

Online Supplementary Material.

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Methods – discussion of anthropometric variables

Four anthropometric variables were included in the analysis: height, weight, BMI, and self-rated attractiveness. These variables were included in the NInJaS questionnaire as they are considered important “specs” in the Japanese relationship market (though this is likely true in many other countries as well). For example, the Japanese concept of the “three highs” (*sankou*) was very popular during the 1980s Bubble Era: high education, high income, and height.”¹ This was a term used to describe men who were most desirable in the marriage market. Research has since shown that taller men² and men with lower BMI³ are more likely to be married in Japan. Prior research in other countries has shown that objective and self-rated attractiveness is also associated with sexual activity;^{4,5} in this study, we use self-rated attractiveness as we did not require photo submission as part of the online survey in an effort to maintain anonymity.

Results - descriptive analysis corresponding to Table 2

The average age of all respondents was 36.4 years (standard deviation [SD] 8.6), with those having a history of CSW service use (38.8 years [SD 7.3]) being older than those who have not (34.2 [9.2]). A considerably larger proportion of those who have used CSW services were married (64.0%) compared to those who have not (37.0%). A roughly similar proportion of heterosexual respondents were identified among those who have and have not used CSW services (89.3 vs 85.6%). There were considerably more full-time employees (85.0% vs 60.3%) and fewer part-time employees (3.9% vs 10.0%) among those who have used CSW services. The distribution of income was higher among those who have used CSW services, with 48.2% of respondents having an income above ¥5,000,000 compared to only 23.7% among those who have not. The distribution of education was roughly similar in both groups: 60.9 vs 55.9% had a university education or higher. No striking differences were noted in the distributions of region of residence or urbanity of residence between the two groups.

Both those who have used CSW services and those who have not were similar with respect to height (171.1 [6.2] vs 170.6 [7.6], respectively), weight (67.4 [11.3] vs 65.6 [13.9]), and BMI (22.9 [3.7] vs 21.3 [4.2]). However, more than double the number of respondents who have used CSW services reported that they are above average attractiveness than their counterparts who have not (13.0 vs 5.3%), while considerably fewer reported that they were below average attractiveness (29.7% vs 40.9%).

Both those who have used CSW services and those who have not reported similar proportions of being satisfied with their sex lives (26.2 vs 25.2%, respectively). However, a considerably larger proportion of the former reported that they would like to increase their frequency of sexual intercourse compared to the latter (56.3 vs 29.1%). Similarly, respondents who have used CSW services were much more likely to report that they considered sex to be important compared to those who have not (66.3 vs 38.6%).

STable 1. Sociodemographic, anthropometric, and attitudinal characteristics of male NInJaS respondents, stratified by 10-year age group and lifetime use of sexual services.

Variable	Category	20-29 (N = 1333)			30-39 (N = 1333)			40-49 (N = 1334)			20-49 (N = 4000)		
	Lifetime Use of CSW Services	No (N = 926)	Yes (N = 407)	Total	No (N = 728)	Yes (N = 605)	Total	No (N = 567)	Yes (N = 767)	Total	No (N = 2221)	Yes (N = 1779)	Total
<i>SOCIODEMOGRAPHICS</i>													
Age	Mean (SD)	24.4 (2.8)	25.7 (2.6)	24.8 (2.8)	34.5 (3.0)	35.2 (2.7)	34.9 (2.9)	44.7 (3.0)	45.0 (2.7)	44.9 (2.8)	34.2 (9.2)	38.8 (7.3)	36.4 (8.6)
Marital status	Married	10.6	26.8	15.2	44.5	68.8	56.6	59.3	72.1	66.9	37.0	64.0	50.0
	Never married	85.5	67.1	80.2	52.7	27.8	40.3	38.6	23.4	29.5	60.0	31.7	46.3
	Previously married	3.9	6.1	4.6	2.8	3.4	3.1	2.2	4.5	3.5	3.0	4.4	3.7
Relationship status	Married	10.6	26.8	15.2	44.5	68.8	56.6	59.3	72.1	66.9	37.0	64.0	50.0
	Cohabiting	1.6	7.5	3.3	2.0	2.0	2.0	0.5	0.9	0.8	1.4	2.3	1.8
	In a relationship	11.0	15.7	12.3	5.8	4.8	5.3	3.9	4.3	4.1	7.0	6.2	6.7
	Not in a relationship	76.8	50.0	69.2	47.8	24.4	36.2	36.4	22.7	28.2	54.6	27.5	41.5
Sexual orientation	Heterosexual	80.5	80.1	80.4	86.1	88.8	87.4	90.9	92.3	91.7	85.6	89.3	87.4
	Bisexual	3.1	10.3	5.2	2.2	4.5	3.4	1.6	2.7	2.2	2.3	4.5	3.4
	Homosexual	2.6	3.8	2.9	2.6	1.5	2.1	2.2	0.9	1.4	2.5	1.5	2.0
	Asexual	13.3	5.8	11.2	8.2	5.0	6.6	5.0	4.1	4.5	9.0	4.7	6.9
	Other	0.5	0.0	0.4	0.9	0.2	0.6	0.4	0.0	0.2	0.6	0.1	0.3
Occupational status	Full-time	44.6	74.4	53.1	65.7	88.2	76.9	72.7	86.2	80.8	60.3	85.0	72.3
	Part-time	12.4	7.5	11.0	11.4	3.8	7.6	6.1	2.9	4.2	10.0	3.9	7.1
	Self-employed	2.0	5.8	3.1	7.6	4.1	5.9	10.4	7.6	8.7	6.5	6.2	6.3
	Student	23.7	9.3	19.6	0.1	0.0	0.1	0.0	0.0	0.0	8.7	1.5	5.2
	Housewife/husband	0.2	0.7	0.3	1.9	0.2	1.0	1.3	0.4	0.8	1.1	0.4	0.7

