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Is anyone around me using condoms? Site-specific condom-use norms and their potential impact on condomless sex across various gay venues and websites in the Netherlands

Wijnand van den Boom¹, Ineke G Stolte¹, Astrid Roggen², Theo Sandfort³, Maria Prins^{1,4}, and Udi Davidovich¹

¹Public Health Service Amsterdam, Cluster Infectious Diseases, Department of Research, Amsterdam, Netherlands ²Schorer, Netherlands Institute for Homosexuality, Health and Well-being, Amsterdam, the Netherlands ³HIV Center for Clinical and Behavioral Studies, Department of Psychiatry, Columbia University and New York State Psychiatric Institute, New York, NY, USA ⁴Department of Infectious Diseases, Tropical Medicine and AIDS, CINIMA, Academic Medical Center, Amsterdam, The Netherlands

Abstract

Objective—To investigate site-specific condom-use norms as assumed by visitors of gay venues and websites across the Netherlands and their association with men’s own use of condoms.

Methods—In 2010, men who have sex with men (MSM) visiting 18 sex venues (e.g., saunas), 30 non-sex venues (e.g., bars), 6 dating websites, and 2 social network websites completed an on-site questionnaire measuring two site-specific norms concerning anal sex: descriptive (assumed condom use of others at venue or website) and injunctive (assumed approval of condom use by others at venue or website). We measured the association between assumed descriptive norms and own use of condoms using logistic regression.

Results—Among 2376 participants (median age=30 years; IQR=22–43), 62% (n=1483) assumed that other visitors would not use condoms. Among men self-reporting on their own use of condoms, 22% (318/1421) reported condomless anal sex. Men at non-sex venues assumed other visitors would use condoms more often and approved of using them more often compared to men at sex venues. At all sites (venues/websites), men who assumed that others did not use condoms were more likely to have condomless sex themselves.

Conclusions—At gay sites across the Netherlands, more than half of MSM believed visitors of these sites would not use condoms during anal sex. The perception that others would not use

Correspondence: Wijnand van den Boom, Public Health Service Amsterdam, Cluster of Infectious Diseases, Nieuwe Achtergracht 100, 1018 WT Amsterdam, The Netherlands, wijnandvandenboom@gmail.com, Tel: +31614321230.

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Author contributions

Wijnand Van den Boom analyzed and interpreted the data, and wrote the draft manuscript. Astrid Roggen, Theo Sandfort, and Maria Prins gave substantial contribution to the analyses and interpretation of the data. Ineke Stolte and Udi Davidovich designed and supervised the overall study, and contributed to the analyses and interpretation of the data. All authors contributed to subsequent drafts and approved the final version of the manuscript.

condoms was associated with less own condom use. HIV prevention should address problematic on-site condom-use norms, as they play a role in influencing sexual behavior between men that meet at these sites.

Keywords

condom-use norms; venues; condom use; MSM; condomless anal sex

Introduction

“When in Rome, do as the Romans do”, is the old saying. Indeed, the places we visit can shape the way we think and behave. The same can apply to the sexual behavior of men who have sex with men (MSM): venues that MSM visit might influence the way they think and behave sexually. This study was designed to investigate site-specific condom-use norms that Dutch MSM believed to be prevalent at certain gay venues and gay websites. Site-specific norms can be formed in two ways. First, people observe behavior around them in a particular context and see others’ behavior as a source of information to help them define social reality and use this information as guidance for their own behavior (Cialdini et al., 2006; Ravis & Sheeran, 2003). This type of norm is commonly known as a “descriptive norm” and refers to what people believe others around them commonly do in certain social interactions or situations (Cialdini, Reno, & Kallgren, 1990). Second, people behave in ways they believe will be approved by others or avoid behaving in a way that is disapproved by others. The belief whether a behavior will or will not be approved by others is known as an “injunctive norm” (Cialdini et al., 1990).

