

ORIGINAL RESEARCH

Real-world exploration of men's involvement in contraception: an observational study in a convenience sample

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Abstract

Background: Dependable male contraceptive options are restricted to vasectomy and condoms, with 30% of couples using male contraception. We need to update the understanding of current European and Belgian trends in couple and male contraception due to ongoing changes in practices. **Methods:** Between July and September 2023, 1200 men consented to participate in a phase 4, survey-based study focusing on three primary themes: the discussion, the responsibility and the utilization of male contraception in couple. **Results:** Five hundred and ninety-four patients responded to the study (49.5%). The findings indicated that men in Central Europe were more inclined to engage in discussions about contraception compared to their counterparts in Southern Europe. Men in the 18–25 age bracket participated more in decision-making processes. The interest diminished with age. Men possessing higher education were more inclined to engage in discussions about contraception and to share responsibilities with their spouses. Regarding participation in contraception, vasectomy was widely recognized, with approximately 75% of men expressing willingness to utilize this treatment. Condom utilization often declines with age, but vasectomy prevalence rises. **Conclusions:** The research underscores the necessity for enhanced knowledge and education regarding male contraception. Facilitating educated decision-making and equitable distribution of contraception is essential, particularly with the advent of novel male contraceptive techniques.

Keywords

Male contraception; Vasectomy; Phase 4 study; Discussion; Responsibility

1. Introduction

Contraception aims to prevent pregnancy following sexual intercourse. Recently, traditional female hormonal methods have faced increased scrutiny due to concerns about women's health (including cardiovascular, metabolic, thrombotic, potential cancer risks, and mental health effects) and environmental impact (primarily the excretion of synthetic estrogens into wastewater, potentially disrupting aquatic ecosystems) [1, 2]. As women increasingly bear the contraceptive burden, sharing this responsibility has become essential [3].

The role of men in couple contraception has evolved significantly over the last decade, with a growing recognition of their responsibility and involvement in family planning. Traditionally, contraception has largely been perceived as a woman's responsibility, with options such as oral contraceptives, intrauterine devices (IUDs), and hormonal implants being widely used. However, emerging social, cultural, and technological shifts are redefining male participation in contraception.

Modern relationships emphasize gender equality, encouraging shared decision-making in family planning. Although only 30% of couples use male contraceptive methods [4], men are increasingly expected to contribute actively to contraceptive choices [5].

One of the main hurdles is the limited number of male contraceptive methods. Condoms remain the only common, safe and accessible male contraceptive method, providing both pregnancy prevention and protection against sexually transmitted infections (STIs). Its failure rate is 2% with perfect use, but increases to 14% with ordinary use, according to the World Health Organization (WHO) [6]. Vasectomy is a surgical intervention with a failure rate of less than 1% and a rare complication rate of 1–2%; roughly 7% of men experience regret following the treatment [7]. It should be considered an irreversible approach not suitable for all age groups [8]. As a result, the withdrawal method, although unreliable, continues to be commonly used in certain populations. Awareness campaigns and sexual health education initiatives are helping

to dispel myths and encourage men to take a proactive role in contraception [9].

Recent research has documented a growing scientific and public health interest in male contraceptive methods [10]. Several male contraceptive methods are currently under investigation, including hormonal contraception, which suppresses sperm production by inhibiting the hypothalamic–pituitary–testicular axis [11]; thermal contraception, which inhibits spermatogenesis by increasing testicular temperature [12, 13]; immune-based approaches targeting spermatogenesis or sperm motility through retinoic acid receptors, enzymes, or other specific receptors [14]; and vas deferens occlusion, a technique involving polymer injection into the vas deferens that is currently in phase 3 trial [15–17]. However, real-world utilisation of the currently available options vasectomy and condoms remains low and exhibits considerable heterogeneity across European countries [18]. Persistent deficits in knowledge, prevalent misconceptions, and limited couple communication concerning male contraception continue to be reported. Much of the existing evidence is dated or derived from restricted populations, offering limited understanding of how regional, educational, socioeconomic, and demographic factors influence men’s engagement with contraceptive responsibility. Contemporary, population-representative European data are therefore essential to delineate current patterns of use and acceptability, and to inform the targeted development, regulatory approval, and successful implementation of emerging male contraceptive methods.

