

Knowledge, Attitudes, Perceptions, and Practices of Non-Consensual Condom Removal Among Young Adults: A Systematic Review

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Abstract

Background: Non-Consensual Condom Removal (NCCR), commonly referred to as “stealthing,” is an emerging yet under-recognised form of sexual violence. Despite growing awareness, it remains poorly understood within legal and policy frameworks. Young adults are particularly vulnerable due to their engagement in casual sexual relationships, socio-cultural exposure, and unequal access to consent education. This review explores how social, cultural, and developmental factors influence young people’s knowledge, attitudes, perceptions, and experiences of NCCR across different regions.

Methods: This review followed PRISMA guidelines. Three databases were searched: MEDLINE, CINAHL, and APA PsycINFO. Two reviewers independently screened studies, and inter-rater agreement was assessed using Kappa. Methodological quality was appraised using the Critical Appraisal Skills Programme checklists, and data were synthesised using a mixed methods approach.

Results: Ten studies met the inclusion criteria. Most participants recognised NCCR as morally wrong, but many, especially women in casual relationships, did not recognise it as a violation. Women often viewed NCCR as a betrayal or form of sexual violence, while some men normalised it, particularly in casual contexts. Support for penalties was mixed and more likely when NCCR led to pregnancy or STIs. Victimization rates among women ranged from 9.3 to 66.7%; male perpetration ranged from 1.33 to 19.8%. NCCR was often repeated and not always recognised as non-consensual.

Conclusion: Recognition of NCCR as a violation of sexual consent remains inconsistent. It poses a serious public health concern and reflects enduring gender equity challenges. Addressing NCCR is essential to protecting the health and rights of women and girls and advancing Sustainable Development Goals 3 and 5, which focus on ensuring healthy lives and achieving gender equality.

Keywords Non-consensual condom removal (NCCR), stealthing, sexual consent, sexual violence, young adults

Introduction

Non-consensual condom removal (NCCR), predominantly referred to as “stealthing”, where a perpetrator secretly removes a condom without their sexual partner’s consent during sexual intercourse, is an emerging public health concern due to its adverse impact on youth (Alam & Alldred, 2021; Brodsky, 2016). NCCR can occur without knowledge or consent (Czechowski et al., 2019). Social media has further fueled this ‘trend’ (Ahmad et al., 2020). Reported prevalence rates vary between 9.34% and 32% (Alam and Alldred 2021; Boadle et al. 2021;

Ezzat et al., 2024). Among men having sex with men (MSM), the prevalence rate is 19% (Latimer et al., 2018). Over the past nine years the reported prevalence rate has increased; Simultaneously there has been an increase in publications (Alam & Alldred, 2021).

Currently, the United Kingdom (UK) legal frameworks fail to clearly define NCCR as a crime (Clough, 2018); however, it is understood as sexual violence and gender-derogatory behaviour that violates consent and removes autonomy of victims (Brodsky, 2017). Consequently, the prosecution of

NCCR is complicated. For example, the UK sexual offences act (Khan, 2004) addresses deception during sexual intercourse. However, it does not specify NCCR as rape or assault (Clough, 2018). Equally, in most of the United States and Canada, NCCR is only prosecutable when it results in bodily harm (e.g., pregnancy or STI transmission) (Brodsky, 2017; Czechowski et al., 2019). In contrast, some countries have criminalised the act. In California, stealthing is classified as "sexual battery" under Assembly Bill No. 453 (2021), (Gómez-Durán & Martín-Fumadó, 2024) Singapore criminalised the act under the Criminal Law Reform Act 2019 ((Parliament of Singapore, 2019), and in Australia, it is recognised as a violation of consent (Dyer, 2019).

NCCR poses a significant public health concern. It undermines safe sex practices (Rosa et al., 2025) and is linked to an increased risk of STIs (Czechowski et al., 2019) and unintended pregnancies (Latimer et al., 2018). Victims may delay or forego post-coital interventions such as emergency contraception or STI testing due to uncertainty or denial that a violation occurred (Brodsky, 2017). The emotional consequences of stealthing include reduced sexual autonomy, diminished self-esteem, and distress related to consent violation (Dzirasah, 2021). Women and girls are particularly at risk, especially those with a history of sexual abuse (Boadle et al., 2021). Perpetrators of NCCR often demonstrate hostile or antisocial traits (Davies, 2019), scoring higher on indices of sexual aggression and gendered hostility (Tarzia et al., 2020).

This concern is especially pronounced among young adults aged 30 and below. (Karle et al., 2023). They are more likely to engage in high-risk sexual behaviours, including inconsistent condom use during casual sexual encounters (Chi et al., 2012; Karle et al., 2023). While awareness of the benefits of condom use is generally high in this demographic, knowledge alone does not reliably predict protective behaviours (Ajayi et al., 2019). Additional contributing factors include substance use (Chen et al., 2023), peer influence (Alam & Alldred, 2021), and exposure to online sexual content that normalises coercive behaviours (Ahmad et al., 2020).

Currently, there is a paucity of comprehensive reviews focusing specifically on NCCR in young adults aged 30 years and below. Boadle et al. (2021) described the area as under-researched, with scattered insights into victimisation, perpetration, and associated health outcomes. Although one scoping review (Davis, Hammett, et al., 2024) and one systematic review (Gómez-Durán & Martín-Fumadó, 2024) have previously shed light on this topic, their objectives and findings differ significantly from that of the current review. Gómez-Durán & Martín-Fumadó (2024) discussed the conceptual clarity of NCCR, whereas Davis, Hammett et al. (2024) provided a broad synthesis of NCCR. As such,

this systematic review aims to synthesise the existing empirical literature on the knowledge, perceptions, attitudes, and practices of NCCR among individuals aged 30 and below. By examining both quantitative and qualitative data, this review seeks to offer a holistic understanding of how young people conceptualise, experience, and respond to this under-recognised form of sexual violence.

Methods

A systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines (Page et al., 2021). A review protocol was developed prior to commencing the review to guide methodology and ensure transparency, in line with updated systematic review guidance (Page et al., 2021; Papaioannou et al., 2010).

Aim

To review and synthesise current empirical data pertaining to knowledge, perception, practices, and attitudes among young people towards stealthing. Also referred to as non-consensual condom removal (NCCR).

Review objectives

1. To summarise and report the level of knowledge of those aged 30 and below pertaining to stealthing/ NCCR.
2. To summarise and report the range of perceptions of those aged 30 and below pertaining to the impact and meaning of stealthing/ NCCR.
3. To summarise and report the range of attitudes of those aged 30 and below expressed towards stealthing/ NCCR.
4. To summarise and report the practices of stealthing/ NCCR of those aged 30 and below.

This review focused on the following PICO elements:

- **Population (P):** Adults aged 30 years and below, including all genders
- **Intervention/Exposure (I):** Understanding knowledge, attitudes, perceptions, and practices related to non-consensual condom removal (NCCR), also known as stealthing.
- **Context (C):** Studies conducted in any setting, including community settings, educational institutions, healthcare environments, urban or rural locations, and across low-, middle-, and high-income countries.
- **Outcomes (O):** Reported knowledge, attitudes, perceptions, practices, and lived experiences related to NCCR/stealthing.

Databases

Three electronic databases were searched: CINAHL, MEDLINE, and APA PsycINFO.

Search strategy

A two-step search strategy was employed to identify relevant studies. The first step involved an initial exploratory (wild) search, a broad, unstructured scan of literature using basic keywords related to NCCR and young people. This phase aimed to familiarise the researchers with commonly used terminology, refine inclusion concepts, and identify alternative spellings or phrasing across different disciplines and databases. Based on this exploratory phase, the second step involved a more systematic, advanced search using Boolean operators (AND, OR), truncation (*), and phrase searching ("").

