

# Norwegian Data on Prevalence, Sexual Risk Behaviors, Sexual Problems, and Sexual Satisfaction in Men Who Have Sex Exclusively with Women, Men Who Have Sex Exclusively with Men, and Men Who Have Sex with Men and Women

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## ABSTRACT

**Objective:** This study investigates how men who have sex exclusively with women (MSEW) differ from men who have sex exclusively with men (MSEM), and men who have sex with men and women (MSMW) on selected variables.

**Methods:** A probability-based web sample of 2,181 men was recruited.

**Results:** Most MSEM considered their sexual identity as gay, and most MSMW as heterosexual. The MSEM were the most frequent condom users, while MSMW were the least frequent users and had the highest number of sexual partners. The MSEM and MSMW had a lower likelihood of premature ejaculation than MSEW.

**Conclusions:** MSMW should be targeted in health campaigns.

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## Introduction

Much of the literature, especially among sexual minorities (e.g., MSM) has a one-sided biomedical focus assessing only sexual risk factors and prevalence's rates of STI's and HIV infections (Berg, 2012, 2013; Berg et al., 2020; Jakopanec et al., 2013; Xu et al., 2010). This is despite recent work suggesting that a focus on pleasure and sexual well-being may be most important for vulnerable populations including sexual minorities (Ford et al., 2021; Gianotten et al., 2021). According to the World Health Organization, sexual health is defined as “a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity” (WHO, 2002, p. 4). An important aspect of sexual health is the absence of disease. To achieve this goal, a low degree of sexual risk behavior is warranted. However, sexual health is also about well-being and pleasure, which brings focus to more than sexual risk behavior. For instance, people's sexual

satisfaction is likely to be of importance, as well as their use of means to enhance sexual pleasure. As there is an increasing awareness of the favorable influence of a satisfactory sex life for most individuals (Francoeur & Noonan, 2004), this study aims to employ a broad framed approach to exploring sexual risk variables as well as factors evaluating the sexual quality of men who report having sex exclusively with women (MSEW), men who report having sex exclusively with men (MSEM), and men who report having sex with men and women (MSMW).

## Sexual identity

Sexual identity describes one's self-understanding of one's sexual or romantic attraction and behavior, but this self-understanding is fluid and can change during an individual's life course (Ellis et al., 2020), depending on historical, political, socio-cultural, and contextual factors that can influence one's self-acceptance and identity

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integration (Diamond, 2008). Broader sexual identity labels, such as “queer” and “pansexual” are increasingly being used by young people, partly to avoid “locking” oneself into a particular pattern of sexual behavior or attraction (Russell et al., 2009). Of interest in this study is that minority stress and concealment of sexual identity are shown to be linked to poor mental health (Meyer, 1995, 2003). Minority stress theory rests on the assumption that there is a relationship between minority stress and mental health. According to Meyer (1995, 2003), four types of minority stress are linked to poor mental health; (1) external objective stressful events and conditions, (2) expectations of such events and the vigilance this expectation requires, (3) internalized homonegativity (IH), and (4) concealment of sexual identity. Given that concealment of sexual identity is linked to poor mental health, it can reasonably also be assumed that it will be related to various aspects of sexual health. HIV/AIDS has often been referred to as a ‘gay disease’ (Catungal et al., 2021), indicating that sexual identity or sexual orientation has to do with the disease. However, HIV/AIDS is the result of individuals’ sexual behavior, and not of sexual identity or orientation. In Norway, a country with 5.4 million inhabitants in the Nordic region, same gender sexual practice has been legal since 1972, and discrimination on the grounds of sexual orientation was banned in 1981. Furthermore, since 2009 marriage laws have been gender neutral. Same gender sexual practice is socially more accepted in Norway and the other Nordic countries than in the majority of other Western countries (Haavio-Mannila & Kontula, 2003; Kontula & Haavio-Mannila, 1995; Lewin et al., 2000). Even though Norwegians generally report positive attitudes toward homosexuality (Anderssen & Malterud, 2013), previous studies indicate that minority stress continues to be an issue for sexual minority groups (Prell & Traeen, 2018).

Perception of one’s sexual identity is important in shaping the right message and addressing the message to the correct target group. In addition, attitudes toward sexuality, perceived educational effects of using pornography, sexual functioning, sexual satisfaction, pleasurable and safe sexual experiences are important aspects of sexual health

(WHO, 2002), and selected studies are further outlined below. It should be noted that many of the presented studies below use sexual identity/orientation and not behavioral categories in their analyses. Accordingly, findings from studies of heterosexual/bisexual/gay men may have relevance for men who report having sex exclusively with women (MSEW), men who report having sex exclusively with men (MSEM), and men who report having sex with men and women (MSMW), even though it is not the same groups that are compared.