The primary aim of this exploratory observational study was to describe men’s self-reported discussion of contraception with their partners, their perceived responsibility for contraception within the couple, and their willingness to personally use or consider different contraceptive methods in a real-world European context. A secondary aim was to explore whether these outcomes vary according to key sociodemographic characteristics (age, educational level, nationality/region of residence within Europe, relationship status) and selected psychological factors (impulsivity). Given the convenience nature of the sample and its recruitment partly through clinical settings in Europe, we also sought to provide preliminary insights into male contraceptive attitudes and involvement in a healthcare-accessing population, as a foundation for future larger-scale or community-based investigations.

In addition to traditional frameworks focused on masculinity beliefs or socioeconomic factors, we included impulsivity as a variable of interest. This decision was based on emerging evidence linking impulsivity traits to risk-taking behaviors in sexual and reproductive health decisions, including contraceptive adherence and partner communication. By integrating this psychological dimension, the study seeks to broaden the understanding of factors influencing male involvement in contraception [19, 20].

2. Material and methods

From July to September 2023, we invited heterosexual men aged 18 years or older to participate in an online anonymous study. Participants were recruited opportunistically without

restriction to specific clinical settings when attending 3 University Hospitals (CHU UCL Namur—Godinne, Cliniques Universitaires Saint-Luc, Hospital Erasme—Hôpital Universitaire de Bruxelles) as well as through phone calls, social media and with help of Belgian scientific societies (Société Belge d’Urologie, Belgische Vereniging voor Urologie). This convenience approach reflects the preliminary, exploratory phase of broader research on male contraception.

We distributed the questionnaire by e-mail to 1200 individuals, of whom 594 completed it (response rate: 49.5%). International participants were recruited through European collaborators involved in the study. No formal sample size or power calculation was performed, as this was an exploratory study based on a convenience sample. In this article, we report the responses to the first nine items of a 34-item questionnaire. The complete questionnaire, including the exact wording of each question, response options, and coding notes for analysis, is provided in **Supplementary Table 1**.

Prior to the main section, participants were asked to provide their age and sexual orientation.

To enhance clarity and facilitate a concise presentation of the principal findings, responses were categorised into three overarching sections: Discussion, responsibility, and engagement.

Education level was simplified into two categories: low and high. Low education was defined as a secondary school certificate or less (Certificat Enseignement Secondaire Supérieur (CESS) in Belgium). Impulsivity was measured using the validated Barratt Impulsivity Scale (BIS-15), which includes 15 self-reported items. A higher score on the BIS-15 indicates greater impulsivity, meaning the person is more likely to act quickly without thinking or to have difficulty with self-control [21] (**Supplementary Table 2**). The local ethical committee approved the study (B0392022000072), and informed consent was obtained as the first step. The platform used was SurveyMonkey.

A pilot study was conducted for face and content validation. The 34-item questionnaire was pre-tested in 5 heterosexual men of reproductive age (convenience sample from one hospital). Participants confirmed clarity, relevance, and completeness for the three domains (shared decision-making, responsibility, engagement). Minor wording adjustments were made; completion time was 8–12 minutes. The final version was deployed unchanged.

Data were analyzed using SPSS software version 25 (SPSS Inc., Somers, NY, USA). Binary variables were reported as frequencies and proportions. Where appropriate, comparisons between nationalities or region were conducted using Pearson’s chi-squared, Fisher-Freeman-Halton’s exact, and binomial tests. A p -value of < 0.05 was considered statistically significant. In addition to p -values, effect sizes were reported for all main comparisons: Cramer’s V for χ^2 tests (small ≥ 0.10 , medium ≥ 0.30 , large ≥ 0.50) and odds ratio with 95% confidence intervals when relevant. Odds ratios were retained where previously calculated. *Post hoc* tests with p -value adjustment were used to control for multiple comparisons and limit false-positive results (**Supplementary Table 3**).

For analytical purposes and because some countries were minimally represented, participants’ countries were grouped: Belgium was combined with the Netherlands and Luxembourg

(Benelux), Spain and Italy formed Southern Europe, Switzerland and Germany comprised Central Europe, and France was treated as a separate region. Given the non-interventional nature of this study and the descriptive focus on demographic data, no imputation was performed for missing data; analyses were conducted using available data only.

3. Results

The characteristics of the study population are detailed in Table 1. Five hundred ninety-four (49.5%) patients answered and returned the questionnaire. Of these, 91% were from the Benelux. Responses were analyzed based on nationality, age, education, impulsivity, and relationship status.

TABLE 1. Population description.