The final search terms included:

("Nonconsensual condom removal" OR "Non-consensual condom removal" OR "Non consensual condom removal" OR Stealthing) AND (Knowledge OR View* OR Perception* OR Practice* OR Aware* OR Experience* OR Attitude* OR Opinion*) AND (Students OR Young OR Youth OR Teen* OR Adolescent* OR Female* OR Women OR Girl* OR Boy* OR Male* OR Men OR Woman OR Man OR Child* OR "30 years or below" OR "age below 30")

This strategy was applied to three electronic databases: CINAHL, MEDLINE, and APA PsycINFO. No geographic or date restrictions were applied due to the anticipated scarcity of literature. Additionally, the reference lists of included articles were manually screened to identify additional eligible studies.

Inclusion and exclusion criteria

During the review process, studies were included if they met the following criteria:

1. Published in a peer-reviewed journal
2. Reported empirical data
3. Included participants aged 30 years or younger
4. Reported data on one or more of the following outcomes related to stealthing and/or NCCR: knowledge, perception, practice or attitude

The following exclusion criteria were applied:

Studies were excluded if they met any of the following:

1. Were non-empirical or theoretical in nature (e.g., opinion pieces, commentaries, policy briefs)
2. Were literature reviews or scoping reviews
3. Were not published in English
4. Did not include age-specific data or participants aged 30 years or younger

Screening and study selection

All identified articles were extracted into a spreadsheet using Microsoft Excel. A two-stage screening process was then undertaken. First, titles

and abstracts were independently screened by two reviewers against the specified inclusion criteria. Then the full text was retrieved and independently screened by two reviewers again, against the specified inclusion criteria. The first inclusion criterion not met was recorded as the reason for exclusion. Discrepancies were resolved through discussion. Inter-rater reliability was calculated using Cohen's kappa statistic (Cohen, 1960).

Data extraction

Data from all included studies were extracted using a bespoke extraction sheet. Extracted data included:

- Study characteristics: Author(s), title, country, study design, objective, sample size, setting, methodology
- Participant characteristics: Age, gender
- Outcome data: Knowledge, attitude, perception, practices

Table 1: Data extraction table

Authors	Title	Country	Study de	Objective	Sample size	Age	Gender	Setting	Methodology	Outcomes/Key Findings			
										Attitude	Knowledge	Perceptions	Practices
Alam & Alldred, 2021	Condoms, Trust and Stealthing: The Meanings Attributed to Unprotected Hetero-Sex	United Kingdom	Qualitative	To explore the meanings attributed to condom use and the barriers/facilitators of condom use in the heterosexual relationships	9 students	22-25 years old	6 females, 3 males	Undergraduate and postgraduate college students	Semi-structured interviews conducted using vignettes to discuss hypothetical scenarios involving condom use.	Two-thirds of male participants (66.7%) described stealthing as disrespectful, citing its roots in masculine behaviors that override women's decisions. All female participants (100%) linked it to broader gender inequalities in sexual relationships.	66.7% of males linked stealthing to unprotected sex and peer norms (no self-report). 16.7% of females reported personal experience, citing betrayal of trust. Recognised as interpersonal violence (IPV). 100% unaware of legal frameworks.	2 out of 3 males said stealthing is a common practice among men. Females perceived stealthing as a violation of consent. 100% of females perceived stealthing breaches the trust in sexual relationships.	1 female out of 6 (16.7%) experienced stealthing, expressed feelings of betrayal and violation. 2 out of 3 men (66.7%) explained stealthing as a prevailing practice amongst their social groups.