Norms are known to influence sexual behavior in general and among MSM in particular. Men who assume that others use condoms (descriptive norms) or approve of using them (injunctive norms) will be more likely to use condoms themselves than those who assume that others engage in condomless sex or disapprove of condom use (McKechnie, Bavinton, & Zablotska, 2013; Peterson & Bakeman, 2006). Norms can be context-dependent and as such are likely to constitute an important factor in influencing site-specific sexual behavior among MSM (Elwood, Greene, & Carter, 2003; Haubrich, Myers, Calzavara, Ryder, & Medved, 2004; Reidy et al., 2009). In bathhouses, for example, MSM who believe that other visitors do not desire discussions about safe sex (“silence norm”) feel reluctant to initiate such communication (Elwood et al., 2003; Haubrich et al., 2004). In this study, we investigated the site-specific condom-use norms among MSM in the Netherlands and whether such norms are associated with own condom use.

Both site-specific descriptive norms (“what others do”) and injunctive norms (“what others approve/disapprove of”) regarding the use of condoms were investigated in more than 50 gay sex venues (e.g., saunas), non-sex venues (e.g., bars), dating websites, and social network (non-sex) websites in the Netherlands. We examined site-specific norms for two types of visitors: visitors unknown to the participant and a visitor who is significant to the participant, such as a good friend. A significant other is someone whose opinion is important to the participant and as such can influence his behavior, as suggested in the theory of planned behavior (Ajzen, 1991). Furthermore, we explored whether type of site was

associated with condom-use norms and whether these norms were associated with the participant's self-reported condom use with men whom they met at these sites. Findings of the present study are important for developing more effective strategies to influence sexual risk behavior among MSM in the Netherlands and elsewhere.

Methods

Recruitment, questionnaire, and sample

Recruitment took place both offline and online. Regarding offline sites, five paid and trained interviewers visited 48 gay venues across the Netherlands. By methods of convenience sampling, the interviewers approached visitors to request their participation in the study. In order to capture site-specific condom-use norms, men were asked to complete an anonymous questionnaire regarding the venue and its visitors. Participants filled in questionnaires while present at the venue, in a private location inside the venue. Participants were given computer notebooks with internet connection to access an online questionnaire. If no internet connection was available, men used a written questionnaire. As a token of gratitude, participants received a small gift valued at 5 Euro. Regarding online sites, visitors to Dutch gay websites were recruited over a 3-month period by banners that invited them to enroll in the study. Once men had clicked on a banner, they were directed to an online questionnaire. Participants in the online survey were not given an incentive.

Both offline and online, we used a 19-item questionnaire measuring demographics, descriptive and injunctive condom-use norms, and participants' own behavior, the latter being optional. Two versions of the questionnaire were constructed: one for offline sex venues to measure sex on-premises (e.g., darkrooms) and one for offline non-sex venues (e.g., clubs), dating websites (primarily for the finding of sex partners), and social network websites, in order to measure sex with partners met through these channels. All questionnaires were in Dutch.

After recruitment of 2512 participants, we excluded 86 (3%) with incomplete questionnaires and 50 (2%) who reported having had sex with women only, resulting in a total sample size of 2376 participants who filled out questions regarding other visitors. Sample sizes differed for MSM who had filled out questions regarding a good friend (if applicable) ($n=1975$), their own behavior (which was optional) ($n=1421$), or both ($n=1262$).

Variables

General characteristics—We assessed participants' age (categorized into 22y, 23-29y, 30-42y, 43y; based on quartiles), nationality (Dutch versus non-Dutch background), education level, and sexual orientation. Education level was considered "high" with completion of higher vocational education or university and "middle and low" with completion of secondary vocational education, high school, basic vocational education, or primary school. Sexual orientation was measured using a 7-point Kinsey scale, ranging from (0) exclusively heterosexual to (6) exclusively homosexual. Participants' frequency of visiting a particular site in the preceding 6 months had the following three categorizations:

(1) “at least once every 2 weeks,” (2) “once a month or less than once a month,” and (3) “more than 6 months ago, or never before”.

