



American Men's Internet Survey (AMIS): Online HIV Behavioral Survey of Men Who Have Sex with Men United States, 2019



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Introduction

Men who have sex with men (MSM) contribute to over half of the more than one million adults living with HIV in the United States[1]. Incidence estimates of HIV infection from 2008 to 2011 have shown an increase in the number of new infections among MSM [2], due to factors including high prevalence, sexual risk behaviors, and not being aware of HIV status. The National HIV Behavioral Surveillance System (NHBS), using venue-based sampling to collect risk behavior data from high-risk populations, has found continued sexual risk and drug use behaviors associated with increased HIV risk among MSM [3]. The Centers for Disease Control and Prevention (CDC) recommends annual HIV testing for sexually active MSM (and more frequent for those with multiple sexual partners) [4], but 2011 NHBS data found only about 67% of HIV-negative or unknown status MSM reported an HIV test in the previous 12 months [5]. Monitoring HIV risk and testing behaviors among MSM is important in understanding epidemic trends and the impact of prevention efforts, including behavioral interventions and strategies to increase HIV testing.

An increasing number of MSM are socializing and identifying sexual partners through the internet, and recruiting MSM online offers an opportunity to supplement venue-based studies, such as NHBS, by including at-risk MSM that may not be reached through traditional means, such as bars and clubs [6]. Additionally, online HIV behavioral surveys allow for the collection of data from a large sample of MSM with broad geographic diversity. This report summarizes findings from a large online HIV behavior survey among MSM. The *American Men's Internet Survey (AMIS)* is a multi-cycle cross-sectional online HIV behavioral survey collecting self-reported data on demographic characteristics, HIV risk behaviors, HIV testing behaviors, and use of HIV prevention services among internet-using MSM in the United States and dependent territories. Participants were recruited online through banner advertisements (ads), and were consented and screened for eligibility after clicking on the ads. Men were eligible for participation if they were 15 years of age or older, U.S. residents, reported ever having oral or anal sex with a man OR identify as gay or bisexual, and able to complete the survey in English. Men who were eligible to participate in the survey completed a self-administered online survey. The survey consisted of a core questionnaire that every participant answered and 2 different subset questionnaires that participants were randomized to at the start of the survey. The core questions were comprised of the following domains: demographics, sexual behavior, HIV testing history, drug and alcohol use, acute HIV infection and other infections, and HIV prevention services exposure. Participants could decline to answer any question. Data were collected using encrypted HIPAA-compliant survey software and stored on an access-restricted secure data server. AMIS is a national research study conducted by Emory University; the procedures and materials were reviewed and approved by Emory's Institutional Review Board.

The tables in this report include data from the 2019 cycle of AMIS, collected between September 2019 and November 2019, among respondents reporting residence in United States. For demographic categories with small cell sizes, data were collapsed or suppressed to prevent identification using the following criteria: 1) all cell sizes <5 in Table 1 were suppressed or categories were combined into smaller subgroups, 2) for all remaining tables, cell sizes in the sample number (denominator) <5 were suppressed or combined into smaller subgroups, 3) where the sample size of a subgroup with <5 in the sample could be determined based on the sample numbers in the remaining subgroups, all data were suppressed. Study questions and full categories are available in Appendix A. These data were collected as a convenience sample and may not be representative or generalizable to all MSM living in a given state.

References

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Table 1. Characteristics of participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2019

		N	%
Race/ethnicity*	Black, non-Hispanic	1508	14.9
	Hispanic	1557	15.4
	White, non-Hispanic	6020	59.4
	Other or multiple races	845	8.3
Age (years)	15-24	4209	41.5
	25-29	1817	17.9
	30-39	1482	14.6
	40 or older	2622	25.9
Education	< HS diploma	602	5.9
	HS diploma or equivalent	1624	16.0
	Some college or technical degree	3495	34.5
	College degree or postgraduate education	4357	43.0
Annual household income	\$0 to \$19,999	1433	14.1
	\$20,000 to \$39,999	1935	19.1
	\$40,000 to \$74,999	2589	25.6
	\$75,000 or more	3069	30.3
NCHS Urban/Rural category	Large central metro	3755	37.1
	Large fringe metro	2205	21.8
	Medium metro	3153	31.1
	Small metro	1004	9.9
Self-reported HIV status	Positive	903	8.9
	Not positive	6610	65.3
	Unknown (includes never tested)	2617	25.8

