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HIV infection, COVID-19, and vaccination against COVID-19 infection in sub-populations of men who have sex with men (MSM) during the COVID-19 pandemic in the Czech Republic: A questionnaire survey

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Abstract

Aim: MSM is one of the key groups to HIV. The COVID-19 pandemic and the restrictions implemented in connection with it have fundamentally changed social and sexual life. These effects may have been much more potent for minority groups, such as MSM, than for the majority population.

Methods: A descriptive cross-sectional study used data from an online questionnaire survey. The questionnaire was distributed using social networks. Descriptive characteristics and prevalence were calculated. ANOVA was used to test for differences between variables.

Results: A total of 701 responses were analyzed. The median age was 25-29 years, the most common was university education (33.1 %), and the majority lived in a city (77.2 %). 77.6 % identified as homosexual. 44.7 % had experienced COVID-19, and 76.2 % reported vaccination against COVID-19. 24.3 % did not know their HIV status, and 5.6 % said they were HIV positive.

Conclusion: Knowledge of HIV status increased with age; many respondents did not know their HIV status. Along with education and economic activity, age was a significant factor for HIV, COVID-19, and vaccination. HIV prevalence was higher in the MSM population than reported by previous studies, highlighting the need for further studies and testing in this subpopulation.

Keywords: HIV infection, COVID-19, vaccination for COVID-19, MSM, questionnaire survey, Czechia

Introduction

Since December 2019, when the first cases with symptoms consistent with COVID-19 appeared **[1]**, the disease has spread worldwide. The first cases were identified in the Czech Republic on March 1, 2020 **[2]**. Since then, this disease has affected the lives of almost all people. The effects of the infection caused social isolation due to the restrictions implemented. These restrictions could lead to a reduction in the availability of health care in the area of sexually transmitted infections (STIs), especially HIV infection **[3,4]**. These factors could then lead to the development of STIs.

In contrast, these restrictions caused greater isolation, which reduced the possibilities of sexual contact, especially non-partner contact **[5,6]**. Psychological stress and negative emotions due to the pandemic also affected sex life and, as a result, the risk of STI transmission **[7,8]**. Thus, the pandemic may have had a relatively ambivalent impact on sexual and risky sexual behavior. The highest prevalence of the disease COVID-19 was reported in the Czech Republic on February 2, 2022, when it reached 35.6 cases (active) per 1000 inhabitants **[9,10]**.

Men who have sex with men (MSM) are a group of men who have sex with men regardless of their orientation and sexual identification **[11]**. This key group was chosen because it is at higher risk for STIs **[12]**, and its sexual behavior can significantly influence the spread of STIs to the majority population.

The first reported case of HIV infection in the Czech Republic appeared in 1985 **[13]**. Since then, 4,074 cases of this infection have been reported until the end of 2021. Furthermore, 773 of these cases progressed to the terminal stage of AIDS **[14]**. In the Czech Republic, there is still a significant difference in the incidence of HIV infection between men and women. E.g. according to the ECDC report for 2020, Czechia was still above the European Union (EU) average **[15]**. The Czechia continues to be above the EU average in the proportion of sex between men in the number of new cases (approx. 60 %) **[15]**, and this trend has been long-term since at least 2004 **[16].** One of the most recent surveillance estimates of the prevalence of HIV infection in the MSM subpopulation comes from 2009 and indicates a prevalence of 0.63 % (15-64 years) and 1.34 % (15-49 years), respectively **[17]**.

The research focuses on analyzing data from the implemented study on "Sexual behavior in a subpopulation of MSM before and during the COVID-19 pandemic". The research works with selected data on HIV infection, COVID-19, and vaccination against COVID-19 disease. The study's main aim was to provide information on the occurrence of the infections mentioned above and vaccination in the MSM subpopulation according to self-reporting obtained through a questionnaire survey and their possible determinants.

Methods

A descriptive cross-sectional study with primary data obtained from a questionnaire survey in the Czech Republic was implemented in October 2021, and the questionnaire was completed in March 2022. The implemented tool was an electronic online questionnaire using google. forms platform. The questionnaire was distributed via social networks (Facebook, Instagram, Grindr) and used the snowball method to obtain the highest possible number of respondents. This article used only some data from a large-scale questionnaire survey (focusing on the alteration of sexual behavior among MSM before and during the COVID-19 pandemic).