### **Sexual risk behavior**

Studies have shown that MSMW and MSEM are well-known risk groups for contracting STIs, including HIV/AIDS (Dyer et al., 2017; Friedman et al., 2014; Zule et al., 2009). Also, men who have sex exclusively with women (MSEW) constitute a risk group for STIs, but not to the same extent as the MSEM and MSMW. For instance, a systematic review and meta-analysis found that MSMW were less likely to be HIV-positive and to have unprotected receptive anal intercourse compared to MSEM, but more likely to be HIV-positive compared to MSEW (Friedman et al., 2014). Heterosexual activity largely seems to take place within separate aggregates (Billy & Udry, 1985a, 1985b; Kutchinsky, 1988), which made Lewin (1990, 1991) describe sexual interaction as a compartmentalized activity. People most often find their sex partners within their own compartments and rarely seek out partners outside their compartments (Lewin, 1990, 1991). However, exceptions occur, and MSMW may be a typical example of this. MSMW carries the risk of transmitting sexually transmitted infections (STIs) from one compartment to another (Dyer et al., 2017; Zule et al., 2009), which highlights the need for pinpointing MSMW as target groups for STI preventive work. However, to reach these target groups with preventive measures, we need more insight into other aspects of their sexuality than the mere gender of their sexual partners, such as how they perceive their sexual orientation and identity. Sexual orientation can be defined as a person’s unique pattern of sexual and

romantic attraction, behavior, and identity (Lehmiller, 2017).

Several studies have indicated that in heterosexual men, using pornography positively correlates with a higher number of male and female partners, being dissatisfied with one's sex life, and practicing types of sex often portrayed in pornography (Haavio-Mannila & Kontula, 2003; Lewin, 2000; Rogala & Tyden, 2003; Traeen & Daneback, 2013; Tyden & Rogala, 2004). For instance, there is a positive relationship between the use of pornography and an increased interest in experimenting with anal sex (Haavio-Mannila & Kontula, 2003; Lewin, 2000; Rogala & Tyden, 2003; Traeen & Daneback, 2013; Tyden & Rogala, 2004).

Gay/bisexuals are disproportionately higher consumers of pornography than heterosexuals and are disproportionately at high risk for STIs (Hald & Malamuth, 2008; Lewin, 2000; Traeen et al., 2006; Traeen & Daneback, 2013). Researchers have proposed that the consumption of pornography may not only negatively influence the sexual attitudes and behaviors of men who have sex with men (MSM, not considering if they also have sex with women). It may also be an important source of sexual information for MSM in providing validation, understanding, and confirmation of their sexual orientation (Hald et al., 2013). In a study among US MSM, 97% reported positive effects of pornography consumption on sexual knowledge, enjoyment of sex, and understanding of their sexual orientation (Hald et al., 2013). Only 3% reported negative effects of pornography consumption. This implies that pornography may influence people's sexual scripts (Stulhofer et al., 2007, 2010), for instance, related to condom use. In a sample that comprised 529 MSM in Norway, Traeen et al. (2015) explored the association between the consumption of pornography depicting condoms and non-condom use and HIV/STI-related sexual risk behavior among MSM. The researchers found a bivariate association between the use of pornography depicting condom use and lesser STI-related sexual risk behavior. In another study from the same sample, Traeen et al. (2015) found that the consumption of bareback pornography was significantly associated with unprotected anal intercourse. Furthermore, MSM who started

using pornography at a later age were less likely to have unprotected anal intercourse than MSM who started earlier. These findings were confirmed in a sample of US MSM (Rosser et al., 2013). Although there is some literature on MSM's pornography use and sexual risk behavior, these previous studies (Hald et al., 2013; Traeen et al., 2015) did not distinguish between MSEM and MSMW, nor did they compare those groups to MSEW. However, both these studies indicate that pornography use can influence sexual scripts.

### ***Sexual satisfaction and function***

Sexual satisfaction can be defined as "an affective response arising from one's subjective evaluation of the positive and negative dimensions associated with one's sexual relationship" (Lawrance & Byers, 1995, p. 268). In an American study, gay and bisexual men reported lower sexual satisfaction than heterosexual men (Flynn et al., 2017). In addition, Björkenstam et al. (2020) found that bisexual men were more dissatisfied with their sex lives than both heterosexual and gay men. Sexual function is an important factor in sexual health and well-being. The third National Survey of Sexual Attitudes and Lifestyles (NATSAL-3) found that the most frequently reported sexual problems among adult men were a lack of interest in sex (15%), premature ejaculation (15%), and erectile dysfunction (13%). In a large population-based survey from Sweden, Björkenstam et al. (2020) found that compared to heterosexual men, gay men lacked sexual arousal, had no orgasm, and were at lower risk of experiencing premature ejaculation. Similarly, Frederick et al. (2018) found that gay men were at a higher risk of not having an orgasm than heterosexual men. Furthermore, a previous study showed that, compared to heterosexual men, gay men report lower interest in sex (Flynn et al., 2017). Bisexual Swedish men experienced a higher risk of lack of sexual interest and enjoyment than heterosexual men (Björkenstam et al., 2020). Gay men had a lower risk of premature ejaculation than heterosexual men and were more likely to report less excitement and enjoyment during sex (Björkenstam et al., 2020). No significant difference was found in erectile difficulties faced by Swedish gay and heterosexual men,

but bisexual men were at a higher risk of reporting erectile difficulties than heterosexual men. Bancroft et al. (2005) investigated erectile difficulties and problems with premature ejaculation in a convenience sample of gay men, age-matched with a heterosexual sample. The authors found that erectile difficulties were reported more frequently by gay men, and heterosexual men reported rapid ejaculation more frequently. Furthermore, anxiety was predictive of premature ejaculation in heterosexual men (Bancroft et al., 2005). Flynn et al. (2017) found no differences in erectile function between different sexual orientations in a US study. Björkenstam et al. (2020) found that bisexual men are at a higher risk of erectile dysfunction than heterosexual men, whereas gay men were not.