(Boadle et al., 2021)	Young Women Subjected to Nonconsensual Condom Removal: Prevalence, Risk Factors, and Sexual Self-Perceptions .	Australia /New Zealand	Cross-sectional (online survey)	To assess women's NCCR experiences, prevalence of NCCR, and associated risks	364 women	18-29 years	women (heterosexual, n=255, 70.06%, bisexual, n= 83, 22.8%, homosexual, n=7, 1.9% and others, n=15, 4.1%)	Conducted primarily in Australia and New Zealand using an online survey (Qualtrics).	Women have had sexual intercourse with at least one male recruited via social media, university campus posters, and undergraduate research participation programs. Multiple choice question administered	Not reported	Almost 10% reported having experienced NCCR. Non-heterosexual women (4 out of 15) experienced NCCR more than heterosexual (18 out of 259) and bisexual (12 out of 83). Poor understanding of NCCR due to lack of societal awareness. NCCR is misunderstood and misclassified due to a lack of legal recognition.	Not reported	Women with 5 or more sexual partners annually reported NCCR more (z=3.96 for "5-7" partners and z=3.89 for "8+" partners). Women in casual dating, hook-up affected with NCCR more (26.7%) as compared to women in formal dating (9%).
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(Bonar et al., 2021)	Stealth Perpetration and Victimization : Prevalence and Correlates Among Emerging Adults	USA	Online survey	To examine the prevalence of stealthing perpetration (SP) and victimization (SV) among 18–25 To identify correlates of SP and SV, particularly focusing on	2550 completed the survey Men: 52.4% (1337). Women: 47.6% (1213)	18 to 25 years	Males,Females.Ethnicity: Non-Hispanic White: 53.9%. Sexual Orientation: Heterosexual: 67.4%. Education: 85.3% had at least some college education.	Recruited via Facebook and Instagram; survey hosted on Qualtrics.	Collected demographics. Assessed stealthing perpetration (men) and victimization (both sexes). Measured past-year substance use. Analysis: Descriptive stats, logistic regression ($p < 0.05$), adjusted for demographics and substance use.	Not reported	Not reported	18.9% of women reported experiencing stealthing:Once: 10.3%, Twice: 5.2%,3–5 times: 2.5%, 6+ times: 0.9%. 5% of men reported being victims of stealthing: Once: 2.6%,Twice: 1.1%,3–5 times: 0.7%,6+ times: 0.8%. 6.1% of men admitted to having perpetrated stealthing.
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(Chen et al., 2023)	Associations Among Alcohol-Related Factors and Men's Nonconsensual Condom Removal Perpetration	USA	Cross-sectional quantitative study	Examined the association between alcohol-related factors and NCCR perpetration among young men.	96 men Age: Mean = 25.7 years (SD = 3.5). Ethnicity: White: 58.3%. Black/African American: 14.6%. Asian/South Asian: 13.5%. Multiracial: 11.5%. Other: 2.1%. Education: 36.8% were college graduates. 45.8% had completed some college	18-30 years	Heterosexually active men, history of coercive condom use resistance.	Recruitment through online advertisements (e.g., Craigslist) targeting single, heterosexually active men. Participants completed a 45–60 minute online survey after initial eligibility screening.	NCCR assessed via CUR single-item (lifetime). Recorded event-level drinking, condom-use, alcohol expectancies (7-point), and sex-related drinking motives (5-point). Analysis: Descriptive stats, point-biserial correlations, logistic regression.	Not reported	Not reported	Not reported	19.8% (19 out of 96 participants) reported having engaged in NCCR at least once since age 14. Higher alcohol consumption by the perpetrator was linked to increased likelihood of NCCR.
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(Costa et al., 2022)	Stealth Among University Students: Associated Factors	Brazil	Cross-sectional, observational, descriptive, and analytical study.	To identify the practice of stealth (both perpetration and victimization) among university students. To analyze the associations between student sociodemographic profiles and their experiences with stealth.	380 university students.	18-24 years	Female: 66.58% (253 participants). Male: 33.42% (127 participants). Sexual Orientation: Heterosexual: 74.74%. Homosexual: 7.11%. Bisexual: 17.63%. Gender Identity: Cisgender women: 67.11%. Cisgender men: 32.89%.	Recruited via email; data collected online via REDCap (May–Sept 2018).	Eligible: Sexually active, aged 18–24. Structured online survey on sociodemographics and sexual health (incl. stealth). Analysis: Descriptive stats, Fisher's exact test ($p < 0.05$) using SPSS v17.0.	Not reported	Not reported	Not reported	1.33% (5 out of 377 participants) reported perpetrating stealth during sexual intercourse. 11.44% (43 out of 376 participants) reported being victims of stealth (non-consensual condom removal). Victimization was significantly associated with: Being biologically female ($p = 0.000$). Identifying as a woman ($p = 0.000$).
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(Czechowski et al., 2019)	That's Not What Was Originally Agreed To: Perceptions, Outcomes, and Legal Contextualization of Non-Consensual Condom Removal in a Canadian Sample	Canada	Mixed-methods	To explore the prevalence of NCCR in a Canadian undergraduate sample. To assess the emotional and physical outcomes of NCCR. To examine participants' perceptions of NCCR, including whether it is considered wrong and whether there should be consequences.	Total Participants: 592 university students. Women: 73.4% (435 participants). Men: 25.8% (153 participants). Transgender/Non-Binary: 0.7% (4 participants).	Age: 16–30+ years (Mean = 19.6, SD = 2.5, Mode = 18).	Sexual Orientation: Heterosexual: 82.1%. Gay/Lesbian: 4.5%. Bisexual: 8.4%. Other: 4.7%. Relationship Status: In a committed relationship: 42.4%. Single (dating or not): 55.3%.	Conducted at a bilingual university in Ottawa via ISPR; online surveys on Qualtrics (2017–2018).	Psychology students. Quantitative: NCCR prevalence, outcomes. Qualitative: Perceptions via open-ended questions. Analysis: Descriptive stats, NVivo coding, Cohen's Kappa.	Nearly all participants believed NCCR is wrong. Reasons cited: Lack of consent: 57.6% (W-61.3%, M-47.1%). Risk of STIs: 35.3%. (W-35%, M-36.1%). Risk of unplanned pregnancy: 33.4%. (W-36.6%, M-24.5%). Breach of trust/deception: 13.3%. (W-15.3%, M-7.7%). Sexual violence: 5.1%. (W-5.5%, M-0.4%). Consequences for NCCR: 85.4% supported consequences for perpetrators. 8.1% opposed consequences. 6.5% were unsure or	Majority (99%) perceived NCCR to be 'wrong'; due to the lack of consent involved (93%), the betrayal of trust (99%), consequences of acquiring STIs (98%), and resultant unplanned pregnancies (99%)	Emotional Impact: Victims frequently described NCCR as a violation of consent and trust, with some framing it as sexual assault or rape. Gender Differences in Perception: 5.5% of women compared to 0.4% of men explicitly identified NCCR as sexual violence. Women were more likely to associate NCCR with betrayal of trust (15.3%) compared to men (7.7%). Societal Attitudes: NCCR was perceived as under-recognised and	18.7% of participants (62 out of 334 participants who had engaged in sexual intercourse with a male partner using a condom) reported experiencing NCCR. Breakdown of victimization: 26 participants: NCCR without consent. 4 participants: NCCR without knowledge. 32 participants: NCCR both without consent and without knowledge. Outcomes of NCCR: 67.2% of victims reported feeling "bothered a lot" by the experience. 29.3% were "bothered a
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										gave no opinion. 7.8% said it would be hard to prove. Among those supporting consequences : 13.9% explicitly linked NCCR to sexual violence.		often minimised within social and legal contexts.	little." 3.4% were "not bothered at all." Reported physical outcomes: 2 pregnancies. 4 STI cases.
(Davis et al., 2019)	Young Women's Experiences with Coercive and Noncoercive Condom Use Resistance: Examination of an Understudied Sexual Risk Behavior	United States	Cross-sectional, observational study.	To investigate the association between young women's receipt and engagement in coercive and noncoercive CUR including NCCR with male partners.	503 young women	21-30 years	Age: 21–30 years old (Mean = 25.0 years, SD = 2.7). Race/Ethnicity: White: 71.7%. Asian/Asian American: 8.3%. Black: 4.9%. Native American/Alaskan Native: 2.2%. Multiracial/Other: 12.9%. Marital Status: Single: 89.9%. Married/Cohabiting: 5.4%. Separated/Divorced: 4.4%.	Recruitment through online and print advertisements targeting women from the local community. Surveys were completed online and in-lab, administered via Qualtrics.	Women aged 21–30 years. History of at least one condomless consensual sexual experience in the past year. Indicators of sexual risk (e.g., multiple partners, STI history, partner risk behaviors). Procedure: Participants completed a background survey online,	Not reported	Not reported	Not reported	12.2% of participants reported experiencing stealthing (NCCR before or during intercourse) from a sexual partner at least once. No participants reported engaging in stealthing themselves. Coercive condom use resistance (CUR) tactics, including stealthing,

									followed by an in-lab session for sensitive measures. Data collected through validated instruments on CUR, sexual victimisation, and sexual risk behaviors.				were positively associated with participants' experiences of sexual victimization.
(Davis, 2019)	'Stealththing': Factors Associated With Young Men's Nonconsensual Condom Removal	United States	Cross-sectional quantitative study	To investigate the rates, predictors, and associated sexual risk indices (e.g., STIs, unplanned pregnancies) of young men's non-consensual condom removal (NCCR).	626 Men	21-30 years	Males	Urban area- Eligibility criteria included being single, having engaged in unprotected sexual intercourse with a woman at least once in the past year, and being interested in sexual activity	Data Collection: Participants completed survey measures during an in-laboratory session. Data collected included: Non-consensual condom removal experiences. Logistic regression was used to examine predictors of	Hostility and Beliefs: NCCR perpetrators had higher scores on measures of: Hostility toward women (M = 2.92, SD = 1.05). Adversarial heterosexual beliefs (M = 2.29, SD = 0.92). Rape myth acceptance (M = 1.80, SD = 0.90). Hostility	9.8% of participants (61 out of 626 young men) admitted to engaging in NCCR since age 14. Frequency: 23 participants (37.7%) reported one instance of NCCR. 12 participants (19.7%) reported two instances. 26 participants (42.6%) reported three or more instances.	Not reported	Not reported