General Characteristics	Number (N = 594)	Percentage (%)
Nationality (N = 583)		
Benelux	533	91
France	30	5.5
Central Europe	13	2.2
Southern Europe	7	1.2
Age (yr) (N = 591)		
18–25	5	0.8
26–35	84	14
36–45	159	27
46–55	208	35
>55	135	23
Religion (N = 569)		
No Religion	279	49
Catholic	282	49.6
Muslim	5	0.9
Buddhist	2	0.4
Jewish	1	0.2
Marital Status (N = 594)		
Single	52	8.8
In a relationship	542	91.2
Education (N = 593)		
≤CESS	147	25
>CESS	446	75

CESS: certificat enseignement secondaire supérieur, high-school diploma.

3.1 Discussion about contraception

The proportions of men discussing contraception with their partners are reported in Table 2. In Benelux, only 65% of men discuss with their partners, compared to 77% in France. This proportion significantly decreases with age ($p < 0.01$; Cramer's V 0.26; **Supplementary Table 3**) and in patients with a low education level ($p < 0.01$; Cramer's V 0.17). A

higher impulsivity score is associated with a greater likelihood of discussing contraception, with an overall odds ratio (OR) of 2.77 and an increase of 1.07 per score point.

TABLE 2. Characteristics of patients answering Question 5: do you discuss contraception in your couple?

	Percentage answering "yes" (%)	Total answer	p value*
Nationality (n = 583)			
Benelux	64.5	533	0.02*
France	76.7	30	
Central Europe	92.3	17	
Southern Europe	28.6	7	
Age (yr) (n = 591)			
18–25	100	5	<0.001*
26–35	88.10	84	
36–45	71.7	159	
46–55	64.9	208	
>55	43.7	135	
Religion (n = 569)			
No religion	69.9	279	0.12*
Catholic	60.3	282	
Muslim	60.0	5	
Buddhist	100	2	
Jewish	100	1	
Marital Status (n = 593)			
In a Relationship	65.4	541	0.07*
Single	67.3	52	
Education (n = 593)			
≤CESS	53.0	147	<0.001*
>CESS	69.7	446	
Barratt Score (n = 584)			
≥30/45	62.7	142	0.49*
<30/45	65.8	442	

*Pearson's chi-squared test; CESS: certificat enseignement secondaire supérieur, high-school diploma.

3.2 Responsibility

The proportion of men who reported being responsible for contraception is reported in Table 3. The proportion considerably changes according to age, educational attainment, and relationship status.

Forty-five percent of males over the age of 45 are accountable for contraception. A higher proportion of older men than younger men report responsibility ($p < 0.01$; Cramer's V 0.42). Approximately 40% (n = 236) of men across all age groups indicated that the decision regarding contraception was a joint one with their partner.

Men with limited educational attainment were in favor of

TABLE 3. Characteristics of patients answering Question 6: who is ideally in charge of contraception in couple in your opinion?

	Percentage (%)				Total answer	p value
	Men	Women	Both	Neither		
Nationality (n = 584)						
Benelux	38.6	18.4	38.6	4.5	534	0.13*
France	23.3	33.3	40	3.3	30	
Central Europe	15.4	23.1	53.9	7.7	13	
Southern Europe	14.3	0	71.4	14.3	7	
Age (yr) (n = 591)						
18–25	20	40	40	0	5	<0.001*
26–35	16.7	34.5	44.05	4.8	84	
36–45	30.2	25.2	42.8	1.9	159	
46–55	45	10.5	42.1	2.9	209	
>55	44.4	14.8	29.6	11.1	135	
Religion (n = 569)						
No religion	33.7	20.8	42.3	3.2	279	0.18*
Catholic	40.3	17	37.1	5.7	283	
Muslim	60	0	20	20	5	
Buddhist	0	50	50	0	2	
Jewish	0	100	0	0	1	
Marital Status (n = 594)						
In a Relationship	37.6	19.6	37.6	5.2	542	0.006
Single	26.9	11.5	61.5	0	52	
Education (n = 412)						
≤CESS	49.7	10.6	35.4	1.4	147	0.005
>CESS	32.4	20.6	41.2	5.8	446	
Barratt Score (n = 585)						
≥30/45	40.6	18.9	33.6	7	143	0.23*
<30/45	35.8	18.8	41.4	4	442	

*Pearson's chi-squared test; CESS: *certificat enseignement secondaire supérieur*; high-school diploma.

contraception being ideally male (49.7%; n = 73) or shared by both partners (35.4%; n = 52). In contrast those with higher education were significantly more in favor of contraception under the responsibility of the woman (20.6%; n = 92) or of neither partner (5.8%; n = 26) ($p < 0.01$; Cramer's V 0.13; **Supplementary Table 3**).