	Unemployed	17.1	2.4	12.9	13.4	3.7	8.6	9.5	2.9	5.6	13.5	3.1	8.4
Income	<100	44.8	12.6	35.6	17.4	4.1	10.8	12.8	4.3	7.7	25.8	5.5	16.0
in ¥10,000s	100-299	25.9	26.6	26.1	24.1	9.3	16.7	19.0	7.4	12.1	23.0	11.0	17.2
	300-499	20.6	45.6	27.7	33.9	36.6	35.2	29.0	31.4	30.4	27.4	35.3	31.2
	500-799	6.7	13.1	8.5	19.9	39.6	29.7	23.9	38.1	32.4	16.4	34.7	25.2
	>800	2.2	2.2	2.2	4.8	10.4	7.6	15.3	18.8	17.4	7.3	13.5	10.3
Education	High school or less	32.0	27.1	30.6	30.2	24.7	27.4	26.3	23.8	24.8	29.6	24.6	27.2
	Trade/vocational school or short college	10.1	14.1	11.2	16.8	14.1	15.5	17.4	14.9	15.9	14.6	14.5	14.5
	Undergraduate studies	51.9	52.9	52.2	47.1	53.8	50.4	41.4	51.3	47.3	47.0	52.4	49.6
	Graduate studies	6.1	5.9	6.0	5.9	7.5	6.7	14.9	9.9	12.0	8.9	8.5	8.7
Region of residence	Hokkaido & Tohoku	10.0	10.4	10.1	9.4	12.1	10.7	12.0	9.8	10.7	10.5	10.6	10.5
	Kanto	36.1	39.4	37.1	35.7	36.8	36.3	37.3	35.5	36.2	36.4	36.5	36.5
	Chubu	17.1	17.1	17.1	18.4	15.9	17.2	16.7	17.7	17.3	17.3	17.0	17.2
	Kansai	18.2	15.8	17.5	16.0	17.2	16.6	17.5	16.8	17.1	17.3	16.8	17.0
	Chugoku & Shikoku	8.4	6.8	7.9	9.5	7.0	8.3	9.4	7.8	8.4	9.1	7.4	8.2
	Kyushu & Okinawa	10.2	10.5	10.3	11.0	11.1	11.1	7.2	12.6	10.4	9.4	11.8	10.6
Urbanity of residence	Within Tokyo's 23 wards or prefectural capital	31.6	32.7	31.9	27.9	32.3	30.1	31.4	31.5	31.4	30.4	31.9	31.1
	In Tokyo but outside of the 23 wards	4.4	3.1	4.0	5.5	5.2	5.4	5.0	3.8	4.3	4.9	4.2	4.6
	Cities other than prefectural capitals (population >500,000)	13.4	16.5	14.3	13.2	13.4	13.3	12.5	12.9	12.7	13.0	13.6	13.3
	Cities other than prefectural capitals	12.9	14.3	13.3	12.0	12.6	12.3	9.1	12.2	11.0	11.4	12.7	12.0

	(population 300,000-499,999)												
	Cities other than prefectural capitals (population <300,000)	27.1	22.3	25.7	28.9	26.8	27.9	33.4	30.6	31.8	29.7	28.1	28.9
	Village or town	10.7	11.2	10.8	12.6	9.6	11.1	8.5	9.0	8.8	10.5	9.6	10.1
ANTHROPOMETRICS													
Height	Mean (SD)	170.4 (7.3)	170.3 (8.2)	170.3 (7.6)	170.2 (7.3)	171.1 (6.1)	170.7 (6.8)	171.1 (7.7)	171.4 (5.9)	171.3 (6.6)	170.6 (7.6)	171.1 (6.2)	170.8 (6.9)
Weight	Mean (SD)	63.3 (13.6)	63.8 (11.6)	63.4 (13.1)	65.2 (12.5)	66.4 (11.1)	65.8 (11.8)	68.4 (13.9)	69.2 (11.4)	68.9 (12.4)	65.6 (13.9)	67.4 (11.3)	66.4 (12.6)
BMI	Mean (SD)	21.8 (5.0)	21.9 (3.5)	21.8 (4.7)	22.5 (4.2)	22.6 (3.5)	22.6 (3.8)	23.4 (5.1)	23.6 (3.7)	23.5 (4.3)	21.3 (4.2)	22.9 (3.7)	21.7 (4.1)
How would you describe your attractiveness?	Above average	6.9	17.1	9.8	4.2	13.0	8.6	4.6	11.8	8.9	5.3	13.0	9.0
	About average	51.2	59.0	53.4	54.2	57.7	55.9	56.2	56.4	56.3	53.8	57.2	55.4
	Below average	41.9	24.0	36.8	41.6	29.3	35.5	39.3	31.7	34.8	40.9	29.7	35.5
ATTITUDES													
"I am satisfied with my sex life."	Strongly agree	5.3	10.7	6.8	3.5	6.7	5.1	3.6	2.7	3.0	5.9	5.5	5.8
	Agree	17.4	28.9	20.7	17.1	22.8	20.0	14.6	16.8	15.9	19.3	20.7	19.7
	Neutral	54.8	33.9	48.8	54.0	41.6	47.8	57.2	48.2	51.8	55.2	43.7	52.2
	Disagree	11.7	17.6	13.4	13.0	16.5	14.7	12.3	18.2	15.8	10.8	17.5	12.6
	Strongly disagree	10.8	8.8	10.2	12.4	12.5	12.5	12.4	14.0	13.4	8.8	12.6	9.8
Would you like to change your frequency of sexual intercourse?	Yes, I would like to increase it a lot	12.1	26.1	16.1	11.7	22.8	17.2	11.9	24.0	19.2	7.4	23.6	11.7

