young couples recruited from obstetrics, gynecology and ultrasound clinics.	<ul style="list-style-type: none"> • Clear associations between IPV victimization and RC victimization in young pregnant and parenting couples. • Experience of RC in a couple increases the risk of IPV in the following 6 months. • Experience of IPV prior to the birth of the baby among young women and men increases the likelihood of feeling pressured to have a child with their current partner. • Experience of IPV in a previous relationship increases the odds of experiencing IPV with their current partner. • Greater risk of psychological IPV and coercing their partner to have a pregnancy (if the perpetrator experienced IPV in a previous relationship), among perpetrators of IPV.
Perry et al.	2020	USA	Quantitative study	To describe contraceptive needs, explore associations between contraceptive use, IPV, RC and unintended pregnancy, and assess the acceptability of receiving contraceptive care in a Syringe Exchange Program.	96 women of childbearing age participating in an SEP in Santa Ana, USA.	<ul style="list-style-type: none"> • Participants using methamphetamines and/or heroin. • Reported IPV or RC in the past 3 months in 62% of participants. • History of unintended pregnancy in half. • No association between IPV, CR, contraceptive use, and unintended pregnancy. • Referral to contraceptive care and direct provision of contraceptive methods through the needle exchange program to meet contraceptive needs.
Tarzia et al.	2020	Australia.	Quantitative study	Understand and differentiate between stealthing and coercion and reproductive abuse (RC)	14 women who reported experiencing stealthing or RC were recruited from a large Australian hospital.	<ul style="list-style-type: none"> • Implication of non-consent in stealthing and RC. • Disrespect, selfishness, and the pursuit of sexual pleasure characterize stealthing. • Control with specific reproductive intent characterizes RC. • Differentiation between stealthing and RC is aided by the terms "intent" (especially reproductive intent) and "control."

						<ul style="list-style-type: none"> Considering stealthing to be a form of sexual violence because it does not have reproductive intent, but can still be considered a form of RC.
Fay & Yee	2020	USA	Quantitative study	Compare birth outcomes of women who experienced RC during their last pregnancy and women who did not experience RC	202 women recruited from obstetric and gynecological practices	<ul style="list-style-type: none"> RC reported in 8.6% of participants. Greater frequency of IPV in women reporting a history of RC, often still students and suffering from anemia or anxiety. Non-intention to become pregnant and less chance of being married to the baby's father among women reporting RC. No difference found in pregnancy outcomes after RC, except for lower birth weight of babies.
Grace et al.	2020	USA	Quantitative study	Examine the correlates of reproductive coercion in a sample of university women involved in abusive relationships.	354 students in higher education who reported IPV.	<ul style="list-style-type: none"> Reported RC in 24.3% of the sample. Associated factors with RC: nonwhite race, relational instability, no class due to relational problems, IPV severity ($p < 0.001$), technology abuse, events associated with traumatic brain injury, and depression. Prediction of depression after RC.
PettyJohn et al.	2021	USA	Quantitative study	To explore the prevalence of RC among adolescent girls currently or previously involved in the US foster care system.	Young African-American women (67.4%) and women from the LGBTQ+ community (46.6%).	<ul style="list-style-type: none"> Reported history of RC in 30.1% of participants. Significant prevalence of IPV, lifetime pregnancy, and unintended pregnancy found in girls with a history of RC. Clear association between RC and IPV. Greater frequency of substance use before sex among girls with a history of RC. Greater frequency of having sex with a male partner for 5 or more years among girls with a history of RC.
Swan et al.	2021	USA	Quantitative study	To examine the relationship between RC and interpersonal violence in college populations	644 mixed and cisgender American students who had had at least one sexual partner	<ul style="list-style-type: none"> Reported interpersonal violence at least once for 67.05% of participants, of which 39.91% reported multiple forms of violence. Experience of RC in 11% of the sample. Risk factors for RC: Young age and female gender. Experience of RC in 6.15% of male students in the sample. Clear association between RC and partner emotional abuse. Association of RC with greater risk of poly-victimization and interpersonal violence, with the exception of physical violence, when controlling for demographic factors.