Most of the reviewed literature above refers to men of different sexual identities or orientations. We do therefore not know whether or not the findings from these studies can be transferred to men in different sexual behavioral categories. On this background, the aim of this paper is:

1. to explore the behavioral categories MSEW, MSEM, and MSMW in relation to self-reported sexual identity.
2. to explore how MSEM and MSMW are different and similar to MSEW with regard to sexual risk behaviors (condom use and the number of sex partners) and sexual functioning and satisfaction (sexual problems, attitudes toward homosexuality, perceived effects of own use of pornography, and sexual satisfaction).

## Methods

### Recruitment

In March 2020 potential participants were recruited via e-mail to obtain a randomly selected sample of 11,685 Norwegians registered in Kantar's Gallup Panel. A total of 4,160 adults aged 18–89 years filled out the questionnaire, resulting in a response rate of 35.6%. Kantar's web panel includes about forty thousand people (<https://www.galluppanel.no/>). Members of the panel are not able to self-recruit but are randomly asked to be panel members using national phone registries. The panel reflects the

population of Internet users in Norway (reflecting 98% of the population; see <http://www.medi norge.uib.no/english/>). The panel members who participate in a study receive small rewards through lotteries and sporadic small surprises of different quality. For panel members, participation in a study is always voluntary and anonymous (complying with Norway's Market Research Association and the European Society for Opinion and Market Research (ESOMAR), the Personal Data Act, and the guidelines of the Norwegian Data Protection Authority).

### Participants

For the current survey, 11,685 panel members were randomly contacted and asked to participate in an online study on sexuality. Of the 11,685 invited individuals, 4,160 men and women participated in the study (response rate = 35.6%), with the majority filling out the questionnaire on a mobile phone (51%). Eligibility for the current study was determined by gender, including only male participants ( $n=2,181$ ). The method and sociodemographic characteristics of the probability sample are presented in other publications from this project (Traeen et al., 2021a, 2021b). The mean age of men was 48.4 years ( $SD$  17.1 years; range, 18–87 years). The majority of the men lived in urban areas (54.1%), while 7.8% were from rural areas. Most participants had a short university education (bachelor's degree; 39.2%), whereas 22.4% reported a long university education (master's degree or higher). Two out of three men reported living with a partner (65.7%), 25.3% reported being unmarried, 7% were separated/divorced, and 2.1% reported being widowed. Most men said that they had no religious affiliation (59.2%), followed by 39.0% who reported being Christians, mainly Protestants or Christians with no particular denomination. The percentages of men who reported they were heterosexual, homosexual, bisexual, asexual, or other were 92.7, 3.9, 2.8, 0.5, and 0.1%, respectively.

### Survey questions

The questionnaire included socio-demographic questions (e.g., gender, age, marital status, place



of residence, level of education), questions adapted from the British NATSAL-3 study (Mercer et al., 2013; Mitchell et al., 2013), and the German GeSid survey (<https://gesid.eu/studie/>). Additionally, questions about sexual behavior used in previous Norwegian and Nordic studies were included (Kvalem et al., 2014; Lewin et al., 2000; Traeen et al., 2015; Træen et al., 2002). The average time to complete the survey was 15 min.

## Measures

*Sexual behavior groups* were based on the reporting of male and female sex partners by constructing two new variables:

1. *Sexual behavior groups during the past 12 months* were constructed from two questions (adapted from the German Sex Survey (2019). [www.gesid.eu](http://www.gesid.eu)): “During the past 12 months, how many men/women have you had vaginal, oral, or anal intercourse with—even if it was only once?” The new variable called “Experience of sex with opposite or same gender in the past 12 months,” led to four groups: men who have sex exclusively with women (MSEW) (1), men who have sex exclusively with men (MSEM) (2), men who have sex with men and women (MSMW) (3), and no sexual interaction (respondents who had never had sexual intercourse or those who reported zero partners during the last 12 months) (0).
2. *Sexual behavior groups during the lifetime* were also constructed from two questions ([www.gesid.eu](http://www.gesid.eu)): “In your lifetime, how many men/women have you had vaginal, oral, or anal intercourse with—even if it was only once?” A new variable “Experience of sex with opposite or same gender in life” was constructed with the categories of *men who have sex exclusively with women* (MSEW) (1), *men who have sex exclusively with men* (MSEM) (2), *men who have sex with men and women* (MSMW) (3), and *no sexual interaction* (respondents who had never had sexual intercourse) (0). Also, from this question, the *number of sexual partners in life* was calculated as the sum of the number of female and male partners in life.