Type of site—Sites were categorized into five types: (1) sex venues, (2) bars/clubs, (3) social and sports gathering venues, (4) dating websites, (5) and social network websites. The sex venue category included gay sex establishments and environments where men could have sex on the premises, such as darkrooms, bathhouses, saunas, and cruising areas. The bars/clubs category included gay bars and dance clubs that exclude sex on the premises. The social and sports gathering venues included organizations such as youth gatherings and fitness clubs, which likewise exclude on-premise sex. The dating websites category included sites that men visit to chat with the intent of finding potential sex partners, the social network websites category included sites that men visit to chat with other men socially, to network through friends, and to find information regarding safe sex and gay-related themes.

Descriptive condom-use norm (regarding other visitors)—For sex venues, the descriptive norm was operationalized as the perception of how frequently visitors at a specific venue engage condomless anal sex on-premise. For the other types of sites, the norm was operationalized as the perception of how frequently visitors engage in condomless anal sex with men they meet through one of these sites. A 5-point scale was used: always, mostly, sometimes, mostly not, never. To facilitate interpretation, the negatively-keyed items were reverse-scored. A total of 2376 participants reported on descriptive norms.

Injunctive condom-use norm (other visitors)—The injunctive norm was measured by asking participants how they believed that other visitors at a venue would react to engaging in condomless anal sex. A 5-point scale ranging from (1) “approving” to (5) “disapproving” was used. To facilitate interpretation, the negatively-keyed items were reverse-scored. A total of 2376 participants reported on injunctive norms.

Condom-use norm (good friend)—Participants were asked whether they had a good friend who also visited the particular site (yes/no). If yes, men were asked to answer two similar questions for site-specific norms as they had regarding other visitors, this time with their good friend in mind. A total of 1975 reported on norms regarding their good friend.

Participants’ own condom use—Participants who filled out the questionnaire at a sex venue were asked optional questions as to whether they had had anal sex themselves in the preceding six months on-premise (yes/no) and whether they had used condoms during those incidences (yes/no). Likewise, participants at non-sex venues and websites were asked if they had had sex with men they met via these routes (yes/no) and whether they had used condoms during anal sex with them (yes/no). Questions regarding participants’ own behavior were optional and were answered by 1421 participants (see Table 2).

Statistical analyses

We described the demographics and frequency of site visits across all 5 types of sites. To test for differences among them, Chi-Square tests were used for categorical variables and non-parametric Kruskal-Wallis tests for continuous variables.

The descriptive norm variable was dichotomized as follows: The responses “never”, “mostly not” and “sometimes” were categorized as having condomless anal sex, whereas “mostly” and “always” were categorized as using condoms. The injunctive norm variable was dichotomized as follows: The responses “3” and higher were categorized as disapproval of condom use, whereas the responses “1” and “2” were categorized as approval of condom use.

Univariate and multivariate logistic regression analyses were conducted to investigate the association between type of site and norms. For the type of site variable, sex venue was chosen as the reference category. Based on a previous study (Groß, 2012), the multivariate model included variables that were considered potential confounders for the association between type of site and norms: age, education level, nationality, and sexual orientation.

For MSM who reported both the assumed behavior and their own actual behavior ($n=1262$), we compared the scores on the norms variables using McNemar tests. Furthermore, univariate and multivariate logistic regression analyses were conducted to investigate the association between norms and one’s own condom use. All norm variables were entered as continuous into the model. For these analyses, two multivariate models were constructed. Model 1 examined the associations between norms regarding other visitors and one’s own condom use. Model 2 examined the associations between norms regarding the good friend and own condom use, controlling for norms regarding other visitors. Both models were adjusted for variables that were considered potential confounders for the association between norms and own condom use (i.e., age, education level, nationality, sexual orientation) as suggested in the literature (e.g., (Ghaziani & Cook, 2005)).

For all analyses, we checked for interactions between the main variables of interest and the other variables in the final multivariate models. Prior to the logistic regression analyses, collinearity among all variables was checked by computing variance inflating factor (VIF) for each determinant and by computing correlations between the determinants. VIF values above 10 and correlations above 0.70 were regarded as an indication of collinearity.

For all analyses, a $p < 0.05$ was considered statistically significant. Analyses were performed with the SPSS 19 statistical package (SPSS Inc., Chicago, IL, USA).