	Yes, I would like to increase it a little	23.7	34.0	26.6	25.6	31.2	28.4	23.0	34.9	30.1	21.7	32.7	24.6
	No	54.1	35.5	48.8	53.4	41.9	47.7	60.2	38.5	47.3	59.8	38.5	54.2
	Yes, I would like to decrease It a little	2.6	2.1	2.4	1.8	2.8	2.3	1.2	0.8	1.0	2.9	3.0	2.9
	Yes, I would like to decrease it a lot	7.6	2.2	6.1	7.5	1.4	4.5	3.6	1.7	2.5	8.2	2.2	6.7
How important is sex to you?	Very important	11.7	27.2	16.1	12.4	25.2	18.8	13.5	23.6	19.5	9.9	24.2	13.7
	Somewhat important	25.3	42.1	30.1	31.5	43.3	37.4	30.9	43.4	38.3	28.6	42.1	32.2
	Neither important nor unimportant	38.9	21.5	33.9	34.3	22.2	28.3	34.9	23.5	28.1	31.6	22.7	29.3
	Not very important	9.7	7.0	8.9	9.3	6.7	8.0	14.2	6.2	9.4	14.8	7.6	12.9
	Not important at all	14.4	2.3	11.0	12.4	2.6	7.5	6.6	3.4	4.7	15.1	3.5	12.1

STable 2. Sociodemographic, anthropometric, and attitudinal characteristics associated with lifetime use of sexual services among male NiJaS respondents, stratified by 10-year age group [univariate age-adjusted odds ratios].

Variable	Category	aOR (95% CI)							
		20-29 (N = 1333)	p value	30-39 (N = 1333)	p value	40-49 (N = 1334)	p value	20-49 (N = 4000)	p value
SOCIODEMOGRAPHICS									
Age		1.18 (1.13-1.24)*	<0.001	1.09 (1.04-1.13)*	<0.001	1.03 (0.99-1.08)	0.14	1.07 (1.06-1.08)*	<0.001
Marital status	Married	Ref.		Ref.		Ref.		Ref.	
	Never married	0.42 (0.30-0.60)*	<0.001	0.36 (0.28-0.45)*	<0.001	0.50 (0.40-0.64)*	<0.001	0.42 (0.36-0.48)*	<0.001
	Previously married	0.82 (0.45-1.51)	0.532	0.79 (0.45-1.37)	0.403	1.65 (0.94-2.88)	0.082	1.01 (0.74-1.38)	0.943
Relationship status	Married	Ref.		Ref.		Ref.		Ref.	
	Cohabiting	2.62 (1.27-5.42)*	0.01	0.71 (0.36-1.42)	0.336	1.51 (0.40-5.60)	0.541	1.52 (0.95-2.43)	0.082
	In a relationship	0.87 (0.54-1.41)	0.577	0.58 (0.37-0.91)*	0.017	0.93 (0.57-1.52)	0.769	0.76 (0.58-0.98)*	0.037
	Not in a relationship	0.35 (0.25-0.51)*	<0.001	0.34 (0.27-0.44)*	<0.001	0.51 (0.41-0.65)*	<0.001	0.39 (0.34-0.46)*	<0.001
Sexual orientation	Heterosexual	Ref.		Ref.		Ref.		Ref.	
	Bisexual	3.66 (2.11-6.34)*	<0.001	2.02 (1.07-3.83)*	0.031	1.71 (0.71-4.08)	0.229	2.42 (1.63-3.60)*	<0.001
	Homosexual	1.97 (0.95-4.06)	0.067	0.67 (0.28-1.57)	0.355	0.38 (0.17-0.86)*	0.02	0.74 (0.44-1.23)	0.249
	Asexual	0.46 (0.28-0.75)*	0.002	0.60 (0.37-0.98)*	0.041	0.81 (0.47-1.41)	0.463	0.61 (0.45-0.81)*	0.001
	Other	-		0.23 (0.05-1.12)	0.068	-		0.13 (0.03-0.58)*	0.008
Occupational status	Full-time	Ref.		Ref.		Ref.		Ref.	
	Part-time	0.39 (0.25-0.61)*	<0.001	0.25 (0.16-0.38)*	<0.001	0.39 (0.24-0.66)*	<0.001	0.33 (0.25-0.43)*	<0.001
	Self-employed	1.80 (0.90-3.58)	0.095	0.39 (0.24-0.63)*	<0.001	0.62 (0.41-0.92)*	0.018	0.61 (0.46-0.82)*	0.001