*Sexual identity* was assessed using a one-item indicator (adapted from the German Sex Survey 2019; [www.gesid.eu](http://www.gesid.eu)): “Do you currently regard yourself as:” where the responses provided were 1 = homosexual/lesbian, 2 = heterosexual, 3 = bisexual/pansexual, 4 = asexual, and 5 = other.

*Effects of pornography* were determined by asking the participants (from Rosser et al., 2013): “How has pornography affected the following issues to a good or bad extent?” The participants had to evaluate 11 outcomes on a scale ranging from 1 (very bad) to 5 (very good). The following outcomes were included: “Your interest in having protected intercourse (with a condom)?” “Your interest in having unprotected intercourse (without a condom)?” and “Your understanding of your sexual orientation?”

*Sexual satisfaction* was indicated by the following item: “All things considered, how satisfied are you with your sexual life?” Participants responded using a 5-point scale (with 1 = very dissatisfied and 5 = very satisfied).

*Sexual difficulties* were assessed using a modified version of the British Natsal-3 survey ([https://www.natsal.ac.uk/sites/default/files/2020-11/final-questionnaire\\_technical-report-appendix-b.pdf](https://www.natsal.ac.uk/sites/default/files/2020-11/final-questionnaire_technical-report-appendix-b.pdf)): “In the last year, have you experienced any of the following difficulties for a period of three months or longer?” Seven response options for different sexual difficulties were provided: “lacked interest in having sex,” “lacked enjoyment in sex,” “felt anxious during sex,” “felt no excitement or arousal during sex,” “did not reach climax (experienced an orgasm) or took a long time to reach climax despite feeling excited/aroused,” “reached climax more quickly than I would have liked,” and “had trouble getting or maintaining an erection.” For each difficulty, the response alternatives were “yes” or “no.”

## Statistical analyses

Using SPSS 26.0, bivariate and multivariate logistic regression analyses were performed. We used contingency table analysis and ANOVA to compare the means to study the group differences. Group differences were tested using the chi-square test and t-test. Initially, the analyses were carried out using both unweighted and weighted

**Table 1.** The Proportion of Male Respondents Grouped by the Gender of Sex Partners during the Past 12 Months and in One's Lifetime in 18–89 Year-Old Norwegians 2020.

	Sexual behavior during the past 12 months		Sexual behavior during life	
	<i>n</i>	%	<i>n</i>	%
No sexual interaction	413	22.6	141	8.5
MSEW	1278	70.1	1271	76.6
MSEM	74	4.1	48	2.9
MSMW	59	3.2	200	12.0

MSEW: men who report having sex exclusively with women; MSEM: men who report having sex exclusively with men; MSMW: men who report having sex with men and women.

Note. Sexual behavior includes vaginal, oral, or anal intercourse.

**Table 2.** Current Sexual Identity among Male Participants Belonging to Different Sexual Behavior Groups Based on Experience the Last 12 Months (%).

	No sexual interaction	MSEW	MSEM	MSMW	All	$\chi^2$	<i>p</i> -Value
Heterosexual	88.2	98.3	16.2	75.9	92.0	1139.172	.000
Homosexual	4.3	0.1	75.7	1.7	4.2		
Bisexual or pansexual	4.5	1.5	8.1	22.4	3.1		
Asexual	2.5	0.1	0.0	0.0	0.6		
Other	0.5	0.0	0.0	0.0	0.1		
<i>n</i> =	398	1269	74	58	1401		

MSEW: men who report having sex exclusively with women; MSEM: men who report having sex exclusively with men; MSMW: men who report having sex with men and women.

Note. Sexual behavior includes vaginal, oral or anal intercourse.

data to match the sample with the national population according to age, gender, and region. However, as the estimates did not deviate significantly, we decided to present data analyses based on unweighted data (Table 1).

## Results

The majority of men reported having had sexual interaction exclusively with women (76.6% lifetime, 70.1% in the last 12 months).

During the past 12 months, 22.6% reported no sexual interaction, 4.1% had sexual interaction exclusively with men, and 3.2% with both men and women.

During their lifetime, 2.9% reported having had sexual interaction exclusively with men, and 12.0% with both men and women. The mean age of MSEW was 47.2 years ( $SD = 15.9$ ), MSEM 37.7 years ( $SD = 12.4$ ), MSMW 48.0 years ( $SD = 20.4$ ), and 52.6 years ( $SD = 19.2$ ) for participants with no sexual interaction.

In all analyses presented below, the reporting is based on the sexual behavior groups during the last 12 months. Table 2 shows men's current sexual identity among the different sexual behavior groups. About nine out of 10 participants (92.0%) regarded themselves as heterosexual. Among MSEW, 98.3% identified as heterosexual. Three

out of four (75.7%) MSEM identified as gay, but 16.2% identified as heterosexual. The majority of MSMW identified as heterosexual, 22.4% identified as bisexual or pansexual, and 1.7% as gay.