Results

Enrollment

A total of 2376 participants enrolled in the study at 56 sites: 376 participants at 18 sex venues, 537 participants at 21 bars/clubs, 113 participants at 9 social/sports gathering venues, 495 participants at 6 dating websites and 855 participants at 2 social network websites.

Sample characteristics

The median age of the participants was 30 years (IQR = 22-43), 56% were highly educated, and 82% were of Dutch background (Table 1). Overall, sample characteristics differed among types of sites. At offline sex venues, participants were on average older, and a higher

proportion was non-Dutch. At all 3 types of offline sites, participants were more likely to be highly educated than at websites. Websites were most frequently visited, social/sports gatherings the least (Table 1).

Norms and self-reported behavior per site

At the 18 offline sex venues, 64% (242/376) and 24% (69/283) of participants assumed that other visitors and their good friend would have condomless sex, respectively. Only 19% (60/324) reported that they themselves had not used condoms. For norms and participants' own behavior at the other types of sites, see Table 2.

The association between type of site and norms (other visitors)

Among 2367 MSM, univariate analyses revealed that type of site and younger age were significantly associated with condom-use norms. Multivariate analyses showed that compared to men at sex venues, men at social/sports gathering venues assumed it more likely that other visitors would use condoms when engaging in anal sex (Table 3). Multivariate analyses likewise showed that, compared to men at sex venues, men at bars/clubs and social/sports gatherings assumed it more likely that other visitors would approve of condom use.

Descriptive norms per referent type and self-reported behavior

Among MSM who reported on *both* referent types and their own behavior ($n = 1262$), a high proportion assumed that other visitors would have condomless anal sex across all site types aggregated (67%; 839/1262); with regard to their good friend this was significantly lower (31%; 391/1262), $p < 0.001$. The proportion of participants who reported that they themselves had not used condoms was 24% (298/1262).

The association between norms and self-reported behavior

Univariate analyses revealed that if participants assumed that other visitors would not use condoms they were more likely to engage in condomless anal sex themselves (Table 4). VIF scores (< 10) and correlations (ranging from 0.27 to 0.64) did not reveal any collinearity among the 4 norm variables. Investigating the association between norms regarding other visitors and participant's own condom use revealed that men who assumed that other visitors would not use condoms and would disapprove of it, were more likely to engage in condomless anal sex themselves (Table 4). Likewise, investigating the association between norms regarding the good friend and participant's own behavior revealed that men who assumed that their good friend would not use condoms and would disapprove of it, were more likely to engage in condomless anal sex themselves. In model 2, the effects of norms regarding other visitors were retained.

Discussion

The present study investigated site-specific descriptive and injunctive norms regarding condom use among MSM visiting sex and non-sex sites, offline and online, across the Netherlands. We found that more than half of our participants assumed that other men on site would engage in condomless anal sex and that almost half of participants assumed that

other MSM would disapprove of condom use. However, these proportions were significantly lower regarding their perceptions of a good friend's condom use. These findings corroborate previous research suggesting that discrepancies between assumed behavior of others increases with the increase of social distance from the norm referent (Borsari & Carey, 2003).

As far as self-report of condom use is concerned, our data have shown that among the subsample who reported on own condom use, 67% believed that others would not use condoms during anal sex, but only 24% of the participants reported not using condoms themselves. Questions arise regarding the potential underlying causes for such a discrepancy. It is possible that risk-takers systematically avoided our study or did not fill in this part of our questionnaire. However, it could also be that this discrepancy reflects a general inclination among our participants to overestimate the actual non-condom use of others. The term "pluralistic ignorance" has been coined for such situations (Katz, Allport, & Jenness, 1931; Prentice & Miller, 1996), in which a majority privately disagrees with a norm that they incorrectly assume to be approved by most others. If this is true, then our participants might unjustifiably perceive themselves as 'a minority' that is willing to use condoms. Such misperceptions need to be corrected in the future since our findings have pointed to a significant association between negative norms and self-reported condomless anal sex, even when the latter was not frequent in our sample. We are further concerned that if these norms regarding condom use in the context of casual sex remain problematic, condomless anal sex might further increase in the future.