The questionnaire began with informed consent, accepting which the respondents agreed to participate in this study. The anonymous questionnaire consisted of a total of 5 sections, while only two areas (socio-demographic characteristics and additional questions) were used for this article. In the parts of the questionnaire used for the needs of this work, there were two open questions and 24 closed questions (25 including informed consent). The questionnaire was consulted with experts on the given topic to verify its adequacy and relevance. The questionnaire was pre-tested on a sample of MSM who were not included in the final model.

The data for this work was first extracted from the complete database obtained from the primary research and subsequently processed in the statistical program SPSS (version 23). Descriptive characteristics of the sample were calculated here, including the prevalence of the investigated infections (HIV and COVID-19) and vaccination against COVID-19. The prevalence of the occurrence of the disease based on the answers of the respondents is expressed as a percentage (proportion of positives within the entire sample). Because of the need for the classic prevalence rate, the denominator of the subpopulation of MSM is absent, which is only approximated for the subpopulation of homosexual men. Before implementing dependency testing, normal distribution was checked using the Shapiro-Wilk test. For statistical verification of the dependence of dependent variables (COVID-19, HIV, vaccination) on a given factor (residence, sexual identification, nationality, age, education, and economic activity), the ANOVA test was used, including Levene's test and the use of the multiple comparison ANOVA test (Sheffe test and Tu key-test). The Tukey test was used for conservatism, which does not allow the error probability α to grow uncontrollably. ANOVA was further used to test the null hypotheses arising from the defined research questions. In ANOVA testing, the dependent variables were HIV infection, COVID-19, and vaccination against COVID-19; the factors were age, education, nationality, residence, economic activity, and sexual identification. As part of hypothesis testing and verification of statistical significance, we worked with $p = 0.05$ and $p = 0.01$, respectively.

Results

A total of 717 responses were obtained, while 16 respondents did not provide informed consent and therefore were excluded from the study (2.2 %); thus, the study worked with 701 respondents (97.8 %). In **Table No. 1**, where the essential descriptive characteristics of the sample are listed, we can observe the age distribution of respondents according to defined age groups. The majority of respondents belonged to the age category 25-29 years (22.4 %), while the median age (by age group) was 25-29 years old. On the contrary, the age groups 65-69 and 75+ were the least represented group, in which there was no respondent. A total of 6 other age categories came under 5 % of the total number of respondents.

Most respondents achieved university education (33.1 %), followed by secondary education with a high school diploma (32.8 %). Respondents also performed a relatively high representation without completing primary education (4.9 %). The majority of respondents were Czechs (92.2 %), followed by Slovaks (5.8 %), Roma (1.1 %), and Poles (0.9 %). Other nationalities did not appear in the study. By place of residence, most respondents lived in a city (77.2 %), the least in a township (1.7 %), and in a village far from a larger city (8.0 %) at the time of filling out the questionnaire. More than half of the respondents (66.9 %) were employed when filling out the questionnaire, and almost a third (27.7 %) were studying. By sexual identity of the respondents, more than ¾ of them identified themselves as homosexuals (77.6 %). A relatively high representation was represented by heterosexual men (5.4 %). Only 0.6 % of respondents did not answer the question, and 1 % of respondents said they did not know what they sexually identify.

The first infection (COVID-19) was experienced by less than ½ of the respondents (44.7 %), with a total of 11.8 % of respondents stating the option "Possibly but not confirmed". Vaccination against COVID-19 infection was reported by 76.2 %. 24.3 % did not know their HIV status, 2 % did not want to answer, and 5.6 % of respondents stated they were positive.

Table No. 1: Descriptive characteristics of the sample of respondents, including the incidence of HIV infection.