Single males are more inclined to depend on shared responsibility for contraception, at 61.5% (n = 32), in contrast to 37.6% (n = 204) of individuals in stable relationships who prefer contraception responsibility to be solely that of women or men ($p < 0.01$; Cramer's V 0.15).

3.3 Engagement

The men's preferred contraceptive method by age is reported in Table 4. A significant majority of men (93.9%) are amenable to contraception. Seventy-four percent of them are predisposed to select a vasectomy, with the percentage escalating with age. Condoms serve as a supplementary choice, especially for

younger individuals. Vasectomy is favored by 93.2% (n = 136) of men with ≤CESS education, in contrast to 68.3% (n = 302) of those with >CESS education ($p < 0.01$; Cramer's V = 0.24; **Supplementary Table 3**).

4. Discussion

Interestingly, our study revealed a surprisingly high proportion of men who reported being open to vasectomy. This is notable given that, over the past 15 years, demand for vasectomy has increased across Europe, yet only about 10% of men using contraception actually choose this method [6]. Traditionally, vasectomy is most commonly selected by men over 35 who have fathered children and are seeking a permanent method of contraception.

Our findings are consistent with previous European studies demonstrating a gradual increase in male involvement in contraception over recent decade as reported by Le Guen *et al.* [4]. However, this study adds value by simultaneously

TABLE 4. Contraceptive methods men are willing to use by age group.

Age (yr)	Methods						Total
	Condom	Thermal	Vasectomy	Hormonal	No contraception	Open to all	
18–25	3	0	2	0	0	0	n = 5
26–35	60	0	40	0	0	0	0.9%
36–45	33	3	28	11	6	2	n = 84
46–55	39.3	3.6	33.3	13.1	7.1	2.4	14.3%
>55	23	0	120	7	4	2	n = 158
Total	14.6	0	76	4.4	2.5	1.3	27%
	8	0	186	1	10	1	n = 206
	3.9	0	90.3	0.5	4.9	0.5	35.2%
	13	0	100	3	16	1	n = 133
	9.8	0	75.2	2.3	12	0.8	22.7%
	n = 80	n = 3	n = 436	n = 22	n = 36	n = 6	n = 586
	13.7%	0.5%	74.4%	3.8%	6.1%	1%	$p < 0.001$

assessing partner discussion, perceived couple responsibility, and personal willingness across methods in a single real-world sample, while exploring novel correlates such as impulsivity. These multi-dimensional insights, obtained from a healthcare-engaged European convenience sample, provide updated, hypothesis-generating data that complement existing literature and lay groundwork for future targeted interventions and more representative investigations.

Our study, however conducted with a limited sample of respondents outside the Benelux, suggested that the country of origin may affect perceptions of male contraception. Men from Southern Europe appeared less likely to discuss contraception, which could reflect cultural norms and women's social status. The Women, Peace, and Security Index (WPS) rates nations according to women's conditions, safety, and societal participation, emphasizing these disparities [22]. Southern European nations, such as Spain (21st) and Italy (27th), possess inferior ranks relative to Benelux countries, including Belgium (10th) and Luxembourg (4th). These rankings indicate that nations with elevated WPS scores, signifying improved conditions for women and enhanced gender equality, may promote more open discourse regarding and acceptance of contraception. These findings require confirmation in larger samples.

Age, as anticipated, is a crucial determinant affecting contraceptive views and practices. Our research revealed that more than 70% of males under 45 engage in discussions about contraception, and 93.5% express a willingness to participate in contraceptive practices. The elevated interest indicates that younger men are more proactive about contraception. This element is crucial given that French speaking Belgian women are increasingly using fewer contraceptive oral methods (67% in 2014 to 40% in 2022) [23], exposing themselves and the partner to the risks of unintended pregnancies, according to the World Health Organization [24]. The phenomenon is also observed to a lesser extent in the northern part of the country (67% versus 48%), as well as internationally, such as in Canada [23]. Societal habits are evolving and a growing interest among men combined with an enhanced information would be advantageous in improving contraceptive practices. Men are increasingly becoming a target in the prevention of unintended

pregnancies due to this trend.

The frequency of conversations and women's participation in contraception diminish after the age of 45, perhaps due to menopause and associated alterations in reproductive health [25]. Young men typically favor reversible contraceptive techniques owing to apprehensions regarding the possible ill effects of hormonal options and a predilection for natural alternatives [1]. As women grow older and the health risks associated with hormonal contraception increase, greater male involvement in contraceptive decision-making becomes essential to share the responsibility equitably.