As for the differences in descriptive and injunctive norms among types of sites, our findings revealed that men at social/sports gatherings assumed it more likely that others would use condoms compared to men at the other types of sites. This is not surprising, as such gatherings are aimed more at social than sexual interaction, and visitors do not necessarily have the intent of finding potential sex partners there. As for the associations between norms and condom use, our findings support previous studies that investigated comparable types of norms (Berg & Grimes, 2011; Franssens, Hospers, & Kok, 2009; Hamilton & Mahalik, 2009; Peterson & Bakeman, 2006).

An interesting question raised by our findings is the relative effect of norms versus the type of site on condom use. To gain more insight into this question we conducted an additional analysis including both type of site and norms in a final multivariate model predicting condom use. We found that type of site was not associated with condom use but that all norm effects on condom use were retained (data not shown). This suggests that behavior was less influenced by a particular type of site but rather by what men assumed regarding the behavior of others at that site. Apparently, a place is perceived to be 'risky' through associated norms rather than its actual function as, for example, a sex venue, bar/club, or website. However, it is also conceivable that sites may facilitate the formation of such norms. Previous research suggested that condom-use norms that characterize certain venues are created by individuals, and such individuals are influenced by the functionality of the venue, and that both may synergistically influence sexual behavior on-premise (Groves, 2012; Groves, Hirshfield, Remien, Humberstone, & Chiasson, 2013). We recommend that such reciprocity be further studied and understood in the future.

Some limitations of our study should be mentioned. First, our convenience samples within each venue and website only represent those visitors who participated. As a consequence, generalization of our results to a larger population of MSM at the various venues and websites across the Netherlands must be made cautiously. Second, we were not able to correct for possible multiple submissions. However, we assume that multiple submissions are rare in our study. Our offline data collection spanned over a short period of time covering large and separated geographical regions. It is therefore unlikely that a significant amount of our participants could have been present in different regions in the Netherlands and participated more than once. For the online part of the study we offered no incentive for participation and thus individuals were probably not motivated to complete our questionnaires more than once. Therefore, we believe multiple responses in the online survey were also rare. We are not able to correct for hypothetical cases of multiple responses of those participating in both online and offline surveys. Third, another limitation is the fact that reporting on own condom use behavior was optional. Only 60% of the participants were willing to answer these optional items and their reported condom use might differ from that of the non-responders. Nonetheless, proportions of self-reported condom use from the present study closely resembled findings of previous monitoring studies (e.g., (van Empelen, van Berkel, Roos, & Zuilhof, 2010)) and the Amsterdam Cohort Studies (Jansen et al., 2011) regarding condom use during casual sex in the Netherlands. Finally, at the time of data collection, pre-exposure prophylaxis (PrEP) for HIV (Grant et al., 2010) was not attainable in the Netherlands and its efficacy was not yet endorsed by the Dutch public health authority. True to 2015, PrEP is not yet locally available outside trial structures. Once it becomes structurally available, its use could lead to decreasing condom use and could affect men's ideas about the risks of acquiring HIV which will further shape the norms and expectations around condomless sex.

In summary, the findings from the present study highlight the problematic site-specific norms regarding the use and approval of condoms by visitors of gay venues and websites in the Netherlands. MSM assumed that other visitors of these sites would not use condoms and would disapprove of them. However, participants themselves reported high levels of condom use suggesting that they might consider themselves to be in a minority in wanting to use condoms. Above all, if non-condom use was reported, it was associated with descriptive norm assumptions that others would engage in condomless sex. These norms, therefore, are problematic and HIV prevention should invest efforts in dealing with and correcting such descriptive norms, especially if they might reflect an overestimation of actual non-condom use. HIV prevention would do well to help MSM realize they are apparently not alone in using or wanting to use condoms in the context of casual sex across the Netherlands.

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Demographic characteristics and frequency of visits among 2376 MSM at the five types of gay venues and websites across the Netherlands.