Bagwell-Gray et al.	2021	USA	Quantitative study	Explore patterns of reproductive coercion (RC) and pregnancy avoidance (PA) among women recruited from domestic violence shelters in the southwestern United States	661 women recruited from domestic violence shelters in the southwestern USA.	<ul style="list-style-type: none"> • Nearly one-third of participants reported an RC • Nearly a quarter of participants reported pregnancy avoidance strategies. • Clear association between IPV and RC. • Risk factors for RC: young age and African American and Latino background. • No association between RC and education, income, or marital status. • Association between RC and pregnancy avoidance. • Association of RC and pregnancy avoidance with higher risk of homicide
Basile et al.	2021	USA	Quantitative study	Study the national prevalence of RC and differences in prevalence by gender category and race/ethnicity.	22,590 women and 18,584 men from the 2010, 2011, and 2012 National Intimate Partner and Sexual Violence Survey (NISVS).	<ul style="list-style-type: none"> • 9.7% of U.S. men and 8.4% of U.S. women experience an RC in their lifetime. • Greater frequency of men reporting their partner's desire to get pregnant when they did not want to. • Greater frequency of women reporting their male partner's refusal to use a condom. • Greater prevalence of both types of RC among non-Hispanic black women and men. • Greater prevalence of condom refusal among Hispanics. • Existence of RC without other IPV victimization but less for racial/ethnic minorities.
Addington	2021	USA	Quantitative study	Compare the experience of RC in young adult men and women.	1078 men and 1026 women recruited via the National Intimate Partner and Sexual Violence Survey (NISVS).	<ul style="list-style-type: none"> • Findings of IPV and RC in adult males and females. • Adult females found to have more RCs than males. • Association of RC with psychological aggression.
Skracic et al.	2021	USA	Quantitative study	Study and examine an association between IP and the level of contraceptive efficacy.	240 women of childbearing age were recruited from health care facilities in Delaware.	<ul style="list-style-type: none"> • 13.9% reported only verbal CR • 16.1% experienced behavioural CR. • Women who experienced behavioural CR were more likely to be currently using highly effective contraceptive methods. They were also less likely to be using moderately effective contraceptive methods. • Women who experienced verbal CR were more likely to use moderately effective contraceptive methods. • Women with CR may be interested in risk reduction strategies that involve the use of highly effective methods.

Willie, et al. (2)	2021	USA	Quantitative study	Explore associations between birth control sabotage, a form of reproductive coercion, and sexual risk among women attending family planning health centres.	675 women who attended family planning clinics in Connecticut	<ul style="list-style-type: none"> 675 women who attended family planning clinics in Connecticut. 16.4% of women reported having experienced contraceptive sabotage. They were more likely to have ever had a sexually transmitted infection, to have ever had exchange sex (having had multiple sexual partners in the past six months), and to have had a sexual partner in the past six months. Increased sexual risk among women who have experienced contraceptive sabotage.
Grace et al. (3)	2022	USA	Quantitative study	To examine the exposure and use of RC and care-seeking among students.	2291 male and female students seeking care in college health and counselling centres	<ul style="list-style-type: none"> RC is rarer among adolescents. 3.1% of women experienced reproductive coercion. Older age, younger age at first intercourse, black and American race, bisexuality, a large number of sexual partners and previous pregnancy are associated with the experience of RC among these students. Among women, sexually transmitted infections, drug or tobacco use, need for special medical equipment, poor academic performance and all categories of were associated with the experience of reproductive coercion. 2.3% of the men reported committing RC, including sexual violence and less condom use. Perpetrators appeared to have had more sexual partners than non-perpetrators.
Grace, K. T., Holliday, C. N., Bevilacqua, K. G., Kaur, A., Miller, J., & Decker, M. R.	2022	USA	Quantitative study	<ul style="list-style-type: none"> Describe the reproductive health status and needs of IPV survivors receiving housing support Explore factors influencing their experience RC 	70 women with IPV experience who are enrolled in housing programs in the Baltimore metropolitan area.	<ul style="list-style-type: none"> 16.4% of women seeking accommodation due to IPV had experienced a RC in the last 3 months. The majority of the women did not want a pregnancy. However, most of them were not using any contraceptive method or were using ineffective methods. RC was associated with frequency and severity of IPV, PTSD, smaller family size and not sharing children with the abusive partner. Financial instability could be a possible cause of this situation.
Munoz, E. A., Le, V. D., Lu, Y., Shorey, R. C., & Temple, J. R.	2022	USA	Quantitative study	Examine the lifetime prevalence of RC and its relationship to forms of IPV, as well as	A community sample of 370 young adult women.	<ul style="list-style-type: none"> Victims of RC are more likely to experience other forms of physical and sexual IPV. The risk of RC is greater for Black/African Americans and Latinos/Hispanics.

				<p>differences in prevalence between racial and ethnic groups in a diverse community sample of young adult women.</p>		<ul style="list-style-type: none"> • The prevalence of RC was higher for Hispanic participants. • Need for further research on culturally specific risk and protective factors
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