				HIV							
Variable	**Category variable**	N	**%**	**Negative**	**%**	**Positive**	**%**	**I don't know**	**%**	**I do not want to answer**	**%**
Age	Less than 15	30	4.18	0	0	0	0	30	17.7	0	0
	15-19	64	8.93	20	4.18	0	0	44	25.9	0	0
	20-24	136	19	96	20.1	0	0	33	19.4	7	50
	25-29	157	21.9	144	30.1	0	0	13	7.65	0	0
	30-34	82	11.4	63	13.2	0	0	19	11.2	0	0
	35-39	65	9.07	46	9.62	0	0	19	11.2	0	0
	40-44	64	8.93	57	11.9	7	18	0	0	0	0
	45-49	33	4.6	20	4.18	13	33.3	0	0	0	0
	50-54	34	4.74	22	4.6	0	0	12	7.06	0	0
	55-59	13	1.81	6	1.26	0	0	0	0	7	50
	60-64	16	2.23	4	0.84	12	30.8	0	0	0	0
	70-74	7	0.98	0	0	7	18	0	0	0	0
Education	Unfinished basic	34	4.74	4	0.84	0	0	30	17.7	0	0
	Completed basic	58	8.09	20	4.18	0	0	38	22.4	0	0
	High school without high school diploma	125	17.4	82	17.2	0	0	29	17.1	14	100
	High school with high school diploma	230	32.1	167	34.9	7	18	56	32.9	0	0
	Higher professional	22	3.07	15	3.14	0	0	7	4.12	0	0
	University	232	32.4	190	39.8	32	82.1	10	5.88	0	0
Nationality	Czechia	646	90.1	441	92.3	39	100	152	89.4	14	100
	Slovakia	41	5.72	29	6.07	0	0	12	7.06	0	0
	Poland	6	0.84	0	0	0	0	6	3.53	0	0
	Rom	8	1.12	8	1.67	0	0	0	0	0	0
Residence	In the city	541	75.5	396	82.9	39	100	99	58.2	7	50
	In a village near a bigger city	92	12.8	59	12.3	0	0	33	19.4	0	0
	In the village far from the big city	56	7.81	11	2.3	0	0	38	22.4	7	50
	In the township	12	1.67	12	2.51	0	0	0	0	0	0
Economic activity	Pupil/student	194	27.1	114	23.9	0	0	80	47.1	0	0
	Not working	18	2.51	5	1.05	7	18	6	3.53	0	0
	Unemployed	7	0.98	0	0	7	18	0	0	0	0
	Household	13	1.81	13	2.72	0	0	0	0	0	0
	Employed	469	65.4	346	72.4	25	64.1	84	49.4	14	100
Sexual identification	Homosexual	544	75.9	434	90.8	33	84.6	70	41.2	7	50
	Bisexual	102	14.2	28	5.86	6	15.4	68	40	0	0
	Trans gay man	6	0.8	0	0	0	0	6	3.53	0	0
	I do not want to answer	4	0.6	4	0.84	0	0	0	0	0	0
	I don't know	7	1	0	0	0	0	7	4.12	0	0
	Heterosexual	38	5.3	12	2.51	0	0	19	11.2	7	50
COVID-19	Yes	313	43.7	218	45.6	27	69.2	61	35.9	7	50
	No	168	23.4	149	31.2	0	0	19	11.2	0	0

	I don't know	137	19.1	64	13.4	6	15.4	60	35.3	7	50
	Maybe, but it hasn't been confirmed	83	11.6	47	9.83	6	15.4	30	17.7	0	0
Vaccination for COVID-19	Yes	534	74.5	408	85.4	39	100	87	51.2	0	0
	No	167	23.3	70	14.6	0	0	83	48.8	14	100
In total		701	100	478	68.2	39	5.56	170	24.3	14	2

In terms of HIV infection **(table no. 2)**, the most affected age groups were the older age group 70-74, 7 (100 %) respondents reported HIV positivity, and a similar situation was in the 60-64 age group, where 12 (75 %) had HIV positivity. Among the more numerous age groups of respondents, the highest incidence of HIV infection was in the 40-44 age group (10.94 %) and 39.4 % in the 45-49 age group. These four age categories are the only ones in which the respondents indicated their HIV positivity. We see the opposite situation if we compare Table No. 1 and the "I don't know" values. Most respondents who stated that they do not know their HIV status appear in the younger categories, the most 15-19 (68.8 % of respondents in this age category). More than a fifth of respondents in the age categories 20-24, 30-34, and 35-39 did not know their HIV status.

Table No. 2: Incidence of HIV infection, COVID-19, and vaccination in the sample of respondents.