Percentages may not total 100% due to missing data

MSM=men who have sex with men

HS=high school

NCHS=National Center for Health Statistics

***Persons of Hispanic/Latino ethnicity may be of any race**

NOTE: data may be combined or suppressed due to small cell sizes

Table 1. Characteristics of participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2019

		N	%
Anal sex without a condom with a male partner, past 12 month	No	3045	30.1
	Yes	7085	69.9
Illicit substances used, past 12 months	No	6666	65.8
	Yes	3464	34.2
Total		10130	100.0

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Table 2. Sexual behaviors with male partners of participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2019

			Sexual behaviors with male partners in the past 12 months					
				Anal intercourse with a male partner without a condom		Anal intercourse without a condom with a male partner of discordant or unknown HIV status		
			No. in sample	N	%	N	%	
Not positive	Age (years)	15-24	4129	2720	65.9	813	19.7	
		25-29	1693	1321	78.0	395	23.3	
		30-39	1264	952	75.3	325	25.7	
		40 or older	2141	1363	63.7	498	23.3	
	Race/ethnicity*	Black, non-Hispanic	1088	736	67.6	333	30.6	
		Hispanic	1471	1018	69.2	366	24.9	
		Other or multiple races	791	523	66.1	182	23.0	
		White, non-Hispanic	5697	3963	69.6	1108	19.4	
	Total			9227	6356	68.9	2031	22.0
	Positive	Age (years)	15-24	80	67	83.8	49	61.3
			25-29	124	102	82.3	73	58.9
			30-39	218	179	82.1	131	60.1
			40 or older	481	381	79.2	258	53.6
Race/ethnicity*		Black, non-Hispanic	420	330	78.6	234	55.7	
		Hispanic	86	67	77.9	53	61.6	
		Other or multiple races	54	45	83.3	30	55.6	
		White, non-Hispanic	323	273	84.5	190	58.8	
Total			903	729	80.7	511	56.6	

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Table 3. Substance using behaviors of participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2019

			<i>Substance use in the past 12 months</i>					
			<i>No. in sample</i>	<i>Used marijuana</i>		<i>Used illicit drugs other than marijuana</i>		
				<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	
Not positive	Age (years)	15-24	4129	1551	37.6	867	21.0	
		25-29	1693	563	33.3	458	27.1	
		30-39	1264	359	28.4	253	20.0	
		40 or older	2141	370	17.3	288	13.5	
	Race/ethnicity*	Black, non-Hispanic	1088	291	26.7	149	13.7	
		Hispanic	1471	486	33.0	315	21.4	
		Other or multiple races	791	254	32.1	181	22.9	
		White, non-Hispanic	5697	1759	30.9	1181	20.7	
	Total			9227	2843	30.8	1866	20.2
	Positive	Age (years)	15-24	80	28	35.0	19	23.8
25-29			124	59	47.6	52	41.9	
30-39			218	77	35.3	74	33.9	
40 or older			481	116	24.1	107	22.2	
Race/ethnicity*		Black, non-Hispanic	420	136	32.4	103	24.5	
		Hispanic	86	34	39.5	38	44.2	
		Other or multiple races	54	18	33.3	20	37.0	
		White, non-Hispanic	323	87	26.9	87	26.9	
Total			903	280	31.0	252	27.9	

Percentages may not total 100% due to missing data

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NOTE: data may be combined or suppressed due to small cell sizes

Table 4. Sexually transmitted infection testing and diagnosis among participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2017

			<i>No. in sample</i>	<i>Sexually transmitted infection testing in the past 12 months</i>		<i>Sexually transmitted infection diagnosis in the past 12 months</i>	
				<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
Not positive	Age (years)	15-24	4129	1574	38.1	367	8.9
		25-29	1693	889	52.5	270	15.9
		30-39	1264	711	56.3	195	15.4
		40 or older	2141	874	40.8	183	8.5
	Race/ethnicity*	Black, non-Hispanic	1088	637	58.5	223	20.5
		Hispanic	1471	682	46.4	188	12.8
		Other or multiple races	791	345	43.6	87	11.0
		White, non-Hispanic	5697	2305	40.5	495	8.7
	Total		9227	4048	43.9	1015	11.0
	Positive	Age (years)	15-24	80	60	75.0	35
25-29			124	107	86.3	62	50.0
30-39			218	180	82.6	91	41.7
40 or older			481	340	70.7	113	23.5
Race/ethnicity*		Black, non-Hispanic	420	334	79.5	161	38.3
		Hispanic	86	66	76.7	34	39.5
		Other or multiple races	54	48	88.9	18	33.3
		White, non-Hispanic	323	225	69.7	81	25.1
Total			903	687	76.1	301	33.3