Among those who had no sexual activity with a partner in the last 12 months, 89.1% ( $n = 405$ ) had sought pornography, compared to 96.5% ( $n = 1273$ ) among MSEW, 98.6% ( $n = 74$ ) among MSEM, and 100.0% ( $n = 59$ ) among MSMW ( $\chi^2 = 40.482$ ;  $p = 0.000$ ). Age of first exposure to pornography also varied among the groups, from 13.1 years ( $SD = 3.3$ ) among MSEM, 14.2 years ( $SD = 4.7$ ) among MSEW, 14.3 years ( $SD = 5.5$ ) among MSMW, and 15.0 years ( $SD = 5.0$ ) among those who had not been sexually active in the past year ( $F = 3.832$ ;  $p = 0.000$ ). These values are not listed in the table.

Table 3 depicts participants' perceived effects of their own pornography use, sexual satisfaction, and the number of sexual partners among MSEW, MSEM, and MSMW in the past 12 months.

Self-perceived effects of pornography use with respect to the frequency of looking for sexual partners were most positive among MSEM and MSMW, and most negative among men with no sexual activity. Self-perceived effects of pornography use with respect to one's interest in having protected intercourse and using a condom were most positive among MSEM. Self-perceived

**Table 3.** Perceived, Effects of Own Pornography Use, Sexual Satisfaction, and Number of Sex Partners during the Past 12 Months in Male Individuals Belonging to Different Sexual Behavioral Groups (Means and Standard Deviation *SD*).

		<i>n</i>	Mean	<i>SD</i>	<i>F</i> -value	Sign
Effects of own porn use: How frequently you are looking for sex partners (1 = Very bad, to 5 = Very good)	No sexual activity	249	1.89	1.06	3.906	.009
	MSEW	1013	1.96	1.09		
	MSEM	63	2.30	1.16		
	MSMW	52	2.29	1.24		
Effects of own porn use: Your interest in having protected intercourse (with a condom) (1 = Very bad, to 5 = Very good)	No sexual activity	249	2.36	1.21	9.177	.000
	MSEW	1000	2.06	1.09		
	MSEM	61	2.64	1.28		
	MSMW	49	2.20	.96		
Effects of own porn use: Your interest in having unprotected intercourse (without a condom) (1 = Very bad, to 5 = Very good)	No sexual activity	256	2.25	1.14	4.036	.007
	MSEW	1014	2.22	1.14		
	MSEM	64	2.47	1.25		
	MSMW	50	2.74	1.19		
Effects of own porn use: Your understanding of your sexual orientation (1 = Very bad, to 5 = Very good)	No sexual activity	271	2.84	1.31	7.800	.000
	MSEW	1039	2.73	1.29		
	MSEM	65	3.34	1.37		
	MSMW	51	3.33	1.28		
All things considered—how satisfied are you with your sexual life (1 = Very dissatisfied, to 5 = Very satisfied)	No sexual activity	393	2.49	1.17	70.566	.000
	MSEW	1275	3.45	1.15		
	MSEM	74	3.32	1.09		
	MSMW	59	3.42	1.18		
Number of sex partners last 12 months	No sexual activity	272	0.0	0.0	212.688	.000
	MSEW (range = 1–100)	1278	1.76	3.96		
	MSEM (range = 1–99)	74	11.27	24.65		
	MSMW (range = 2–198)	59	36.49	48.18		

MSEW: men who report having sex exclusively with women; MSEM: men who report having sex exclusively with men; MSMW: men who report having sex with men and women.

Note. Sexual behavior includes vaginal, oral or anal intercourse.

effects of pornography use with respect to one's interest in having unprotected intercourse and not using a condom were most positive among MSMW. Self-perceived effects of pornography use with respect to understanding one's own sexual orientation were most positive among MSEM and MSMW.

The MSEW and MSMW reported being most satisfied with their sex life, and men with no sexual activity were least satisfied. The highest mean number of sexual partners in the past year were reported by MSMW (36.5 partners, median 6, range 2–198), followed by MSEM (11.3 partners, median 2, range 1–99), and MSEW (1.8 partners, median 1, range 1–100).

The bivariate contingency tables indicate that in the three sexual behavior groups there were statistically significant differences in the reporting of feeling anxious during sex, feeling no excitement or arousal during sex, and reaching climax more quickly than desired. More MSMW (8.5%) and MSEM (8.1%) reported feeling anxious during sex than MSEW (3.5%). More MSEM (16.2%) reported arousal problems than MSEW (8.5%), and more MSEW (20.9%) reported reaching climax too quickly than MSEM (6.8%) and MSMW (5.1%) (Table 4).