Table 1

	Overall	Sex venues	Bars/clubs	Social/sports gatherings	Dating websites	Social network websites	p
	N=2376	N=376	N=537	N=113	N=495	N=855	
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	
Age; Median [IQR]	30 [22-43]	44 [36-51]	27 [23-37]	41 [29.5-48.5]	41 [27-51]	23 [20-30]	<0.001
43	493 (20.7)	166 (44.1)	57 (10.6)	37 (32.7)	189 (38.2)	44 (5.1)	<0.001
30-42	479 (20.2)	129 (34.3)	103 (19.2)	36 (31.9)	120 (24.2)	91 (10.6)	
23-29	587 (24.7)	66 (17.6)	168 (31.3)	23 (20.4)	95 (19.2)	235 (27.5)	
22	485 (34.4)	15 (4.0)	209 (38.9)	17 (15.0)	91 (18.4)	485 (56.7)	
Educational level							
Low & middle	1031 (44.4)	142 (38.9)	191 (35.8)	31 (28.2)	227 (47.9)	440 (52.6)	<0.001
High	1289 (55.6)	223 (61.1)	343 (64.2)	79 (71.8)	247 (52.1)	397 (47.4)	
Nationality							
Dutch	1943 (81.8)	274 (72.9)	442 (82.3)	91 (80.5)	411 (83.0)	725 (84.8)	<0.001
Non-Dutch	433 (18.2)	102 (27.1)	95 (17.7)	22 (19.5)	84 (17.0)	130 (15.2)	
Sexual Orientation *							
Mean (SD)	4.96 (1.35)	5.13 (1.30)	5.11 (1.31)	5.14 (1.30)	4.63 (1.56)	4.97 (1.22)	<0.001
Median [IQR]	5 [4-6]	6 [5-6]	6 [5-6]	6 [5-6]	5 [3-6]	5 [4-6]	<0.001
Frequency of visit †							
at least once every 2 weeks	1630 (68.6)	175 (46.5)	196 (36.5)	58 (51.3)	458 (92.5)	743 (86.9)	<0.001
Once a month or less than once a month	506 (21.3)	145 (38.6)	225 (41.9)	44 (38.9)	30 (6.1)	62 (7.3)	
More than 6 months ago or never before	240 (10.1)	56 (14.9)	116 (21.6)	11 (9.7)	7 (1.4)	50 (5.8)	

MSM = men who have sex with men.

IQR = inter quartile range.

SD = standard deviation.

Note that totals might not add up due to missing values.

* Sexual orientation was measured using a 7-point Kinsey scale, ranging from exclusively heterosexual (0) to exclusively homosexual (6).

† Participants' frequency of visit of a specific site in the preceding 6 months.

Table 2

Descriptive and injunctive site-specific condom-use norms regarding other visitors (N=2376), regarding a good friend (N=1975), and proportions of MSM's self-reported condom use (N=1421) among MSM at gay venues and websites across the Netherlands.

	Overall	Sex venues	Bars/clubs	Social/sports gatherings	Dating websites	Social network websites
	N=2376 [‡]	N=376	N=537	N=113	N=495	N=855
	n/N (%)	n/N (%)	n/N (%)	n/N (%)	n/N (%)	n/N (%)
Descriptive condom-use norm [*]						
Perception that others would engage in condomless anal sex						
<i>Other visitors</i>	1483/2376 (62.4)	242/376 (64.4)	346/537 (64.4)	41/113 (36.3)	289/495 (58.4)	565/855 (66.6)
Median [IQR]	3 [2-3]	3 [2-3]	3 [2-3]	2 [1-3]	3 [2-3]	3 [2-3]
<i>Good Friend</i>	588/1975 (29.8)	69/283 (24.4)	109/471 (23.1)	14/92 (15.2)	165/407 (40.5)	231/722 (32.0)
Median [IQR]	3 [2-3]	3 [2-3]	3 [2-3]	2 [1-3]	3 [2-3]	3 [2-3]
Injunctive condom-use norm [‡]						
Perception that others would disapprove of condom use						
<i>Other visitors</i>	1153/2376 (48.5)	194/376 (51.6)	220/537 (41.0)	25/113 (22.1)	243/495 (49.1)	471/855 (55.1)
Median [IQR]	2 [1-3]	2 [1-3]	2 [1-3]	1 [1-2]	2 [1-3]	2 [1-3]
<i>Good Friend</i>	389/1975 (19.7)	63/283 (22.3)	83/471 (17.6)	8/92 (8.7)	119/407 (29.2)	183/722 (25.3)
Median [IQR]	1 [1-2]	1 [1-2]	1 [1-2]	1 [1-2]	1 [1-3]	1 [1-2]
Participants' engagement in condomless anal sex with visitors met at site						
	318/1421 (22.4)	60/324 (18.5)	31/204 (15.2)	7/38 (18.4)	98/376 (26.1)	122/479 (25.5)

MSM = men who have sex with men.