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Table 5. HIV testing behaviors of HIV-negative or unknown serostatus participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2019

		No. in sample	Ever HIV tested		HIV tested in the past 12 months	
			N	%	N	%
<i>Race/ethnicity*</i>	Black, non-Hispanic	1088	916	84.2	735	67.6
	Hispanic	1471	1020	69.3	795	54.0
	White, non-Hispanic	5697	4134	72.6	2830	49.7
	Other or multiple races	791	558	70.5	435	55.0
<i>Age (years)</i>	15-24	4129	2279	55.2	1776	43.0
	25-29	1693	1447	85.5	1051	62.1
	30-39	1264	1137	90.0	844	66.8
	40 or older	2141	1894	88.5	1215	56.7
<i>Education</i>	< HS diploma	593	147	24.8	112	18.9
	HS diploma or equivalent	1521	829	54.5	617	40.6
	Some college or technical degree	3152	2355	74.7	1707	54.2
	College degree or postgraduate education	3909	3405	87.1	2436	62.3
<i>Household income</i>	\$0 to \$19,999	1321	881	66.7	650	49.2
	\$20,000 to \$39,999	1720	1314	76.4	947	55.1
	\$40,000 to \$74,999	2333	1872	80.2	1361	58.3
	\$75,000 or more	2795	2187	78.2	1555	55.6
<i>NCHS Urban/Rural category</i>	Large central metro	3281	2650	80.8	2031	61.9
	Large fringe metro	2002	1443	72.1	1028	51.3
	Medium metro	2974	2058	69.2	1442	48.5
	Small metro	957	596	62.3	378	39.5

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NOTE: data may be combined or suppressed due to small cell sizes

Table 5. HIV testing behaviors of HIV-negative or unknown serostatus participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2019

		<i>No. in sample</i>	<i>Ever HIV tested</i>		<i>HIV tested in the past 12 months</i>	
			<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
<i>Health insurance</i>	None	796	603	75.8	397	49.9
	Private only	6554	4810	73.4	3510	53.6
	Public only	1110	880	79.3	647	58.3
	Other/multiple	507	377	74.4	263	51.9
<i>Total</i>		9227	6757	73.2	4886	53.0

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Table 6. Testing location of last HIV test of HIV-negative or unknown serostatus participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2019

	Location of most recent HIV test	
	N	%
<i>Private doctor's office</i>	3180	47.4
<i>HIV counseling and testing site</i>	570	8.5
<i>Public health clinic/community health clinic</i>	1615	24.1
<i>Street outreach program/mobile unit</i>	243	3.6
<i>Sexually transmitted disease clinic</i>	154	2.3
<i>Hospital (inpatient)</i>	180	2.7
<i>Correctional facility (jail or prison)</i>	13	0.2
<i>Emergency room</i>	56	0.8
<i>At home</i>	385	5.7

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Table 7. Participation in HIV prevention services of HIV-negative or unknown serostatus participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2019