	Student	0.37 (0.22-0.62)*	<0.001	-		-		0.26 (0.17-0.41)*	<0.001
	Housewife/husband	2.71 (0.34-21.81)	0.349	0.07 (0.01-0.52)*	0.01	0.25 (0.04-1.41)	0.115	0.23 (0.08-0.69)*	0.009
	Unemployed	0.09 (0.04-0.17)*	<0.001	0.20 (0.13-0.31)*	<0.001	0.26 (0.17-0.41)*	<0.001	0.19 (0.14-0.25)*	<0.001
Income	<100	Ref.		Ref.		Ref.		Ref.	
in ¥10,000s	100-299	3.34 (2.21-5.06)*	<0.001	1.62 (1.01-2.61)*	0.048	1.16 (0.71-1.91)	0.549	1.98 (1.52-2.58)*	<0.001
	300-499	6.56 (4.40-9.78)*	<0.001	4.63 (3.02-7.09)*	<0.001	3.23 (2.06-5.05)*	<0.001	4.84 (3.80-6.18)*	<0.001
	500-799	5.73 (3.43-9.57)*	<0.001	8.03 (5.16-12.51)*	<0.001	4.75 (3.01-7.49)*	<0.001	7.14 (5.47-9.31)*	<0.001
	>800	3.08 (1.22-7.78)*	0.018	8.46 (4.68-15.32)*	<0.001	3.65 (2.22-5.99)*	<0.001	5.72 (4.11-7.97)*	<0.001
Education	High school or less	Ref.		Ref.		Ref.		Ref.	
	Trade/vocational school or short college	1.54 (1.00-2.37)	0.05	1.03 (0.70-1.52)	0.88	0.95 (0.66-1.37)	0.798	1.08 (0.86-1.37)	0.497
	Undergraduate studies	1.23 (0.91-1.65)	0.18	1.48 (1.12-1.96)*	0.006	1.38 (1.03-1.84)*	0.031	1.36 (1.15-1.61)*	<0.001
	Graduate studies	1.02 (0.58-1.82)	0.935	1.66 (1.00-2.77)	0.052	0.75 (0.49-1.14)	0.177	0.97 (0.72-1.30)	0.818
Region of residence	Hokkaido & Tohoku	Ref.		Ref.		Ref.		Ref.	
	Kanto	1.08 (0.69-1.67)	0.746	0.81 (0.55-1.19)	0.276	1.16 (0.78-1.73)	0.461	1.01 (0.79-1.29)	0.957
	Chubu	0.96 (0.58-1.58)	0.869	0.68 (0.43-1.06)	0.087	1.30 (0.83-2.06)	0.254	0.98 (0.74-1.29)	0.873
	Kansai	0.84 (0.51-1.37)	0.475	0.87 (0.56-1.35)	0.522	1.17 (0.75-1.84)	0.487	0.98 (0.74-1.28)	0.863
	Chugoku & Shikoku	0.80 (0.44-1.45)	0.466	0.57 (0.32-1.02)	0.057	1.01 (0.59-1.75)	0.966	0.79 (0.56-1.11)	0.177
	Kyushu & Okinawa	0.99 (0.55-1.79)	0.982	0.78 (0.45-1.34)	0.365	2.16 (1.18-3.93)*	0.012	1.26 (0.90-1.76)	0.174
Urbanity of residence	Within Tokyo's 23 wards or prefectural capital	Ref.		Ref.		Ref.		Ref.	
	In Tokyo but outside of the 23 wards	0.60 (0.29-1.24)	0.169	0.81 (0.47-1.40)	0.447	0.75 (0.43-1.31)	0.314	0.77 (0.55-1.09)	0.141