In the multivariate logistic regression analysis, the variable age (in one year's increase) was included to control for inequality in the age composition of the sexual behavioral groups. Age was a significant predictor of all sexual problems, except for not reaching climax. Except for erection difficulties, all listed sexual problems decreased with increasing age. Compared to MSEW, the likelihood of failing to reach orgasm was 1.85 times higher in MSMW. Compared to MSEW, MSEM had a 79% lower likelihood of premature ejaculation, and MSMW had an 81% lower likelihood of premature ejaculation.

Table 5 depicts the proportion of men who used condoms during their first sexual intercourse with their most recent sexual partner. The most frequent condom users in the potentially risky context of having sex with a new partner were MSEM (45.9%), followed by MSEW (34.2%) and MSMW (23.7%).

## Discussion

Summing up the results from this study, it is noteworthy that a significant proportion of the participants did not have any sexual interaction in the previous year. Most participants were

**Table 4.** Prevalence of Sexual Problems among Male Participants Belonging to Different Sexual Behavior Groups Based on Experience the Last 12 Months (%).

		%	$\chi^2$	<i>p</i> -Value	Adjusted Odds Ratio
Lacked interest in having sex	MSEW	19.6	5.373	0.068	1.00
	MSEM	29.7			1.56 <sup>ns</sup>
	MSMW	15.3			0.74 <sup>ns</sup>
	Age				0.42 <sup>ns</sup>
Lacked enjoyment in sex	MSEW	8.2	3.641	0.162	1.00
	MSEM	9.5			0.82 <sup>ns</sup>
	MSMW	15.3			1.92 <sup>ns</sup>
	Age				0.95 <sup>ns</sup>
Felt anxious during sex	MSEW	3.5	7.142	0.028	1.00
	MSEM	8.1			1.74 <sup>ns</sup>
	MSMW	8.5			2.36 <sup>ns</sup>
	Age				0.95 <sup>ns</sup>
Felt no excitement or arousal during sex	MSEW	8.5	6.422	0.040	1.00
	MSEM	16.2			1.61 <sup>ns</sup>
	MSMW	13.6			1.65 <sup>ns</sup>
	Age				0.97 <sup>ns</sup>
Did not reach a climax/took a long time to reach a climax despite feeling excited/aroused	MSEW	19.2	4.519	0.104	1.00
	MSEM	20.3			1.01 <sup>ns</sup>
	MSMW	30.5			1.85 <sup>*</sup>
	Age				0.99 <sup>ns</sup>
Reached a climax (experienced an orgasm) more quickly than you would like	MSEW	20.9	17.050	0.000	1.00
	MSEM	6.8			0.21 <sup>***</sup>
	MSMW	5.1			0.19 <sup>**</sup>
	Age				0.97 <sup>**</sup>
Had trouble getting or keeping an erection	MSEW	20.0	1.523	0.467	1.00
	MSEM	25.7			1.65 <sup>ns</sup>
	MSMW	22.0			1.11 <sup>ns</sup>
	Age				1.02 <sup>ns</sup>

MSEW: men who report having sex exclusively with women ( $n = 1278$ ); MSEM: men who report having sex exclusively with men ( $n = 74$ ); MSMW: men who report having sex with men and women ( $n = 59$ ).

Note. <sup>ns</sup>not statistically significant; \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

**Table 5.** Prevalence of Men Who Used Condoms the First Time They Had Sex With Their Most Recent Partner, by Belonging to Different Sexual Behavior Groups Based on Experience the Past 12 Months (%).

Percent that did use condoms during ...	MSEW	MSEM	MSMW	$\chi^2$	<i>p</i> -Value
The first intercourse with the most recent sex partner	34.2	45.9	23.7	7.375	0.025
<i>N</i>	1278	74	59		

MSEW: men who report having sex exclusively with women; MSEM: men who report having sex exclusively with men; MSMW: men who report having sex with men and women.

classified as MSEW. Of these, 98.3% self-identified as heterosexual. The MSEW reported being the most satisfied with their sex life and had the lowest number of sex partners (1.8). About 4% of the participants were classified as MSEM, and three out of four MSEM regarded their sexual identity as gay. Men in this group assessed that their use of pornography had a positive effect on how often they were looking for sexual partners, as well as understanding their own sexual orientation. MSEM were also most positive when it came to stating that their pornography use had increased their interest in having protected intercourse with a condom, and were the most frequent group of condom users compared to the other groups. The MSEM had a 79% lower

likelihood of premature ejaculation than MSEW. Approximately 3% of the men in the sample were classified as MSMW. Based on the lifetime experience of male and female sexual partners, as many as 12% of the men reported having had sexual intercourse with both men and women. The majority of them considered themselves as heterosexual, and a little less than one out of four identified as bisexual or pansexual. Similar to MSEM, MSMW assessed that their use of pornography had a positive effect on the frequency of looking for sex partners and the understanding of their own sexual orientation, and was most positive toward watching pornography depicting unprotected intercourse. The MSMW had an 81% lower likelihood of premature ejaculation than



MSEW, were the least frequent condom users, and had the highest number of sex partners in the past year (36.5), of the three groups compared.