IQR = inter quartile range.

Note that totals might not add up due to missing values.

^{*} The responses "never", "mostly not" and "sometimes" were categorized as having condomless anal sex, whereas "mostly" and "always" were categorized as using condoms.

[‡] The responses "3" and higher were categorized as disapproval of condom use, whereas the responses "1" and "2" were categorized as approval of condom use.

[‡] Denominators differ for responses regarding other visitors, the good friend (dependent on whether the good friend also visited the venue), and participant's own behavior (optional).

The association between type of site and descriptive and injunctive site-specific condom-use norms regarding other visitors among 2376 MSM at gay venues and websites across the Netherlands.

Table 3

	Univariate		Multivariate*	
	OR (95%CI)	p	OR (95%CI)	p
Descriptive norm				
Perception that others would engage in condomless anal sex †				
<i>Type of site</i>				
Sex venues	1	<0.001	1	<0.001
Bars/clubs	1.00 (0.76-1.32)		0.85 (0.63-1.14)	
Social/sports gatherings	0.32 (0.20-0.49)**		0.28 (0.18-0.45)**	
Dating websites	0.78 (0.59-1.02)		0.72 (0.54-0.96)	
Social network websites	1.08 (0.84-1.39)		0.89 (0.66-1.20)	
Injunctive norm				
Perception that others would disapprove of condom use ‡				
<i>Type of site</i>				
Sex venues	1	<0.001	1	<0.001
Bars/clubs	0.65 (0.50-0.85)**		0.47 (0.35-0.63)**	
Social/sports gatherings	0.27 (0.16-0.43)**		0.23 (0.14-0.39)**	
Dating websites	0.91 (0.69-1.18)		0.82 (0.62-1.08)	
Social network websites	1.15 (0.90-1.47)		0.74 (0.56-0.99)	

MSM = men who have sex with men.

OR = odds ratio.

CI = confidence interval.

* Adjusted for age, educational level, nationality and sexual orientation.

** p-value <0.01.

† The responses “never”, “mostly not” and “sometimes” were categorized as having condomless anal sex, whereas “mostly” and “always” were categorized as using condoms.

‡ The responses “3” and higher were categorized as disapproval of condom use, whereas the responses “1” and “2” were categorized as approval of condom use.

The association between descriptive and injunctive site-specific condom-use norms and self-reported condomless anal sex with visitors met at a particular site among 1262 MSM at gay venues and websites across the Netherlands.

Table 4

	Univariate		Multivariate Model 1*		Multivariate Model 2*	
	OR (95%CI)	p	OR (95%CI)	p	OR (95%CI)	p
Descriptive condom-use norm[†]						
Other visitors	1.87 (1.60-2.19)	<0.001	1.49 (1.28-1.82)	<0.001	1.33 (1.12-1.60)	0.002
Good Friend	1.89 (1.67-2.13)	<0.001			1.36 (1.16-1.59)	<0.001
Injunctive condom-use norm[‡]						
Other visitors	1.82 (1.61-2.07)	<0.001	1.60 (1.36-1.80)	<0.001	1.38 (1.19-1.60)	<0.001
Good Friend	1.97 (1.74-2.23)	<0.001			1.36 (1.15-1.61)	<0.001

MSM = men who have sex with men.

OR = odds ratio.

CI = confidence interval.

* Adjusted for age, educational level, nationality, and sexual orientation.

[†] Descriptive norms: Perception that others would engage in condomless anal sex; measured using a 5-point scale, ranging from “always” to “never”;

[‡] Injunctive norms: Perception that others would disapprove of condom use; measured using a 5-point scale ranging from “disapproving” to “disapproving”.