Variable	**Category variable**	**N**	**HIV**	**%**	**COVID-19**	**%**	**Vaccination**	**%**
Age	Less than 15	30	0	0	7	23.33	17	56.67
	15-19	64	0	0	28	43.75	45	70.31
	20-24	136	0	0	97	71.32	108	79.41
	25-29	157	0	0	62	39.49	128	81.53
	30-34	82	0	0	40	48.78	54	65.85
	35-39	65	0	0	10	15.38	40	61.54
	40-44	64	7	10.94	26	40.63	56	87.5
	45-49	33	13	39.39	11	33.33	33	100
	50-54	34	0	0	13	38.24	28	82.35
	55-59	13	0	0	6	46.15	6	46.15
	60-64	16	12	75	6	37.5	12	75
	70-74	7	7	100	7	100	7	100
Education	Unfinished basic	34	0	0	7	20.59	17	50
	Completed basic	58	0	0	21	36.21	32	55.17
	High school without high school diploma	125	0	0	34	27.2	66	52.8
	High school with high school diploma	230	7	3.04	142	61.74	180	78.26
	Higher professional	22	0	0	7	31.82	11	50
	University	232	32	13.79	102	43.97	228	98.28
Nationality	Czechia	646	39	6.04	284	43.96	491	76.01
	Slovakia	41	0	0	23	56.1	35	85.37
	Poland	6	0	0	6	100	0	0
	Rom	8	0	0	0	0	8	100
Residence	In the city	541	39	7.21	261	48.24	458	84.66
	In a village near a bigger city	92	0	0	32	34.78	50	54.35
	In the village far from the big city	56	0	0	12	21.43	18	32.14
	In the township	12	0	0	8	66.67	8	66.67
Economic activity	Pupil/student	194	0	0	107	55.15	158	81.44
	Not working	18	7	38.89	13	72.22	7	38.89
	Unemployed	7	7	100	7	100	7	100

	Household	13	0	0	4	30.77	5	38.46
	Employed	469	25	5.33	182	38.81	357	76.12
Sexual identification	Homosexual	544	33	6.07	284	52.21	456	83.82
	Bisexual	102	6	5.88	23	22.55	60	58.82
	Trans gay man	6	0	0	0	0	6	100
	I do not want to answer	4	0	0	0	0	0	0
	I don't know	7	0	0	0	0	0	0
	Heterosexual	38	0	0	6	15.79	12	31.58

Most persons with a university education (13.8 %) reported their HIV positivity, followed by persons with a high school diploma (3.0 %) with the highest achieved secondary school education. Only Czechs said their HIV positivity in 6.0 %, while all of them were from the city (7.2 %). According to economic activity, 100 % of unemployed respondents, 38.9 % of people who did not work, and 5.3 % of employed respondents reported HIV positivity. Regarding sexual identification, 6.1 % of homosexually identified respondents and 5.9 % of bisexually identified respondents indicated their HIV positivity. The disease of COVID-19 was most reported in the age group 70-74 years (100 %) and 20-24 years (71.3 %), then 30-34 years (48.8 %), and 55-59 years (46.2 %). On the contrary, the least in the age groups of 35-39 years (15.4%). According to education, there were significantly more minor differences compared to HIV infection; most respondents reported confirmed COVID-19 with a high school diploma, 64.7 %, on the contrary, the least among people without completed primary education was 20.6 %. Compared to HIV infection, COVID-19 was not only concentrated in cities but was most commonly reported among township residents (66.7 %). As in the case of HIV infection, COVID-19 occurred most among unemployed persons (100 %), followed by those who were not working (72.2 %). The highest vaccination rate against COVID-19 was in the 45-49 and 70-74 age group (100 %), and the lowest in the 55-59 age group (46.2 %). According to education, the highest vaccination rate was 98.3 % among university-educated persons, the lowest among persons with a higher professional education and who did not complete elementary school (50 %). Vaccination was higher among people from cities (84.7 %) and lowest among people from villages far from cities (32.1 %).

ANOVA statistics revealed statistically significant differences between individual groups (factors) for selected dependent variables (sociodemographic characteristics). In **table no. 3**, we can observe these differences according to individual factors. We can see that the following factors had a statistically significant effect on the occurrence of HIV (indicating HIV positivity in the questionnaire) at the significance level of $p = 0.05$: age, education, place of residence, and economic activity. Conversely, nationality ($F = 1.627$, $p = 0.198$) and sexual identification ($F = 2.155$, $p = 0.092$) were found to be non-significant.