	Cities other than prefectural capitals (population >500,000)	1.10 (0.74-1.62)	0.642	0.90 (0.61-1.33)	0.602	1.04 (0.70-1.54)	0.844	1.03 (0.81-1.30)	0.819
	Cities other than prefectural capitals (population 300,000-499,999)	1.00 (0.66-1.52)	0.994	0.93 (0.62-1.40)	0.738	1.33 (0.87-2.06)	0.19	1.11 (0.87-1.41)	0.397
	Cities other than prefectural capitals (population <300,000)	0.71 (0.50-1.01)	0.054	0.78 (0.57-1.06)	0.115	0.91 (0.68-1.23)	0.547	0.83 (0.69-1.01)	0.057
	Village or town	0.91 (0.58-1.43)	0.684	0.66 (0.43-1.02)	0.059	1.05 (0.66-1.67)	0.844	0.88 (0.68-1.15)	0.342
ANTHROPOMETRICS									
Height		1.00 (0.98-1.02)	0.909	1.02 (1.00-1.04)*	0.03	1.01 (0.99-1.02)	0.453	1.01 (1.00-1.02)	0.112
Weight		1.00 (0.99-1.01)	0.995	1.01 (1.00-1.02)	0.101	1.01 (1.00-1.01)	0.316	1.00 (1.00-1.01)	0.11
BMI		1.00 (0.98-1.02)	0.893	1.01 (0.98-1.04)	0.598	1.01 (0.98-1.04)	0.589	1.01 (0.99-1.02)	0.523
How would you describe your attractiveness?	Above average	Ref.		Ref.		Ref.		Ref.	
	About average	0.48 (0.32-0.72)*	<0.001	0.33 (0.21-0.53)*	<0.001	0.38 (0.23-0.63)*	<0.001	0.39 (0.30-0.51)*	<0.001
	Below average	0.24 (0.15-0.37)*	<0.001	0.22 (0.14-0.36)*	<0.001	0.30 (0.18-0.51)*	<0.001	0.26 (0.20-0.35)*	<0.001
ATTITUDES									
"I am satisfied with my sex life."	Strongly agree	3.49 (2.12-5.76)*	<0.001	2.78 (1.50-5.14)*	0.001	0.91 (0.43-1.92)	0.809	2.11 (1.46-3.05)*	<0.001
	Agree	2.71 (1.94-3.79)*	<0.001	1.77 (1.27-2.47)*	0.001	1.38 (0.98-1.95)	0.068	1.80 (1.47-2.20)*	<0.001
	Neutral	Ref.		Ref.		Ref.		Ref.	
	Disagree	2.30 (1.57-3.37)*	<0.001	1.60 (1.12-2.28)*	0.009	1.76 (1.25-2.50)*	0.001	1.82 (1.48-2.25)*	<0.001
	Strongly disagree	1.30 (0.82-2.05)	0.264	1.33 (0.92-1.92)	0.129	1.34 (0.94-1.90)	0.107	1.33 (1.07-1.67)*	0.011
Would you like to change your frequency of sexual intercourse?	Yes, I would like to increase it a lot	3.66 (2.56-5.22)*	<0.001	2.46 (1.77-3.42)*	<0.001	3.13 (2.23-4.40)*	<0.001	2.94 (2.41-3.60)*	<0.001

	Yes, I would like to increase it a little	2.38 (1.73-3.26)*	<0.001	1.51 (1.13-2.01)*	0.006	2.39 (1.79-3.18)*	<0.001	2.02 (1.70-2.41)*	<0.001
	No	Ref.		Ref.		Ref.		Ref.	
	Yes, I would like to decrease it a little	1.42 (0.61-3.34)	0.417	2.07 (0.83-5.18)	0.118	1.08 (0.37-3.18)	0.886	1.60 (0.92-2.77)	0.094
	Yes, I would like to decrease it a lot	0.46 (0.22-0.97)*	0.042	0.25 (0.12-0.54)*	<0.001	0.74 (0.32-1.68)	0.47	0.45 (0.29-0.72)*	0.001
How important is sex to you?	Very important	4.37 (2.98-6.40)*	<0.001	3.09 (2.14-4.47)*	<0.001	2.62 (1.82-3.77)*	<0.001	3.12 (2.51-3.89)*	<0.001
	Somewhat important	3.03 (2.17-4.23)*	<0.001	2.09 (1.54-2.84)*	<0.001	2.11 (1.56-2.84)*	<0.001	2.29 (1.91-2.75)*	<0.001
	Neither important nor unimportant	Ref.		Ref.		Ref.		Ref.	
	Not very important	1.30 (0.75-2.24)	0.346	1.09 (0.68-1.75)	0.725	0.65 (0.42-1.00)	0.052	0.88 (0.66-1.17)	0.377
	Not important at all	0.30 (0.13-0.68)*	0.004	0.34 (0.18-0.62)*	0.001	0.77 (0.43-1.39)	0.388	0.48 (0.33-0.68)*	<0.001

* p<0.05

- unable to calculate

Table 3. Sociodemographic, anthropometric, and attitudinal characteristics associated with lifetime use of sexual services among male NiJaS

respondents, stratified by 10-year age group [multivariate odds ratios].