								with women.	<p>NCCR. Comparisons were made between perpetrators and non-perpetrators for health outcomes (e.g., STI diagnoses, unplanned pregnancies).</p>	<p>toward women emerged as a stronger predictor of stealthing behavior than adversarial heterosexual beliefs or rape myth acceptance.</p> <p>Sexual Aggression and Risk:</p> <p>The study highlights that NCCR is not only a form of sexual aggression but also increases sexual risk (e.g., STI transmission, unplanned pregnancies).</p>	<p>On average, participants who engaged in stealthing reported doing so 3.62 times (SD = 3.87), with a range of 1–21 instances.</p> <p>Perpetrators have a history of STI diagnosis (29.5%) compared to non-perpetrators (15.1%, $p < 0.05$).</p> <p>Perpetrators have a partner who experienced an unplanned pregnancy (46.7%) compared to non-perpetrators (25.8%, $p < 0.001$).</p>		
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(Ezzat et al., 2024)	A UK Survey of Young People's Views on Condom Removal During Sex	United Kingdom	Quantitative online survey	To investigate young people's views on non-consensual condom removal (NCCR) regarding its morality, criminality, and violation of consent. To evaluate how views are	1,729 participants	18-25 years	Predominantly aged 21–24 years, with 17.3% aged 24. Sex: Male: 24.1% (402 participants). Female: 75.9% (1,266 participants). Sexual Orientation: Heterosexual: 45.2%. Bisexual: 39.8%. Other orientations: 15%	Conducted online via Qualtrics, with recruitment through UCL campus flyers, social media, and paid Instagram advertisements.	Participants answered two scenarios randomized across four variations: Outcome Scenarios: Scenario A1: Pregnancy as an outcome. Scenario A2: Depression as an outcome. Relationship Scenarios: Scenario B1: Casual hookup. Scenario B2: Long-term dating. Questions Assessed: Agreement to sex after NCCR (violation of consent). Morality of NCCR.	Almost all participants believed that NCCR is morally wrong (99.3%–99.5%). Attitudes toward the severity of NCCR were influenced by gender and sexual orientation: Female and non-heterosexual respondents were more likely to view	Participants viewed NCCR is wrong (99.3%-99.5%) and violation of consent to sex (97.4%-98.1%)	97.4%–98.1% of participants agreed that NCCR is a clear violation of consent to sex. 86.3%–89.2% identified NCCR as a form of sexual assault. NCCR is wrong (99.3%-99.5%) Legal consequences: Support for Prison Time: 52.1% supported prison for NCCR in cases resulting in pregnancy. Support dropped to 41.6% when the	Not reported
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(Lévesque et al., 2021)	Influence of the Relational Context on Reproductive Coercion and the Associated Consequences	Canada	Qualitative exploratory study	To examine how the relational context (committed/uncommitted relationships, with/without violence) influences the manifestations of reproductive coercion (RC),	21 women	18-29 years	Women: Hetrosexual(71%), bisexual(14%), queer (10%), or asexual (5%).	Participants were recruited in Montreal, Canada, through colleges, universities, abortion clinics, social media, and community groups.	Data Collection: Semi-structured, in-depth interviews conducted between March 2017 and May 2018. Participants were asked about their experiences with reproductive coercion in various relational contexts. Data Analysis: Thematic analysis using NVivo 11 to identify themes and patterns in the data.	Not reported	Not reported	Participants described NCCR as: A violation of consent. A disempowerment of their reproductive autonomy. Many participants felt: Used, disrespected, and objectified. Anger and frustration toward their partners when they realized the consequences (e.g., need for emergency contraception).	10 out of 21 (47.6%) reported experiencing NCCR. Consequences: 1 participant contracted an STI after NCCR. Unplanned Pregnancy: Some participants reported having to use emergency contraception. Emotional and Psychological Impact:
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Data synthesis

A narrative thematic synthesis was conducted in line with recent best practice guidance for narrative synthesis and mixed evidence integration (Siddaway et al., 2019). Findings were organised into four predefined analytical categories reflecting the review objectives.

Quality assessment

The methodological quality of all included studies was assessed using the Critical Appraisal Skills Programme (CASP) checklists tailored to study design (qualitative, quantitative, or mixed methods) (CASP, 2018).

Table 2: Critical appraisal of included studies

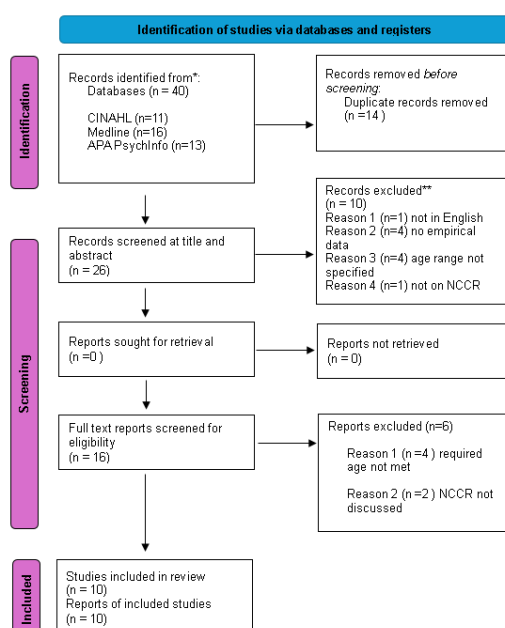
Study	Design	Clear Aims	Methodology Appropriate	Recruitment Strategy	Data Collection	Ethical Issues	Analysis Rigorous	Findings Clear	Value of Research	Overall Appraisal
Alam & Alldred (2021)	Qualitative	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High	Include
Boadle et al. (2020)	Quantitative	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High	Include
Bonar et al. (2019)	Quantitative	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High	Include
Chen et al. (2023)	Quantitative	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High	Include
Costa et al. (2022)	Quantitative	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High	Include
Davis et al. (2019a)	Qualitative	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High	Include
Davis et al. (2019b)	Quantitative	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High	Include
Ezzat et al. (2024)	Quantitative	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High	Include
Levesque et al. (2021)	Qualitative	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High	Include
Czechowski et al. (2019)	Mixed	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High	Include

Results

The database searches identified 40 articles; after duplicates were removed, 26 articles remained. Ten articles were excluded in stage one, and a further 16 articles were excluded at stage two. This left a final sample of ten articles for data extraction (Fig. 1. PRISMA flow diagram). The kappa statistic showed

substantial agreement between reviewers at both stage one and stage two ($k=0.698$ and $k=0.799$, respectively). Two articles were identified by the same author (Davis, 2019; Davis et al., 2019). On review, they reported different data addressing the same research question, and both were included.

Table 3. PRISMA flow chart PRISMA 2020 flow diagram for new systematic reviews, which included searches of databases and registers only



Sample characteristics

Of the ten included studies, two were qualitative (Alam & Alldred, 2021; Lévesque et al., 2021), one was mixed methods (Czechowski et al., 2019), and the remaining seven were quantitative designs (Boadle et al., 2021; Bonar et al., 2021; Chen et al., 2023; Costa et al., 2022; Davis, 2019; Davis et al., 2019; Ezzat et al., 2024) (Table 1).

Studies were conducted in the UK (Alam & Alldred, 2021; Ezzat et al., 2024), the United States (Bonar et al., 2021; Chen et al., 2023; Davis, 2019; Davis et al., 2019), Canada (Czechowski et al., 2019; Lévesque et al., 2021), Brazil (Costa et al., 2022), and Australia and New Zealand combined (Boadle et al., 2021). Sample sizes range from nine (Alam & Alldred, 2021) to 2550 (Bonar et al., 2021).

The topics considered across the included studies were broad. Alam and Alldred (2021) discussed condom use, barriers and facilitators in heterosexual relationships. Boadle et al. (2021) assessed the

prevalence of NCCR among women, risk factors and women's sexual self-perception. Bonar et al. (2021) explored correlations between victimisation and perpetration of NCCR associated with substance use and demographic characteristics. Chen et al. (2023) explored the association of alcohol and NCCR among young men. Costa et al. (2022) examined NCCR in university students. Czechowski et al. (2019) studied the consequences and outcomes of NCCR. The two articles by Davis et al. (2019) focused on coercive and non-coercive condom use in females, whereas Davis (2019) investigated rates, predictors, and associated sexual risk indices (e.g., STIs, unplanned pregnancies) associated with men's NCCR. Ezzat et al. (2024) explored young people's views of NCCR from the perspective of criminality, morality and consent. Finally, Lévesque et al. (2021) broadly studied reproductive coercion (RC) and NCCR, taking into account the context of committed or non-committed relationships.