The amount of education strongly influences contraceptive decisions. Men with lesser educational attainment (\leq CESS) are more inclined to opt for vasectomy than those with higher education ($>$ CESS). The observed association between lower educational level and reduced preference for vasectomy (or other permanent/complex methods) likely reflects multiple interrelated factors beyond mere comprehension of method details. These may include differences in health literacy, perceived access to information or services, socioeconomic barriers, varying exposure to counseling, and potentially differing social norms or cultural influences on reproductive decision-making. In the European context, where universal access to education and healthcare mitigates some disparities, educational level was analyzed independently of ethnicity or cultural background. Nonetheless, we acknowledge that broader structural factors (*e.g.*, access to care, normative beliefs) may contribute to these patterns. Lower education has been linked to higher impulsivity, but our study did not confirm this with the Barratt Score, possibly due to population or methodological differences [21].

The association between men with higher scores on impulsivity (BIS-15 \geq 30) and greater likelihood of discussing contraception with a partner was unexpected. As causality cannot be inferred from a cross-sectional design, we report this finding as exploratory and recommend further longitudinal or qualitative research to clarify its meaning.

Several limitations should be acknowledged. First, we were unable to precisely track participant flow—whether the survey link was opened, initiated, or abandoned—nor to characterize

non-respondents, due to anonymous distribution through multiple channels (direct email, social media, scientific societies, and third-party forwarding). Consequently, only the total number of invitations ($n = 1200$) and completed responses ($n = 594$) were available.

Second, certain demographic groups were under-represented, which may have introduced selection bias. More than half of participants were over 45 years old, a characteristic likely to influence contraceptive choices as contraceptive relevance decreases with age. In addition, most participants were in a relationship, reflecting the central role of contraception in their daily lives. Only five respondents were under 25 years old, highlighting both recruitment challenges within this age group and the need for future work to better explore their engagement and willingness to participate in male contraception initiatives.

Third, recruitment was predominantly Benelux-based, driven by Belgian university hospital networks and national urological societies. International participation relied largely on voluntary individual redistribution and lacked structured outreach through foreign scientific bodies or media, resulting in under-representation of certain European regions. Findings from these areas should therefore be interpreted with caution.

Missing data were limited but not imputed, and their potential impact could not be fully assessed due to confidentiality constraints, leaving room for bias—particularly in under-represented subgroups. Additionally, the use of a convenience sample partly recruited from clinical settings may introduce selection bias and limit generalizability to the broader population. A larger pan-European study, supported by coordinated collaboration with additional scientific societies, would help validate the trends observed in this study, reduce regional imbalance, and improve representativeness across age groups.

These findings underscore the need for targeted interventions, including: (1) awareness campaigns emphasizing the value of open couple discussions and shared contraceptive options; (2) enhanced training for specialists and general practitioners to deliver accurate, consistent, and comprehensive counseling; and (3) integration of structured sexual and reproductive health education into school programs to foster early knowledge and responsible decision-making.

5. Conclusions

This exploratory study among European men suggests that a notable proportion report discussing contraception with partners, endorsing shared couple responsibility, and expressing willingness to consider various contraceptive methods. Descriptive patterns indicate potential differences by age and educational level in perceived responsibility and method preferences, while limited representation of certain subgroups and regions precludes firm conclusions on nationality-related differences. These preliminary observations support continued efforts to promote comprehensive contraceptive counseling for men and open partner communication. Larger, representative studies are needed to confirm these patterns and inform targeted strategies for more equitable sharing of contraceptive responsibility.

AVAILABILITY OF DATA AND MATERIALS

All additional data, including the questionnaire used for the study, the BARATT score, and the corrected p -values, are available in the **Supplementary material** section submitted with the article.

AUTHOR CONTRIBUTIONS

AD—designed the study as part of her doctoral thesis. JB, RH, AD, SW, GAD, MF and MDG—contributed to patient recruitment. AD, RH and JB—collected the data. BT and TR—provided guidance on the study design and supervised AD's thesis. AD and RH—analyzed the data. RH—drafted the manuscript. BT, JVD, RAZ and SW—revised the first draft. All authors contributed to subsequent revisions and approved the final manuscript.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

This study was approved by the Ethics Committee of CHU UCL Namur and subsequently by the Ethics Committees of Cliniques Universitaires Saint-Luc (CUSL) and Hôpital Universitaire de Bruxelles (HUB) (approval number: B0392022000072). Written informed consent was obtained from all participants prior to inclusion in the study.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

SUPPLEMENTARY MATERIAL

Supplementary material associated with this article can be found, in the online version, at <https://oss.jomh.org/files/article/2071825645350862848/attachment/Supplementary%20material.docx>.

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