Variable	Category	OR (95% CI)							
		20-29 (N = 1333)	p value	30-39 (N = 1333)	p value	40-49 (N = 1334)	p value	20-49 (N = 4000)	p value
SOCIODEMOGRAPHICS									
Age		1.12 (1.04-1.20)*	0.001	1.06 (1.01-1.12)*	0.013	1.02 (0.98-1.07)	0.315	1.04 (1.03-1.05)*	<0.001
Marital status	Married	Ref.		Ref.		Ref.		Ref.	
	Never married	0.65 (0.42-1.03)	0.065	0.68 (0.49-0.94)*	0.021	0.89 (0.65-1.21)	0.45	0.74 (0.61-0.90)*	0.003
	Previously married	1.33 (0.63-2.83)	0.451	1.64 (0.76-3.52)	0.208	2.15 (1.12-4.10)*	0.021	1.60 (1.10-2.33)*	0.014
Relationship status	Married	Ref.		Ref.		Ref.		Ref.	
	Cohabiting	4.74 (2.27-9.87)*	<0.001	1.00 (0.44-2.28)	1	1.90 (0.33-10.89)	0.469	2.14 (1.26-3.66)*	0.005
	In a relationship	1.37 (0.85-2.22)	0.192	0.88 (0.51-1.53)	0.654	1.36 (0.76-2.42)	0.301	1.24 (0.92-1.67)	0.151
	Not in a relationship	-		-		-		-	
Sexual orientation	Heterosexual	Ref.		Ref.		Ref.		Ref.	
	Bisexual	3.89 (2.08-7.25)*	<0.001	2.62 (1.28-5.35)*	0.008	1.60 (0.56-4.52)	0.378	2.46 (1.55-3.90)*	<0.001
	Homosexual	1.77 (0.70-4.48)	0.227	0.81 (0.36-1.82)	0.609	0.32 (0.13-0.77)*	0.011	0.76 (0.46-1.28)	0.309
	Asexual	0.97 (0.52-1.80)	0.925	1.43 (0.79-2.57)	0.234	1.31 (0.70-2.46)	0.397	1.20 (0.86-1.69)	0.286
	Other	-		1.54 (0.30-7.95)	0.605	-		0.64 (0.14-2.95)	0.568
Occupational status	Full-time	Ref.		Ref.		Ref.		Ref.	
	Part-time	0.75 (0.42-1.31)	0.31	0.62 (0.36-1.07)	0.088	0.85 (0.49-1.49)	0.579	0.70 (0.52-0.95)*	0.023
	Self-employed	3.38 (1.60-7.12)*	0.001	0.63 (0.36-1.11)	0.11	0.84 (0.52-1.35)	0.47	0.85 (0.62-1.18)	0.342

	Student	0.92 (0.44-1.92)	0.832	-		-		0.59 (0.33-1.05)	0.072
	Housewife/husband	6.51 (1.01-41.86)*	0.049	0.15 (0.02-1.44)	0.099	0.35 (0.04-3.23)	0.352	0.46 (0.14-1.53)	0.205
	Unemployed	0.23 (0.10-0.52)*	0.001	0.49 (0.23-1.05)	0.068	0.62 (0.29-1.32)	0.215	0.50 (0.33-0.76)*	0.001
Income	<100	Ref.		Ref.		Ref.		Ref.	
in ¥10,000s	100-299	2.02 (1.08-3.76)*	0.028	0.92 (0.46-1.84)	0.816	0.83 (0.43-1.58)	0.562	1.20 (0.83-1.74)	0.32
	300-499	3.33 (1.71-6.48)*	<0.001	2.14 (1.03-4.45)*	0.041	2.08 (1.07-4.04)*	0.03	2.43 (1.66-3.57)*	<0.001
	500-799	2.35 (1.06-5.24)*	0.036	3.33 (1.52-7.29)*	0.003	3.19 (1.61-6.34)*	0.001	3.45 (2.28-5.20)*	<0.001
	>800	0.96 (0.31-3.00)	0.939	3.16 (1.28-7.77)*	0.012	2.67 (1.29-5.51)*	0.008	2.75 (1.73-4.35)*	<0.001
Education	High school or less	Ref.		Ref.		Ref.		Ref.	
	Trade/vocational school or short college	1.11 (0.67-1.84)	0.691	0.91 (0.58-1.43)	0.689	0.77 (0.51-1.16)	0.214	0.88 (0.67-1.14)	0.337
	Undergraduate studies	0.96 (0.66-1.41)	0.84	1.00 (0.71-1.41)	0.986	0.91 (0.64-1.29)	0.584	0.96 (0.78-1.17)	0.675
	Graduate studies	0.77 (0.40-1.49)	0.446	1.02 (0.56-1.85)	0.958	0.43 (0.26-0.70)*	0.001	0.62 (0.44-0.85)*	0.004
Region of residence	Hokkaido & Tohoku	Ref.		Ref.		Ref.		Ref.	
	Kanto	0.91 (0.52-1.59)	0.734	0.55 (0.34-0.88)*	0.012	1.02 (0.65-1.61)	0.928	0.83 (0.63-1.10)	0.197
	Chubu	1.00 (0.54-1.83)	0.991	0.58 (0.35-0.96)*	0.035	1.19 (0.72-1.99)	0.497	0.89 (0.65-1.22)	0.466
	Kansai	0.79 (0.44-1.45)	0.449	0.69 (0.41-1.16)	0.162	1.05 (0.63-1.75)	0.842	0.87 (0.64-1.19)	0.385
	Chugoku & Shikoku	0.81 (0.39-1.68)	0.563	0.49 (0.25-0.94)*	0.031	0.90 (0.49-1.65)	0.738	0.74 (0.50-1.10)	0.137
	Kyushu & Okinawa	1.03 (0.50-2.14)	0.932	0.81 (0.43-1.52)	0.511	1.90 (1.03-3.49)*	0.04	1.25 (0.86-1.81)	0.243
Urbanity of residence	Within Tokyo's 23 wards or prefectural capital	Ref.		Ref.		Ref.		Ref.	
	In Tokyo but outside of the 23 wards	0.86 (0.38-1.96)	0.717	0.77 (0.41-1.44)	0.409	0.91 (0.46-1.78)	0.773	0.89 (0.60-1.32)	0.555