Table 4: Characteristics of included studies

Author/ Year	Country	Study Design	Sample Size	Population/d emographics	Aims	Outcomes/Key highlights
Alam & Alldred, 2021	United Kingdom	Qualitative	9 (6 women, 3 men)	22-25 years old UG and PG students	To identify the barriers to and facilitators of condom use among young people	NCCR supported traditional gender roles where male dominance and female passivity were normalised.
Boadle et al., 2021	Australia /New Zealand	Quantitative (Online survey)	364 women	18-29 years old community women	To examine the prevalence of NCCR	NCCR heightens risk in non-committed relationships and with more sexual partners. It brings psychological harm to victims.
Bonar et al., 2021	USA	Quantitative	2550 (52.4% men, 47.6% women)	18 to 25 years of community men and women	To examine the prevalence and correlates of NCCR perpetration and victimisation, with a focus on demographic and substance use factors.	Substance use and demographics impact both perpetration and victimisation.
Chen et al., 2023	USA	Quantitative	96 men	18-30 years heterosexual men	To assess alcohol-related NCCR perpetration	Men with higher alcohol expectancies were more likely to engage in NCCR, linking it

						to impaired judgment and reduced awareness of consent.
Costa et al., 2022	Brazil	Quantitative	380 (127 men & 253 women)	18-24 years UG students	To examine stealthing prevalence and associated factors among students.	Women are more vulnerable to NCCR victimisation.
Czechowski et al., 2019	Canada	Mixed method	592 (men-153, 435 women, 4 TGs)	16-30 years students	To explore the prevalence, outcomes, and perceptions of NCCR.	Participants view NCCR as a consent violation; legal ambiguity is observed.
Davis, 2019	USA	Quantitative	626 men	21-30 years community men	To identify predictors and risks of NCCR behavior among males	Hostility toward women and past sexual aggression forecasts NCCR perpetration.
Davis et al., 2019	USA	Quantitative	503 women	21-30 years community women	To examine women's experiences with condom use resistance (CUR), including NCCR.	Coercive condom use resistance (CUR) reduced agency for young women.
Ezzat et al., 2024	United Kingdom	Quantitative	1729 (402 men, 1266 women)	18-25 years	To explore young people's views on NCCR	NCCR is morally wrong and a violation of consent. Support for criminalising stealthing differed, with higher support for prison when harmful outcomes include STIs or pregnancy.
Lévesque et al., 2021	Canada	Qualitative	21 women	18-29 years	To examine how relational context influences experiences and impacts of NCCR	NCCR occurrence is more common in non-committed relationships, perpetrated by men to disregard the sexual autonomy of women.

Participant characteristics

Participants in the included studies varied slightly. For example, three studies included female participants only (Boadle et al., 2021; Davis et al., 2019; Lévesque et al., 2021), and two included only male participants (Chen et al., 2023; Davis, 2019). Equally, the ages of participants varied slightly within the stated inclusion criteria age range of 18-30. Two studies recruited participants aged 18-24 (Bonar et al., 2021; Costa et al., 2022), and two recruited participants aged 21-30 (Davis, 2019; Davis et al., 2019). While others focused on those aged 22-25

years (Alam & Alldred, 2021), 18-29 (Boadle et al., 2021), 18-30 (Chen et al., 2023), 16 to 30+ years (Czechowski et al., 2019) and 18-29 years (Lévesque et al., 2021).

Three studies exclusively recruited students (Alam & Alldred 2021; Costa et al., 2022; Czechowski et al., 2019). Three primarily recruited students (Bonar et al., 2021; Ezzat et al., 2024; Lévesque et al., 2021). While Davis (2019) and Davis et al. (2019) recruited from the general public, and Czechowski et al. (2019) recruited participants via research databases (ISPR).

This was reflected in the varied recruitment methods used; the majority (n=8/10, 80%) used online advertisement via social media such as Instagram and Facebook and distribution of flyers across university/college campuses (Alam & Alldred, 2021; Boadle et al., 2021; Bonar et al., 2021; Chen et al., 2023; Davis et al., 2019; Davis, 2019; Ezzat et al., 2024; Lévesque et al., 2021) and Costa et al., (2022) emailed sexually active first-semester undergraduate students aged 18-24 at a public university in São Paulo.

The following section reports the analysis of the included studies findings per review objective; knowledge, perception, and attitude towards NCCR, and practice and experience of NCCR.

Knowledge

Four studies reported data on young people's knowledge of NCCR (Alam & Alldred, 2021; Boadle et al., 2021; Czechowski et al., 2019; Ezzat et al., 2024). Ezzat et al. (2024) surveyed 1729 participants to understand their views on condom removal during sex, with a specific focus on morality, criminality, and violation of consent, using random allocation to two different scenarios. The majority of participants in the study understood NCCR to be 'morally wrong' (99.3%-99.5%), a breach of sexual consent (97.4%-98.1%), and a sexual assault (86.3%-89.2%). The majority of participants were female (75.9%), and recruitment was restricted to one UK university, although social media advertisements were used to extend the reach beyond this setting.

An earlier, mixed-method study of 592 undergraduate Canadian students, reported that the vast majority (99%) perceived NCCR to be 'wrong'; due to the lack of consent involved (93%), the betrayal of trust (99%), consequences of acquiring STIs (98%), and resultant unplanned pregnancies (99%) (Czechowski et al. 2019). Prior research by Boadle et al. (2021) reported limited knowledge of NCCR; specifically, their study highlighted that female victims had failed to recognise NCCR as an offence at the time of occurrence. This lack of knowledge was reportedly associated with reduced confidence in asserting sexual autonomy and navigating consent in future sexual encounters, underscoring the psychological impact of these knowledge deficits.

Reportedly, non-heterosexual females (4 out of 15) (excluding homosexuals) and those in non-committed relationships with frequent changes in partners have demonstrated higher rates of NCCR victimisation (women with five or more sexual partners annually reported NCCR more) (Boadle et al., 2021). This indicates a lack of awareness among these groups about the importance of consent and control in sexual interactions.

Consent awareness was low among women in casual dating (26.7% affected with NCCR) comparatively

(women in formal dating 9%), as their male sexual partners showed their masculinity and control over sexual intercourse by diminishing their female partner's bodily autonomy while secretly removing condoms without the partners' consent (Boadle et al., 2021).

In consideration of knowledge acquisition, the study by Alam & Alldred (2021) highlighted that peer groups were a primary source of information and knowledge, supplemented by Social media campaigns such as the 'Consent everything campaign' 'I Heart Consent' campaign, which aimed to raise awareness of NCCR (Ezzat et al., 2024).

Perception

Four studies discussed participants' perception of NCCR (Czechowski et al. 2019; Ezzat et al., 2024). Two of which were qualitative studies (Alam & Alldred 2021; Lévesque et al., 2021). Male participants in one study perceived NCCR to be 'common' and 'normal' behaviour among their peers, "*I've heard about it a lot*" (Alam & Alldred 2021, page 7). Likewise, females in Lévesque et al., (2021) study perceived NCCR occurrence in non-committed relationships is higher (n=11) as compared to committed relationships (n=3) perpetrated by men in common.

Both (Czechowski et al., 2019; Ezzat et al., 2024) study participants perceived that there should be actions against NCCR perpetrators if the consequences yield STIs and unwanted pregnancies; 92.67% (Czechowski et al., 2019), 52.1% (Ezzat et al., 2024) if the consequence is pregnancy. There is only one study where prisons perceived a penalty (52.1%) for NCCR (Ezzat et al., 2024), and no other studies have defined any specific punishment against NCCR perpetrators so far. However, 85.4% of participants in the Czechowski et al. (2019) study perceived penalties for perpetrators, which were not specified further. Only one participant wrote as a response to the penalties of NCCR, "yes, jail time" (Page 13).