Given the small number of men who were classified as MSMW and MSEM, it is difficult to estimate the exact percentages of the population belonging to these categories. However, the low number was similar to the findings of the British NATSAL-3 study (Geary et al., 2018), in which 2.6% of adult men reported same-sex genital contact, and of these 52.2% identified as gay (Mercer et al., 2016).

A previous Norwegian study showed that in men who identified as heterosexual, frequent use of pornography was correlated with a higher number of both male and female sex partners, having oral sex and anal sex, and sexual satisfaction (Traeen & Daneback, 2013). The findings of the present study also make it clear that some men, while identifying as heterosexuals, have sex with other men, even those who have exclusively sex with men. Mercer et al. (2013) found that the acceptance of same-sex partnerships has increased in British men and women. Despite this increased acceptance, many British men who have sex with men also state their sexual identity as heterosexual.

It is also interesting to note that it is more common to have sex with both men and women than to have sex exclusively with persons of the same gender. In the MSMW group, almost three out of four identified as heterosexual, and one out of four as bisexual or pansexual. It would be natural to assume that these men are bisexuals, but they do not identify themselves with this identity. Likewise, among MSEM, approximately three out of four perceived themselves as homosexual, but 16% reported that they identified as heterosexual. This could indicate a denial of a bisexual or gay interest (Maimon, 2021), but it also indicates which partners are actually available to have sex with or even play sexual betting games (Bush et al., 2021). Either way, these sexual minority groups may be difficult to reach in sexual health interventions if targeted by sexual identity.

The highest number of sexual partners in the past year were reported by MSMW, followed by MSEM. This corresponds well with previous

studies (Dyer et al., 2017; Mercer et al., 2016; Traeen et al., 2002; Zule et al., 2009), and may reflect a pattern of elevated sexual activity and variety among sexual minority groups. This corresponds to the finding that MSMW most actively used pornography in the last 12 months and MSEM reported the earliest age of first exposure to pornography. The results from this study further indicate that for male sexual minorities, pornography may play an important and positive role in understanding one's sexual orientation, particularly for learning who and what arouses them, and how to act within appropriate same gender scripts (Stulhofer et al., 2010). However, for these groups, pornography also played a role in sexual risk behavior, such as the higher frequency of looking for sexual partners, as indicated by the number of sexual partners.

Pornography may also play a role in another sexual risk behavior, namely, one's interest in having unprotected intercourse and not using a condom, particularly for MSMW. However, at the same time, the self-perceived effects of pornography use on interest in having protected intercourse and using a condom were most positive among MSEM, followed by MSMW. According to Rosser et al. (2013), gay pornography produced for the US audience until the 1990s always portrayed the use of condoms, but there has been a shift to barebacking since the mid-90s and the introduction of HIV medication. It is likely that men who have sex with men are well aware of being a risk group for STIs, and gay pornography may have contributed to normalizing condom use in the group. This is most likely reflected in the condom use data in the present study. We found that MSEM were the most frequent condom users during a potentially risky situation, having sex with a new partner (46%), and on the most recent occasion of sexual intercourse. This indicates that the sexual health message to use condoms during sex with men has come through in this group, although there is a clear room for increased use. During the most recent sexual intercourse, one out of four MSEM used condoms. The lower percentages compared to the first intercourse with the same partner are not surprising, as the partner is more familiar by this point. The low condom use among MSMW

stands in contrast. It is difficult to understand why this is the case, but it can be speculated that it may be related to the large proportion of this group identifying as heterosexuals. Consequently, they may not see themselves as the target for health preventive messages related to condom use directed toward gay men.

A European study among MSM in 38 countries showed that over a third of the respondents indicated that they were not happy with their sex life (The EMIS Network, 2013). In this study, MSEW were more sexually satisfied than MSEM and MSMW. This coincides with the findings of Björkenstam et al. (2020) in Sweden. This could be due to minority stress and internalized homonegativity and concealment of sexual identity (Meyer, 1995, 2003). Feelings associated with internalized homonegativity and concealment of sexual identity are likely to produce feelings of insecurity, guilt, and shame, which may inhibit sexual satisfaction. The degree to which minority stress may affect mental and sexual health also depends on sexual identity centrality (Dyar et al., 2014), that is how central one's sexual identity is to one's overall sense of self. Men who have a high sexual identity centrality may cause minority stress to be perceived as more threatening to a more central aspect of one's identity and will in turn be associated with more psychological distress which reduces sexual satisfaction (Dyar et al., 2014). Reduced sexual satisfaction may also be the result of sexual difficulties, or it may cause sexual difficulties.