Even for the second examined dependent variable (COVID-19), a statistically significant effect of nationality was not demonstrated ($F = 1.641$, $p = 0.195$). Unlike HIV infection, no effect of residence was demonstrated ($F = 0.945$, $p = 0.419$), and all other factors (age, education, economic activity, sexual identification) had a statistically significant effect on the incidence of COVID-19 infection (indicating a positive test).

In **Table No. 3**, we can further observe that all monitored factors had a statistically significant effect on vaccination against COVID-19 infection at the significance level of $p = 0.05$.

The results of the Post Hoc Tests (multiple comparisons ANOVA) using the Tukey test can be seen in Appendix No. 1. The differences within individual categories of factors are demonstrated. Only statistically significant factor categories are shown in the above appendix.

The thesis verified the established hypotheses about differences between individual factors for individual monitored dependent variables and answered the research questions.

Table No. 3: ANOVA test for dependent variables HIV, COVID-19, and vaccination against COVID-19 infection.

ANOVA				
Dependent variable	**Factor**	**df**	**F**	**p-value[1]**
HIV	Age	10	56.016	*<0,01*
	Education	5	5.85	*<0,01*
	Nationality	2	1.627	0.198
	Residence	3	2.671	*0.047*
	Economic activity	4	47.946	*<0,01*
	Sexual identification	3	2.155	0.092

COVID-19	Age	11	8.608	*<0,01*
	Education	5	22.957	*<0,01*
	Nationality	2	1.641	0.195
	Residence	3	0.945	0.419
	Economic activity	4	6.618	*<0,01*
	Sexual identification	4	6.542	*<0,01*
Vaccination for COVID-19	Age	11	4.55	*<0,01*
	Education	5	33.418	*<0,01*
	Nationality	3	8.096	*<0,01*
	Residence	3	41.405	*<0,01*
	Economic activity	4	7.545	*<0,01*
	Sexual identification	5	26.755	*<0,01*

Discussion

The study focused on the incidence of HIV infection, COVID-19, and vaccination against disease with COVID-19 in the subpopulation of MSM based on a questionnaire survey implemented in 2021. The descriptive cross-sectional study worked with part of the data from research on sexual behavior alteration among MSM during the COVID-19 pandemic and before it started. A total of 717 respondents were obtained, but 701 provided informed consent to participate. The median age of the research was the age group of 25-29 years. The subpopulation studied was MSM, which consisted of 77.6 % homosexually identifying men.

44.7 % of respondents have experienced COVID-19, which is more than ten times more than the proportion in the Czech population (3.6 %) **[9, 10]**. This significantly higher share is probably associated with the age of the majority of respondents. Young people were less susceptible to fear of COVID-19 than older age groups **[18,19]**. They were less afraid to re-establish social contacts and less compliant with measures to prevent the spread of COVID-19, probably due to lower trust in government implementation **[20]**.

In the observed sample of respondents, vaccination with at least one dose against COVID-19 was reported in 76.2%, which is again higher than vaccination in the Czech Republic (62.4 % for at least one dose) **[21]**. This fact is also probably related to the prior age group included in the study, as young people have a more positive attitude towards vaccination than older age groups **[22]**. The highest vaccination coverage was reported in the group of MSM with university education (98.3 %) and, on the contrary, the lowest among persons with higher professional education and not having completed elementary school (50 %), this fact corresponds to a positive attitude to vaccination depending on education **[23,24]**.

Almost a quarter of respondents did not know their HIV status, with ignorance of their HIV status being significantly higher in younger age groups. This fact is probably related to the attitude and knowledge regarding HIV infection and the fear of it. In the Czech Republic, the issue of HIV/AIDS is still partly taboo and poorly understood and presented in Czech education. These factors can lead to fear of testing or, conversely, to the absence of fear of this infection. In any case, this ignorance can be a significant risk factor for the spread of HIV infection. In total, 5.6 % of respondents reported their HIV positivity, whereas, in the same MSM population observed in another study (EMIS) from 2009, only 2.68 % reported HIV positivity **[17]**. An increase in the reporting of HIV positivity is not necessarily associated only with an increase in the prevalence of HIV infection in the MSM subpopulation. But it can also be a consequence of improving transparency. And a result of the gradual reduction of the taboo nature of this topic. And the decline of stigmatization of HIV-positive persons. Most persons with higher education reported their positivity, and education is often cited as a protective factor against HIV infection **[25]**. The fact that people with higher education stated their positivity is probably more associated with the level of knowledge about this issue and specific attitudes towards this infection, which is also related to lower stigmatization and taboo **[26]**. The fact that all respondents who stated that they were HIV positive lived in the city is probably related to the reduced level of stigmatization and greater anonymity. The differences in reported HIV prevalence rates suggest the need to implement a cross-sectional study focusing on HIV testing in this subpopulation to describe better the epidemiologic situation of HIV infection in the MSM subpopulation.