Female participants across the ten studies did not comment on how common or frequent they believed NCCR occurred. Instead, data reported focused on their perceptions of NCCR as a betrayal of trust (Alam & Alldred 2021; Czechowski et al. 2019; Lévesque et al., 21) which had significant consequences for their sense of self and their relationship. Czechowski et al. (2019) highlighted this gender difference, with 15.3% of female participants compared to 7.7% of male participants perceiving NCCR as a betrayal of trust. Alam & Alldred (2021) further reported that female participants perceived this violation of trust to degrade female sexual autonomy. For example, one participant reported being a victim of NCCR. They reported feeling disrespected and deceived by their male partner when he removed the condom during sex without their

knowledge or consent (Czechowski et al., 2019). Czechowski et al. (2019) reported that 5.5% of women, compared to 0.4% of men, perceived NCCR to be an act of interpersonal sexual violence. 83.0% of men perceived NCCR as a sexual assault, whereas 91.4% of women perceived it as a sexual assault (Ezzat et al., 2024). For example, a woman in a committed relationship perceived how she felt disregarded and perceived NCCR as violence (Lévesque et al., 2021). Lévesque et al. (2021) also reported experiences of women in long-term, non-committed relationship which highlighted repeated examples of male partners removing condoms without consent. Qualitative extracts and quotes were reported explaining these incidents.

Differences in perception of NCCR as a factor of relationship status were also reported. Lévesque et al. (2021), specifically females in non-committed relationships viewed NCCR as a breach of sexual consent and/or reproductive coercion (RC). While females in committed relationships perceived NCCR to be a 'normal' part of relational dynamics.

Equally, the reasons attributed to NCCR differed by gender, although no studies exclusively compared these. For example, Lévesque et al. (2021) reported that females believed men engaged in NCCR due to their desire to exercise their power and masculinity over their female sexual partner and/or to discard the sexual reproductive autonomy of women. Alam & Alldred (2021) also reported data suggesting that men conduct NCCR to silence women's voices and discard their choice of contraception by dominating sexual intercourse. Although the remaining two studies (Czechowski et al. 2019; Ezzat et al., 2024) did not investigate the reasons for NCCR directly, they did report that NCCR was considered to sexual violence.

Attitudes

Four studies (Alam & Alldred 2021; Czechowski et al., 2019; Davis, 2019; Ezzat et al., 2024) discussed participant attitudes towards NCCR and views pertaining to the reason why NCCR is perpetrated. In addition to the differences in perception towards NCCR based on relationship status (reported above), attitudes towards NCCR also varied as a factor of commitment. For example, one study found that male attitudes towards perpetrating NCCR, within

casual relationships, were more flexible toward removing the condom without consent than when in a committed relationship (Alam & Alldred 2021).

Czechowski et al. (2019) explored attitudes towards the consequences of NCCR. Student participants' attitudes varied; 85% supported significant/harsh legal consequences for perpetrators (not specified by the study, though). While 8% opposed any consequences, 6% were unsure or gave no opinion and a further 11.3% stated consequences should depend on outcomes like STI or pregnancy. Here, Ezzat et al. (2024) reported that participants were more likely to support prison time if consequences involved pregnancy (52.1%) or occurred in casual relationships (54%). The findings also suggested that a small minority (14%) explicitly linked NCCR to sexual violence (Czechowski et al., 2019). Women and non-heterosexual participants are more likely to classify NCCR as a sexual assault and support greater penalties (Ezzat et al., 2024).

Finally, although Davis (2019) did not directly measure the attitudes towards NCCR, NCCR perpetrators had higher scores on measures of Hostility toward women ($M = 2.92$, $SD = 1.05$), Adversarial heterosexual beliefs ($M = 2.29$, $SD = 0.92$), and rape myth acceptance ($M = 1.80$, $SD = 0.90$). Suggesting that hostility toward women was a stronger predictor of stealthing behaviour than adversarial heterosexual beliefs or rape myth acceptance.

Practice and experiences of NCCR

Nine of the ten included studies reported data pertaining to the practice and/or experience of NCCR (Alam & Alldred, 2021; Boadle et al., 2021; Bonar et al., 2021; Chen et al., 2023; Costa et al., 2022; Czechowski et al., 2019; Davis, 2019; Davis et al., 2019; Lévesque et al., 2021). Two of these nine studies also discussed NCCR occurrence within the context of alcohol and/or drug use (Bonar et al., 2021; Chen et al., 2023). Four studies reported data on male perpetration of NCCR (Table 2). Data suggests that between 1.33% and 19.8% of males admit to perpetrating NCCR; mean 9.26%. This is in contrast to the number of females who report being a victim of NCCR. Data from seven of the included studies suggest that between 9.3% and 66.7% of females have experienced NCCR (with a mean occurrence of 21.99%).

Table 5: Reports percentages of participants reporting perpetrating NCCR and/or being a victim of, per included study

Study	Perpetration	Victimisation
Alam & Alldred, 2021		1 female out of 6 (16.7%) experienced NCCR
Boadle et al. (2021)		34 women out of 364 (9.3%) experienced NCCR
Bonar et al. (2021)	6.1% of men 2.8% did it once, 1.2% did it twice, and 1.5% did it 3–5 times. 0.6% did it six or more times.	Of 2550 participants, 18.9% of women reported experiencing NCCR. Once: 10.3%, Twice: 5.2%, 3–5 times: 2.5%, 6+ times: 0.9%. 5% of men reported being victims of NCCR Once: 2.6%, Twice: 1.1%, 3–5 times: 0.7%, 6+ times: 0.8%.
Chen et al. (2023)	19.8% (19/96 males)	
Costa et al. (2022)	1.33% of men (5/377 males)	11.44% (43/376 females) reported being victims of NCCR
Czechowski et al. (2019)		18.7% of women (62/334)
Lévesque et al. (2021)		14/21 women experienced NCCR (66.7%)
Davis et al. (2019)		12.2% of women (n=503 in sample)
Davis, (2019)	9.8% of males (61 out of 626) perpetrated NCCR. 23 males (37.7%) reported one instance of NCCR. 12 males (19.7%) reported two instances. 26 males (42.6%) reported three or more instances. On average, participants who engaged in NCCR reported doing so 3.62 times (SD = 3.87), with a range of 1–21 instances.	

Table-6: Perpetration and Victimisation

Paper author/years	Perpetration (%)	Victimisation (%)
Alam & Alldred, 2021		16.7
Boadle et al. (2021)		9.3
Bonar et al. (2021)	6.1	18.9
Chen et al. (2023)	19.8	
Costa et al. (2022)	1.33	11.44
Czechowski et al. (2019)		18.7
Lévesque et al. (2021)		66.7
Davis et al. (2019)		12.2
Davis (2019)	9.8	

Several studies provided contextual data, adding to the understanding of who is most likely to perpetrate NCCR; for example, Davis (2019) reported that 9.8% of participants reported engaging in NCCR since the age of 14, with an average of 3.62 instances and a range of 1–21 occurrences. Men who exhibited greater hostility toward women (OR = 1.47) and had a more severe history of sexual aggression (OR =

1.06) were significantly more likely to engage in NCCR. Perpetrators also had a history of STI diagnosis, with a larger proportion (29.5%) having had an STI compared to non-perpetrators (15.1%, $p < 0.05$).