	Cities other than prefectural capitals (population >500,000)	1.10 (0.69-1.74)	0.687	0.83 (0.52-1.31)	0.421	0.95 (0.62-1.47)	0.827	0.98 (0.76-1.27)	0.885
	Cities other than prefectural capitals (population 300,000-499,999)	1.13 (0.69-1.85)	0.64	1.04 (0.65-1.65)	0.882	1.34 (0.85-2.13)	0.209	1.14 (0.87-1.49)	0.329
	Cities other than prefectural capitals (population <300,000)	0.88 (0.58-1.33)	0.542	0.86 (0.59-1.24)	0.415	0.84 (0.60-1.17)	0.296	0.87 (0.70-1.08)	0.204
	Village or town	1.25 (0.71-2.21)	0.438	0.94 (0.55-1.60)	0.822	1.08 (0.63-1.88)	0.772	1.05 (0.77-1.44)	0.753
ANTHROPOMETRICS									
Height		0.95 (0.91-0.99)*	0.022	0.93 (0.84-1.04)	0.218	0.97 (0.93-1.02)	0.239	0.97 (0.94-1.00)*	0.021
Weight		1.04 (0.99-1.09)	0.103	1.11 (0.96-1.28)	0.172	1.02 (0.98-1.07)	0.242	1.03 (1.00-1.06)*	0.024
BMI		0.92 (0.81-1.04)	0.169	0.78 (0.51-1.19)	0.246	0.95 (0.86-1.06)	0.388	0.94 (0.87-1.01)	0.086
How would you describe your attractiveness?	Above average	Ref.		Ref.		Ref.		Ref.	
	About average	0.68 (0.42-1.11)	0.121	0.43 (0.24-0.75)*	0.003	0.40 (0.23-0.71)*	0.002	0.50 (0.37-0.67)*	<0.001
	Below average	0.45 (0.26-0.79)*	0.005	0.42 (0.23-0.76)*	0.004	0.37 (0.20-0.67)*	0.001	0.44 (0.32-0.60)*	<0.001
ATTITUDES									
"I am satisfied with my sex life."	Strongly agree	2.27 (1.14-4.50)*	0.019	1.35 (0.62-2.90)	0.45	0.44 (0.17-1.15)	0.093	1.06 (0.67-1.68)	0.81
	Agree	1.51 (1.00-2.27)*	0.048	1.26 (0.86-1.85)	0.23	1.13 (0.76-1.69)	0.55	1.21 (0.97-1.52)	0.094
	Neutral	Ref.		Ref.		Ref.		Ref.	
	Disagree	1.47 (0.90-2.39)	0.125	1.24 (0.79-1.94)	0.35	0.83 (0.54-1.27)	0.381	1.05 (0.81-1.36)	0.717
	Strongly disagree	0.96 (0.52-1.78)	0.906	1.43 (0.86-2.36)	0.167	0.71 (0.45-1.13)	0.145	0.95 (0.70-1.27)	0.707
Would you like to change your	Yes, I would like to increase it a lot	3.41 (1.88-6.21)*	<0.001	1.58 (0.95-2.63)	0.079	2.58 (1.52-4.36)*	<0.001	2.22 (1.64-3.01)*	<0.001

frequency of sexual intercourse?									
	Yes, I would like to increase it a little	1.75 (1.18-2.59)*	0.006	1.02 (0.71-1.47)	0.913	1.96 (1.34-2.85)*	<0.001	1.52 (1.22-1.89)*	<0.001
	No	Ref.		Ref.		Ref.		Ref.	
	Yes, I would like to decrease It a little	1.07 (0.43-2.67)	0.89	1.77 (0.56-5.59)	0.332	1.28 (0.39-4.15)	0.682	1.47 (0.81-2.69)	0.207
	Yes, I would like to decrease it a lot	1.45 (0.56-3.72)	0.444	0.29 (0.11-0.77)*	0.014	0.88 (0.33-2.35)	0.798	0.68 (0.39-1.20)	0.18
How important is sex to you?	Very important	1.39 (0.78-2.48)	0.259	1.64 (0.97-2.78)	0.063	1.48 (0.91-2.41)	0.112	1.59 (1.18-2.13)*	0.002
	Somewhat important	1.68 (1.10-2.56)*	0.016	1.37 (0.95-1.98)	0.096	1.47 (1.03-2.09)*	0.032	1.51 (1.22-1.88)*	<0.001
	Neither important nor unimportant	Ref.		Ref.		Ref.		Ref.	
	Not very important	1.32 (0.71-2.44)	0.379	1.02 (0.60-1.72)	0.951	0.70 (0.44-1.13)	0.147	0.92 (0.68-1.26)	0.607
	Not important at all	0.39 (0.16-0.95)*	0.037	0.46 (0.22-0.94)*	0.034	1.40 (0.72-2.71)	0.324	0.70 (0.47-1.06)	0.095

* p<0.05

- unable to calculate

STable 4. Distribution of the number of estimated CSW partners over the lifetime reported by male NInJaS respondents aged 20-49 years.