The limitation of the study is mainly in the non-representative selection of the sample using social networks and the snowball method. As a result, it could not be ensured that the respondents met the study's inclusion criteria. Another limitation is the imbalance in the age representation of the respondents. Most respondents were younger, i.e. people more connected to life on social networks. In contrast, older age groups with limited access and ability to function on social networks had a more challenging time and were less likely

to access the questionnaire. The generalization of the study results is thus considerably limited; the results should be interpreted with caution, given the need to implement more representative research to test for HIV infection in the MSM subpopulation.

Conclusion

Research focusing on data from a questionnaire survey in the MSM subpopulation analyzed data from 701 respondents. The work identified a statistically significant influence of the experimental factors: age, education, and economic activity on all dependent variables (HIV infection, COVID-19, and vaccination against COVID-19). Furthermore, it was found that almost ¼ of young MSM, in particular, do not know their HIV status, while this knowledge increased with age. A relatively high prevalence of HIV (5.6 %) was identified, especially among persons identifying as homosexuals and bisexuals. Although the prevalence of COVID-19 is statistically significantly determined by age, there is no apparent trend. The work further shows that higher education is associated with vaccination against COVID-19.

The results of the work should contribute to a better description of the current situation after the global pandemic of the COVID-19 infection within the subpopulation of MSM, which is still a key subpopulation for sexually transmitted diseases, especially HIV infection.

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Appendix

Appendix No. 1**:** Post Hoc Test (Multiple Comparison) Tukey HSD for dependent variables (HIV infection, COVID-19 and vaccination against COVID-19), selected sociodemographic factors and their categories.

Post Hoc Test (Multiple Comparison) Tukey HSD				
Dependent variable	**Factor**	**Monitored factor category**	**Factor category**	**p - value**
HIV	Education	University	High school without high school diploma	0.000
			High school with high school diploma	0.001
	Economic activity	Not working	Pupil/student	0.000
			Unemployed	0.001
			Household	0.000
			Employed	0.000
		Unemployed	Pupil/student	0.000
			Not working	0.001
			Household	0.000
			Employed	0.000
		Pupil/student	Employed	0.045
COVID-19	Education	High school without high school diploma	Unfinished basic	0.002
			Completed basic	0.000
			High school with high school diploma	0.000
			University	0.000
		Higher professional	Unfinished basic	0.004
			Completed basic	0.003
			High school with high school diploma	0.000
			University	0.046
		University	High school with high school diploma	0.000
	Economic activity	Pupil/student	Employed	0.001
		Household	Pupil/student	0.005
			Unemployed	0.014
	Sexual identification	Homosexual	Trans gay man	0.004
			I do not want to answer	0.030
Vaccination for COVID-19	Education	High school with high school diploma	Unfinished basic	0.001
			Completed basic	0.001
			High school without high school diploma	0.000
			Higher professional	0.013
			University	0.000
		University	Unfinished basic	0.000
			Completed basic	0.000
			High school without high school diploma	0.000
			High school with high school diploma	0.000
			Higher professional	0.000
	Nationality	Poland	Czechia	0.000
			Slovakia	0.000
			Rom	0.000
	Residence	In the city	In a village near a bigger city	0.000
		In the village far from the big city	In the city	0.000
			In a village near a bigger city	0.005
			In the township	0.030

	Economic activity	Not working	Pupil/student	0.000
			Unemployed	0.010
			Employed	0.002
		Household	Pupil/student	0.003
			Unemployed	0.015
			Employed	0.012
	Sexual identification	Homosexual	Bisexual	0.000
			I do not want to answer	0.000
			I don't know	0.000
			Heterosexual	0.000
		Bisexual	I do not want to answer	0.039
			I don't know	0.002
			Heterosexual	0.004
		Trans gay man	I do not want to answer	0.001
			I don't know	0.000
			Heterosexual	0.001