Bonar et al., (2021) reported that stealthing disproportionately impacts women. Within the sample, 6.1% of men admitted to having perpetrated

stealththing, with 2.8% practicing it once, 1.2% twice, 1.5% 3–5 times, and 0.6% did it 6 or more times. While 18.9% of women reported experiencing stealththing: Once 10.3%, Twice 5.2%, 3–5 times 2.5%, and 6+ times 0.9%. in comparison, only 5% of men reported being victims of stealththing: Once 2.6%, Twice 1.1%, 3–5 times 0.7%, and 6+ times: 0.8%. This study also reported on incidence in relation to substance use. Specifically, males who engaged in binge drinking, cannabis use, and other illegal drug use had significantly higher odds of perpetrating NCCR, with odds ratios of 1.39, 1.37, and 1.43, respectively. In line with the above, females who reported binge drinking, cannabis use, or other illegal drug use also had elevated odds of being a victim of NCCR, with odds ratios of 1.28, 1.29, and 1.22, respectively. The study also explored race and reported that non-Hispanic white males were less likely to perpetrate NCCR (OR = 0.39), and non-Hispanic white females were less likely to report victimisation (OR = 0.57). Non-heterosexual men were significantly more likely to experience victimisation (OR = 0.24), and older women had slightly higher odds of victimisation (OR = 1.13 per year).

In a similar vein Chen et al. (2023) reported that alcohol use, by both sexual partners, raised the chances of NCCR occurrence. Men who reported drinking to enhance sex-related experiences were 212% more likely to engage in NCCR (Odds Ratio = 3.12, $p < .01$). Additionally, men with stronger sexual coercion-related alcohol expectancies had a 374% increased likelihood of perpetration (Odds Ratio = 4.74, $p < .01$). The survey of 96 American heterosexual and sexually active men found that 19.8% of participants had practiced NCCR, since the age of 14.

Discussion

This mixed-methods systematic review synthesised existing empirical evidence on the knowledge, attitudes, perceptions, and practices related to non-consensual condom removal (NCCR) among young adults aged 30 and below. Drawing from ten studies across five countries, this review is the first to apply the KAPP (Knowledge, Attitudes, Perceptions, and Practices) framework to this issue, offering a comprehensive understanding of how young people conceptualise and experience NCCR. The findings highlight NCCR as an emerging form of sexual violence that remains poorly recognised and insufficiently addressed in both public health and legal contexts.

Principal findings per review objective

Objective 1: Knowledge of NCCR

Awareness and recognition of NCCR and its legal implications

Across the included studies, NCCR was commonly viewed as morally wrong and a breach of trust. However, this moral awareness did not consistently translate into legal or behavioural recognition of the act as a form of sexual assault. Women in casual relationships, non-heterosexual women, and individuals with multiple sexual partners were particularly less likely to perceive NCCR as a violation of consent. This pattern may be shaped by inadequate consent education, the normalisation of coercive sexual behaviours in certain relationship contexts, and entrenched gender norms that obscure the boundaries of sexual autonomy. These findings support existing critiques of hetero-patriarchal norms, which suggest that unequal sexual scripts and male sexual entitlement continue to shape young people's understanding of consent and sexual agency (Decker et al., 2022; Levesque & Rousseau, 2021).

Campaigns such as *#ConsentEverything* (Thames Valley Police, 2015) and *I Heart Consent* (National Union of Students, 2015) have contributed to general awareness of sexual consent. However, their failure to address NCCR directly has left a critical gap in public education. Much of the knowledge young people hold about sexual practices is shaped by informal peer discourse, which, as highlighted in several studies, often spreads misinformation or downplays the seriousness of behaviours like NCCR. Legal understanding of NCCR also remains inconsistent. Many participants were uncertain whether NCCR constitutes sexual assault in the absence of physical harm. This reflects wider debates in legal scholarship, where the concept of conditional consent, defined as consent being contingent on condom use, is still poorly codified and widely misunderstood (Blanco, 2018; Chesser & Zahara, 2019). Without clearer legal recognition, NCCR remains difficult to prosecute and underreported—leaving many victims without adequate pathways to justice or support.

Objective 2: Perceptions of NCCR: Gender Differences and Legal Uncertainty

This review identified clear gender-based differences in how NCCR is perceived. Male participants were more likely to normalise or minimise the behaviour, often viewing it as insignificant or acceptable. In contrast, female participants overwhelmingly interpreted NCCR as a violation of consent and a form of interpersonal violence. Brodsky (2017) emphasised the coercive dynamics of such encounters, highlighting cases where women who resisted NCCR were subjected to emotional pressure or threats to continue intercourse despite the breach of the initial agreement. She notably described

NCCR as “rape-adjacent,” advocating for its criminalisation on the grounds that it violates bodily autonomy and undermines consent.

Perceptions of appropriate legal consequences were also inconsistent. While some participants supported criminal prosecution, including imprisonment, others were unsure or withheld support unless NCCR resulted in tangible harm, such as pregnancy or STI transmission. This inconsistency reflects a broader lack of public clarity about the legal status of NCCR. As noted by Blanco (2018) and the Legal Information Institute (2011), the legal ambiguity surrounding conditional consent continues to hinder prosecution and underscores the need for clearer judicial standards to effectively address and penalise such conduct.

Objective 3: Attitudes of NCCR

Attitudes shaped by relationship context, gender norms, and perceived harm

Attitudes toward NCCR were influenced by relationship dynamics, gender norms, and perceptions of harm. Male participants—who were often identified as perpetrators—tended to normalise the behaviour, particularly within casual sexual encounters. In line with this, Decker et al. (2021) found that in contexts such as transactional sex, stealthing was perceived as typical or even expected, reinforcing dynamics of male dominance and female disempowerment.

Participants’ views on legal accountability also varied considerably. Many expressed conditional or outcome-based attitudes, supporting legal penalties such as imprisonment only when NCCR resulted in tangible harm, such as pregnancy or STI transmission. This tendency to assess severity based on consequences rather than consent itself reflects broader societal uncertainty about how seriously NCCR should be treated when no physical harm occurs.

Brodsky (2017) critiqued such attitudes as reflective of deeper hostility toward women, describing NCCR as a form of “rape-adjacent” behaviour—defined not by overt force but by coercion and the abuse of power. Her framing challenges the idea that visible harm is necessary to validate a sexual violation, instead calling for recognition of NCCR as a distinct and punishable breach of sexual autonomy.

Objective 4: Practices of NCCR

Behavioural drivers and contextual risks in NCCR practices

This review found that NCCR was often a deliberate and repeated behaviour, primarily perpetrated by men exhibiting traits associated with sexual aggression, hostility toward women, and elevated STI prevalence (Davies, 2019; Tarzia et al., 2020). Victimisation was disproportionately reported by women, particularly those engaged in casual or non-

committed sexual relationships, echoing broader patterns of coercive sexual practices and gendered power asymmetries (Latimer et al., 2018; Dzirasah, 2021).

Substance use, particularly binge drinking and cannabis, consistently emerged as a situational risk factor for both perpetration and victimisation (Chen et al., 2023). Several studies suggested that intoxication was not only associated with impaired judgment but also with attitudes that equated sexual dominance or entitlement with control in intoxicated settings (Ahmad et al., 2020; Karle et al., 2023).

Sociodemographic factors further shaped these experiences. Non-heterosexual men and women, as well as older women within the target age range, reported higher rates of victimisation (Boadle et al., 2021; Karle et al., 2023). These findings underscore the intersectional nature of NCCR, where gender, sexual identity, age, substance use, and relational context intersect to influence both exposure and recognition.

Together, these patterns point to the need for prevention strategies that extend beyond basic consent messaging. Effective interventions must address the broader social and behavioural environments in which NCCR occurs, including power imbalances, relationship expectations, and the influence of substances and social norms on sexual decision-making.