The finding that premature ejaculation is a more prevalent phenomenon in MSEW than in the other groups supports previous research (Bancroft et al., 2005; Björkenstam et al., 2020; Frederick et al., 2018). This can be an indication that these men feel anxious about performing to perfection in a meeting with a female partner (Bancroft et al., 2005). Among MSEM, about one in three reported a lack of sexual interest. Among MSMW, three out of ten reported delayed ejaculation. These percentages correspond to the findings of Björkenstam et al. and Frederick et al. (2018), where gay men were at a higher risk of lacking sexual arousal and orgasm than heterosexual men. There were no statistically significant differences between the groups of men reporting

problems in getting or keeping an erection. This supports findings from Sweden and the US, where no significant difference in erectile difficulties between gay and heterosexual men was found (Björkenstam et al., 2020; Flynn et al., 2017). However, we found that one out of four MSEM, and about one out of five MSEW, reported trouble getting or keeping an erection. This is somewhat surprising, particularly as the mean age of MSEM was ten years younger than that of MSEW. Like sexual satisfaction, it could be argued that this may be related to minority stress (Meyer, 1995, 2003) and accompanying feelings of shame and guilt. Alternatively, MSEM may also be caught up in a myth about gay men being always ready for sex, a myth that distorts reality for many MSEM and produces performance anxiety.

### **Limitations**

Some limitations of this study need to be addressed. First, since the 1990s, a drop in the response rate in questionnaire surveys on topics other than sexuality seems to be a trend (Hellevik, 1999). However, a low response rate does not necessarily imply a selection bias (Søgaard et al., 2004). Stigum (1997) concluded that respondents and non-respondents in the 1992 Norwegian sexual behavior study did not differ in their patterns of sexual behavior. Other Nordic surveys also suggest that non-response is fairly random with respect to sexual behavior (Haavio-Mannila & Kontula, 2003; Kontula & Haavio-Mannila, 1995; Lewin et al., 2000).

As the response rate for previous sexual behavior studies in Norway dropped from 63% in 1987 to 23% in 2008, self-administered postal questionnaires may be outdated as a mode of data collection. In the past decade, data collection via the Internet has become increasingly common. In this context, random samples drawn from web panels represent an alternative (Danielsson, 2002). It is probably less of a challenge for researchers to select samples that mirror the population, or sub-groups of the population, with a higher proportion of the population who have access to the Internet. Bearing in mind that 98% of the Norwegian population has Internet access,

using web panels to study sexuality seems to be a fruitful mode of data collection. Sixty-two percent of the men in this sample had higher education (Bachelor's degree or higher). By comparison, the official statistics in 2020 (Statistics Norway) show that about 35.3% of men in the Norwegian population aged 16 years or older have a high level of education (Educational attainment of the population (ssb.no)). This means that the current sample could be slightly biased.

There are strengths and weaknesses of the method for calculating the prevalence of each group. The strength is that it reveals that sexual orientation is not equivalent to sexual behavior which has implications for health prevention. The weakness, on the other hand, is that  $N$  is very low and thereby more exposed to bias. The relatively few numbers of MSEM ( $n=74$ ) and MSMW ( $n=59$ ) participants had an impact on the statistical power of the study and may affect the generalizability of the findings. Furthermore, the mean age of the MSEM was significantly lower than the mean age of the MSEW and MSMW. Thus, our results should be interpreted carefully and considered for possible biases. Sometimes, MSEM and MSMW are combined into one sexual minority group and, as such, compared to the sexual majority group (MSEW). Although this increases statistical power, it also results in a loss of information about the differences between MSEM and MSMW, and how each sexual minority group differs from MSEW. Further limitations concern the measurement of sexual satisfaction. Sexual satisfaction was measured using a single-item indicator, without defining the term to the participants. As sexual satisfaction is a broad concept that might be interpreted differently, it would be important to define the construct using input from the target population and to use a multi-item measure. Finally, the cross-sectional nature of this study did not allow for any conclusions about cause and effect.

## Conclusions

An implication of the results from this study is that minority stress should be addressed at the public health level. According to Meyer (1995,

2003), minority stress is linked to poor mental health, and internalized homonegativity and concealment of sexual identity are two areas that play an important role in negative mental health. To improve mental health in sexual minority groups, the society should actively make efforts toward reducing homonegativity and the need to conceal one's sexual identity. Furthermore, MSEM and MSMW are the groups of the population with sexual behaviors that involve a potential risk of STI transmission. However, MSEW also exposes themselves to sexual risk behavior. Research in the past decade has gained more insight into how to encourage MSM to use condoms and thereby take STI prevention to the next level. To encourage safe sex, pornography depicting safe sex rather than unprotected sex should be developed, as it can be used to reinforce safe sex and condom use.

It has been suggested that a focus on pleasure and sexual health may be important when working with vulnerable populations, such as sexual minorities and individuals who have experienced trauma (Fava & Fortenberry, 2021; Hogben et al., 2015). Fava & Fortenberry (2021) describe a trauma-informed sex-positive approach to sexual pleasure as a significant component of clinical care, in public health practice, and in research related to sexual experiences. They address sexual pleasure as an element of sexual experience related to sexual wellbeing and sexual health, linked to sexual justice in a framework of trauma-informed sex-positivity. Furthermore, Hogben et al. (2015) found that the most consistently positive effects on behaviors and adverse events were found for sexual minorities, vulnerable populations, and parental communication. Whether via direct action or through partnerships, incorporating principles from existing sexual health definitions in public health efforts may help improve sexual health (Hogben et al., 2015).

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