Number of partners	Frequency	Number of partners	Frequency	Number of partners	Frequency
0	2,911	29	6	95	5
1	150	30	16	96	2
2	125	34	2	97	2
3	83	35	3	98	2
4	61	37	2	99	1
5	134	39	1	100 or more	40
6	18	40	13		
7	42	42	2		
8	31	44	2		
9	27	45	12		
10	83	46	2		
11	11	47	6		
12	18	48	3		
13	13	49	2		
14	6	50	7		
15	25	51	1		
16	5	55	2		
17	18	59	1		
18	8	60	2		
19	8	65	1		
20	33	68	1		
21	3	70	1		
22	4	74	1		
23	1	80	1		
24	3	85	2		
25	12	86	1		
26	3	88	1		
27	6	90	3		
28	8	92	1		

Table 5. Sociodemographic, anthropometric, and attitudinal characteristics of male NInJaS respondents aged 20-49 years, stratified by use of sexual services in the past year^a.

Variable	Category	Use of CSW Services in the Past Year		
		No (N = 3659)	Yes (N = 341)	Total
SOCIODEMOGRAPHICS				
Age	Mean (SD)	36.4 (8.7)	36.5 (7.9)	36.4 (8.6)
Marital status	Married	53.2	55.5	53.3
	Never married	42.2	38.5	41.9
	Previously married	4.7	6.0	4.8
Relationship status	Married	53.2	55.5	53.3
	Cohabiting	2.1	5.1	2.3
	In a relationship	7.7	7.8	7.7
	Not in a relationship	37.1	31.6	36.8
Sexual orientation	Heterosexual	85.3	83.5	85.2
	Bisexual	4.2	7.7	4.4
	Homosexual	1.4	1.8	1.4
	Asexual	8.6	6.4	8.5
	Other	0.5	0.6	0.5
Occupational status	Full-time	53.0	75.3	54.2
	Part-time	16.6	9.7	16.2
	Self-employed	5.1	5.8	5.2
	Student	5.0	2.1	4.9
	Housewife/husband	12.2	4.7	11.7
	Unemployed	8.1	2.4	7.8
Income	<100	30.1	10.5	29.0

in ¥10,000s	100-299	24.5	18.8	24.1
	300-499	23.9	33.1	24.4
	500-799	15.2	27.9	15.9
	>800	6.4	9.7	6.6
Education	High school or less	28.4	27.2	28.3
	Trade/vocational school or short college	22.2	15.2	21.8
	Undergraduate studies	44.1	49.4	44.4
	Graduate studies	5.3	8.2	5.5
Region of residence	Hokkaido & Tohoku	10.5	9.2	10.5
	Kanto	36.1	40.0	36.3
	Chubu	16.8	16.3	16.8
	Kansai	17.4	17.4	17.4
	Chugoku & Shikoku	8.4	5.7	8.2
	Kyushu & Okinawa	10.8	11.5	10.8
Urbanity of residence	Within Tokyo's 23 wards or prefectural capital	30.8	30.9	30.9
	In Tokyo but outside of the 23 wards	4.3	5.4	4.3
	Cities other than prefectural capitals (population >500,000)	14.0	15.7	14.1
	Cities other than prefectural capitals (population 300,000-499,999)	12.9	11.8	12.8
	Cities other than prefectural capitals (population <300,000)	27.7	25.1	27.5
	Village or town	10.3	11.1	10.3
ANTHROPOMETRICS				
Height	Mean (SD)	164.3 (9.1)	168.2 (8.6)	164.5 (9.1)
Weight	Mean (SD)	58.8 (13.2)	64.7 (14.3)	59.2 (13.3)

BMI	Mean (SD)	21.7 (4.1)	22.7 (4.2)	21.7 (4.1)
How would you describe your attractiveness?	Above average	8.9	11.2	9.0
	About average	55.9	58.2	56.0
	Below average	35.2	30.7	35.0
<i>ATTITUDES</i>				
"I am satisfied with my sex life."	Strongly agree	5.8	5.0	5.8
	Agree	19.7	19.6	19.7
	Neutral	52.6	45.7	52.2
	Disagree	12.3	17.4	12.6
	Strongly disagree	9.7	12.4	9.8
Would you like to change your frequency of sexual intercourse?	Yes, I would like to increase it a lot	10.9	24.9	11.7
	Yes, I would like to increase it a little	24.1	31.6	24.6
	No	55.4	34.4	54.2
	Yes, I would like to decrease It a little	2.9	2.9	2.9
	Yes, I would like to decrease it a lot	6.7	6.2	6.7
Importance	Very important	12.8	29.0	13.7
	Somewhat important	31.9	36.5	32.2
	Neither important nor unimportant	29.7	22.4	29.3
	Not very important	13.3	5.3	12.9
	Not important at all	12.4	6.8	12.1

ª The following two questions were included In the NiJaS survey: (1) How many sexual partners have you had in the last year, including CSWs? (2) How many sexual partners have you had in the last year, excluding CSWs? Use of CSW services in the past year was defined by taking the difference between these two answers and obtaining a value of 1 or greater.

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