		<i>Prevention services received in the past 12 months</i>						
		<i>No. in sample</i>	<i>Received free condoms</i>		<i>Participated in group discussion</i>		<i>Participated in one-on-one prevention counseling</i>	
			<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
<i>Race/ethnicity*</i>	Black, non-Hispanic	1088	569	52.3	92	8.5	266	24.4
	Hispanic	1471	709	48.2	101	6.9	256	17.4
	White, non-Hispanic	5697	2153	37.8	161	2.8	586	10.3
	Other or multiple races	791	380	48.0	57	7.2	119	15.0
<i>Age (years)</i>	15-24	4129	1915	46.4	227	5.5	536	13.0
	25-29	1693	733	43.3	74	4.4	268	15.8
	30-39	1264	475	37.6	57	4.5	202	16.0
	40 or older	2141	764	35.7	65	3.0	248	11.6
<i>Education</i>	< HS diploma	593	146	24.6	32	5.4	67	11.3
	HS diploma or equivalent	1521	652	42.9	69	4.5	198	13.0
	Some college or technical degree	3152	1441	45.7	153	4.9	456	14.5
	College degree or postgraduate education	3909	1624	41.5	164	4.2	523	13.4
<i>Household income</i>	\$0 to \$19,999	1321	632	47.8	83	6.3	218	16.5
	\$20,000 to \$39,999	1720	774	45.0	81	4.7	250	14.5
	\$40,000 to \$74,999	2333	947	40.6	108	4.6	344	14.7
	\$75,000 or more	2795	1098	39.3	89	3.2	319	11.4
<i>NCHS Urban/Rural category</i>	Large central metro	3281	1596	48.6	190	5.8	552	16.8
	Large fringe metro	2002	842	42.1	78	3.9	257	12.8
	Medium metro	2974	1163	39.1	126	4.2	366	12.3
	Small metro	957	277	28.9	29	3.0	76	7.9

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Table 7. Participation in HIV prevention services of HIV-negative or unknown serostatus participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2019

		<i>Prevention services received in the past 12 months</i>						
		<i>No. in sample</i>	<i>Received free condoms</i>		<i>Participated in group discussion</i>		<i>Participated in one-on-one prevention counseling</i>	
			<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
<i>Health insurance</i>	None	796	368	46.2	29	3.6	126	15.8
	Private only	6554	2720	41.5	277	4.2	838	12.8
	Public only	1110	472	42.5	71	6.4	182	16.4
	Other/multiple	507	227	44.8	32	6.3	79	15.6
<i>Total</i>		9227	3887	42.1	423	4.6	1254	13.6

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Table 8. Knowledge of PrEP and willingness to use PrEP of HIV-negative or unknown serostatus participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2019

		No. in sample	Heard of PrEP		Willing to use PrEP		Used PrEP	
			N	%	N	%	N	%
<i>Race/ethnicity*</i>	Black, non-Hispanic	1088	948	87.1	505	46.4	250	23.0
	Hispanic	1471	1215	82.6	850	57.8	189	12.8
	White, non-Hispanic	5697	4915	86.3	2958	51.9	825	14.5
	Other or multiple races	791	682	86.2	441	55.8	124	15.7
<i>Age (years)</i>	15-24	4129	3355	81.3	2639	63.9	320	7.8
	25-29	1693	1550	91.6	865	51.1	361	21.3
	30-39	1264	1169	92.5	541	42.8	321	25.4
	40 or older	2141	1829	85.4	805	37.6	404	18.9
<i>Education</i>	< HS diploma	593	370	62.4	404	68.1	11	1.9
	HS diploma or equivalent	1521	1194	78.5	923	60.7	111	7.3
	Some college or technical degree	3152	2722	86.4	1760	55.8	396	12.6
	College degree or postgraduate education	3909	3580	91.6	1732	44.3	885	22.6
<i>Health insurance</i>	None	796	693	87.1	496	62.3	59	7.4
	Private only	6554	5724	87.3	3433	52.4	1096	16.7
	Public only	1110	904	81.4	537	48.4	168	15.1
	Other/multiple	507	418	82.4	242	47.7	74	14.6
<i>Household income</i>	\$0 to \$19,999	1321	1082	81.9	804	60.9	129	9.8
	\$20,000 to \$39,999	1720	1496	87.0	932	54.2	243	14.1
	\$40,000 to \$74,999	2333	2063	88.4	1151	49.3	443	19.0
	\$75,000 or more	2795	2480	88.7	1309	46.8	527	18.9

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Table 8. Knowledge of PrEP and willingness to use PrEP of HIV-negative or unknown serostatus participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2019

		<i>No. in sample</i>	<i>Heard of PrEP</i>		<i>Willing to use PrEP</i>		<i>Used PrEP</i>	
			<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
<i>NCHS Urban/Rural category</i>	Large central metro	3281	2923	89.1	1579	48.1	725	22.1
	Large fringe metro	2002	1706	85.2	1069	53.4	273	13.6
	Medium metro	2974	2528	85.0	1642	55.2	345	11.6
	Small metro	957	739	77.2	550	57.5	62	6.5
<i>Total</i>		9227	7903	85.7	4850	52.6	1406	15.2

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