Comparison to the literature

To our knowledge, this is the first systematic review to apply a knowledge, attitudes, perceptions, and practices (KAPP) framework to the issue of NCCR, with a specific focus on young people aged 30 and below. While prior reviews have addressed critical dimensions of NCCR, none have provided an integrated behavioural and thematic synthesis tailored to this age group. Davis, Hammett, et al. (2024) conducted a scoping review that mapped existing empirical studies on NCCR, focusing primarily on prevalence, correlates, and methodological gaps, but without exploring underlying social or behavioural dynamics. Gómez-Durán and Martín-Fumadó (2024) proposed a conceptual reclassification of NCCR as “nonconsensual condom-use deception” and offered typological distinctions based on perpetrator intent, yet did not engage with experiential or demographic-specific patterns. Davis, Neilson, et al. (2024) examined NCCR within the broader context of alcohol-involved sexual assault, highlighting policy failures related to reproductive health and the “rape exception,” though NCCR was not the central focus of that review. In contrast, the present review uniquely synthesises findings across qualitative and quantitative studies to explore how young people’s knowledge, attitudes, social learning, and relationship

contexts shape both the practice and recognition of NCCR.

In contrast to Davis, Hammett, et al. (2024) scoping review, which primarily mapped prevalence rates and risk factors, this review advances the field by thematically synthesising how gendered norms, relational dynamics, and peer discourse shape both the perpetration and under-recognition of NCCR. The inclusion of both qualitative and quantitative data, interpreted through the KAPP lens, allows for a nuanced exploration of how young people conceptualise consent, autonomy, and violation.

Compared with the conceptual approach by Gómez-Durán and Martín-Fumadó (2024), which introduced alternative terminology and classification, this review contributes by grounding NCCR in lived experience and identifying the social and legal misunderstandings that inhibit its recognition. Additionally, this review uniquely incorporates intersectional dimensions, such as sexual orientation and relationship context, which were only minimally addressed in prior literature.

While Davis, Neilson et al.'s (2024) work on alcohol-involved rape highlights structural barriers to justice, including in stealthing cases, their treatment of NCCR is nested within a broader focus on substance-facilitated violence. In contrast, this review centres NCCR as a distinct behavioural practice and examines its intentionality, legal ambiguity, and implications for sexual health.

By focusing exclusively on individuals aged 30 and below and using a structured KAPP framework, this review fills a critical gap in the literature, offering practical insights for targeted consent education, tailored public health interventions, policy reform, and future research.

Study Limitations

Several potential limitations must be noted when considering the findings and implications of the current systematic review. Firstly, NCCR is a stigmatised sexual health topic that has recently emerged and continues as a growing discussion trend in online forums. Secondly, all included studies were published in English and drawn from a limited number of high-income countries, including the UK, USA, Canada, Brazil, Australia, and New Zealand. This restricts the generalisability of findings to global populations, particularly in low- and middle-income countries (LMICs), where cultural norms and legal frameworks around sexual consent and condom use may differ substantially. Thirdly, most studies relied on convenience sampling, often recruiting university students through online surveys or campus-based outreach. This overrepresentation of educated, internet-connected populations may not reflect the experiences or attitudes of more diverse or marginalised youth groups, including those with limited educational access or different cultural

backgrounds. Fourth, while the inclusion criteria allowed for individuals aged 30 and below. Fifth, the data across studies were predominantly cross-sectional and retrospective, limiting causal interpretations. Many studies also lacked longitudinal follow-up to assess how attitudes, behaviours, or recognition of NCCR evolve over time, particularly in response to education or policy changes. Finally, although this review employed a mixed-methods approach, the majority of included studies were quantitative in nature, and only two were qualitative. This may have limited the depth of insight into the lived experiences, contextual nuances, and psychological impacts of NCCR, particularly from underrepresented voices such as non-binary individuals, male victims, and sexual minorities.

These limitations highlight the need for further primary research with more diverse populations, improved methodological rigour, and inclusion of longitudinal, qualitative, and culturally contextualised studies. Additionally, there is a limited focus on NCCR within the context of men who have sex with men (MSM) (Drouin et al., 2024), where a condom is the only choice for the sexual act, and NCCR occurs by one male sexual partner with another male sexual partner (Klein, 2014; Latimer et al., 2018) however, none of the literature has proven relational power in this context needs more investigation. Furthermore, the intentions of perpetrators, primarily men, and any potential involvement of women in perpetration have yet to be explored. Therefore, the study recommends exploring those aspects further.

Further research

All articles included in this paper acknowledged that NCCR needs to be studied more, and the current retrospective, cross-sectional nature of their data, small sample size, convenience sampling, a particular age group of participants, a particular gender, and a specific community could not generalise the findings for a large population.

Firstly, further investigation is needed into the depth and nuance of young people's knowledge about NCCR, particularly their ability to distinguish it from other forms of sexual misconduct and to understand concepts such as conditional consent. Research exploring how this knowledge is shaped by peer discourse, digital media, and sex education curricula would be particularly valuable.

Secondly, studies should continue to explore the perceived meaning and impact of NCCR, especially across varying relational contexts. This includes examining how casual sexual arrangements—such as “friends with benefits” (FWB), which are increasingly common among young adults (Mongeau et al., 2023)—influence interpretations of consent, trust, and violation. Such work would help clarify how

relational expectations shape recognition and internalisation of NCCR.

Thirdly, there is a need to examine the attitudinal drivers of NCCR, particularly those related to gender norms, sexual entitlement, and legal ambiguity. Understanding how these attitudes differ across age, race, gender identity, sexual orientation, and cultural background is essential for developing targeted educational and legal interventions.

Fourth, future research should examine the lived experiences of both victims and perpetrators, moving beyond cross-sectional surveys to explore the long-term psychological, psychosexual, and physical effects of NCCR. Qualitative studies are especially needed to capture the emotional and relational dimensions of these experiences, as well as the sociocultural barriers to disclosure and help-seeking. To provide clearer direction aligned with the study's objectives, future research should examine how young people conceptualise non-consensual condom removal (NCCR) within the broader context of sexual consent education, particularly how gaps in knowledge and terminology affect recognition and reporting. Research into perceptions should explore how relationship dynamics, cultural beliefs, and media portrayals influence whether NCCR is framed as coercion, betrayal, or normative behaviour. Attitudinal studies could investigate how gender roles, power imbalances, and perceived harm shape individuals' support for legal accountability or public health interventions. Finally, to better understand practices and lived experiences, longitudinal and qualitative studies are needed to capture the real-life contexts in which NCCR occurs, including factors such as trust, relationship type, coercion, and substance use.

Conclusion

This paper synthesises the literature on the practices, experiences, attitudes, and knowledge of NCCR among young people aged 30 and below. The findings consistently reflect the relationship dynamics, gender and under-recognition of NCCR as a legal and sexual offence. Knowledge of NCCR is shaped by peer discourse instead of formal education. Perceptions were determined by gender and relationship context. Unless there are adverse consequences of STIs and pregnancies, NCCR is less acknowledged as an offensive sexual act, reflecting a conditional understanding of consent violation. Attitudinally, support for punitive measures varied, with most favouring legal consequences for physical harm (STIs, pregnancies) but few connecting it to sexual violence. Hostility toward women and adversarial gender beliefs were significant predictors of perpetration, highlighting the influence of misogynistic attitudes. The prevalence has been seen as a widespread phenomenon with perpetration by men and victimisation among women, and is more

visible in casual intimacy. Altogether, these findings indicate that NCCR is not merely a consent issue; instead, it is a global public health and gender-based violence threat. Therefore, there is a pressing need for integrated sexual health education that explicitly addresses stealthing, clearer legal frameworks to support victim recourse, and trauma-informed clinical practices to support disclosure and recovery. Future research should explore intervention strategies, expand beyond high-income countries, and prioritise the lived experiences of marginalised and underrepresented groups.

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