Study of Internalized Homonegativity

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ECOM

STUDY OF INTERNALIZED HOMONEGATIVITY (INTERNAL HOMOPHOBIA)

ANALYTICAL REPORT

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Contents

List of Abbreviations

(95%) CI	95% confidence interval
CEECA	Countries of Central and Eastern Europe and Central Asia
(MG)CFA	(Multi-group) confirmatory factor analysis
DK	Don't know
ECOM	Eurasian Coalition on Male Health
HIV	Human Immunodeficiency Virus
IH	Internalized homonegativity
LGB(TI)	Lesbian, gay, bisexual (trans and intersex) people
MSM	Men who have sex with men
N	Number of respondents
NGO	Non-governmental organization
OR	Odds ratio
SIHS	Short Internalized Homonegativity Scale
SO	Sexual orientation
STI	Sexually-transmitted infection

Acknowledgements

Summary

Goals and design of the study. Internalized homonegativity (IH) is an important factor related to the poor health of MSM and their inadequate access to relevant services. IH can be defined as a negative attitude towards one's own homosexuality, adopted by MSM themselves in homophobic societies. Existing studies unequivocally suggest that IH is a barrier to HIV testing, coverage of HIV prevention services, and to participation in the work of organizations assisting gay and bisexual men. There is also mixed evidence that IH directly or indirectly contributes to risky sexual practices among MSM. However, very little research on this topic has been conducted in the CEECA region.

The Eurasian Coalition on Male Health (ECOM) initiated this study in order to systematically examine the level of IH and its links with MSM health, HIV prevention, and possible mobilization for the right to health advocation.

A cross-sectional online survey was conducted from Aug 12 to Oct 2, 2017. It covered MSM in 12 countries: Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Lithuania, Macedonia, Moldova, Russia, and Ukraine. Data collection was also planned in Tajikistan, but the number of respondents from there was insufficient. Survey promotion was counducted via dating services, such as Hornet, BlueSystem.org, and Grindr, as well as via partnering websites and NGOs. The final analytical sample comprised 8,239 respondents. More than half of those surveyed were from Russia, large enough samples were in Belarus and Ukraine. In the rest of the countries, very few MSM were successfully surveyed (from 54 to 223 participants per country). We used convenience sampling, therefore the sample is not statistically representative of these countries' MSM populations.

Approximately two-thirds of the sample consisted of gay men, another quarter were bisexual men, and up to 10% did not define themselves in these terms. The overwhelming majority of respondents were young, highly educated, economically active, non-religious residents of large cities, who have never been married. In addition, in countries with a small sample size, there was a bias towards participants of NGOs for gays and bisexuals, due to the recruiting.

Internalized homophobia and its associations with health, HIV prevention, and mobilization for the protection of the right to health. The average level of IH among respondents in all countries was low. Acceptance of homosexuality in general and one's own homosexuality was relatively common. It is very likely that men who have a harder time dealing with the fact that they are not heterosexual are less likely to meet other men through the Internet, participate in NGOs for gays and bisexuals, and to participate in such studies. Therefore, this study may underestimate the actual level of IH.

In addition, there were significant, though not very substantial, differences between countries. The lowest level of IH was observed among respondents from Macedonia and Lithuania/Estonia (which we combined for analysis). The relatively highest level of IH was recorded in Kyrgyzstan, Kazakhstan, and Russia.

A higher level of IH was observed among bisexuals, heterosexuals, and other respondents not identifying as homosexual, as well as among those who are less out to others about

their preference for men. In addition, there was a significant positive correlation between religiosity and IH in approximately half of the countries.

As a result of the study, the Short Internalized Homonegativity Scale (SIHS), one of the most popular methods for measuring IH [1], was tested and validated. Our adaptations of the scale can be used in future studies.

A direct association between IH and the use of condoms during the last anal sex was not revealed. We indicated a number of potential mediating relationships that were differently directed, and should be examined in more detail.

At the same time, a higher level of IH correlated with worse coverage by HIV prevention activities. It reduces the likelihood of knowing where to get tested for HIV, and HIV testing in the past 12 months. In addition, it is related to reduced likelihood to get the most of services MSM need, including standard ones, such as free condoms or information about HIV and sexual health.

IH also reduces the likelihood and willingness to participate in the work of organizations for gay and bisexual people. It also reduces support for the protection of the rights for LGBT and participation to protect LGBT from discrimination and violence.

Other results. Respondents' answers regarding sexual behavior, HIV testing and HIV status, coverage by prevention services, participation in NGOs, and the protection of rights are of particular interest. The distribution of answers for individual countries is provided whenever it makes sense. Differences are often significant.

About a half of the respondents from Macedonia, the Baltic countries, Moldova, and Kyrgyzstan had sex with a steady partner last time, and about a half had it with casual partners. In the other countries, respondents mostly reported that their last sexual contact was with a casual partner. The majority of respondents reported having from 0 to 3 casual partners in the last six months. Having a steady partner, respondents had fewer casual partners. Commercial sex experience was also relatively common.

The use of condoms during the last anal sex remains insufficient. It varies considerably between countries and ranges from 50 to 82% with all partners. It is somewhat higher, if only sex with casual partners is considered. There are continuing problems with access to condoms. Depending on the country, 60–70% of respondents never had problems with it, while up to 10% had such problems in the last month.

Consuming alcohol during sex may be considered rather infrequent. As a rule, more than a half of respondents either did not consume alcohol or consumed it very rarely in the past six months. However, those who often or always consumed alcohol during sex extend to use a condom less often, including with casual partners.

Not all, but the majority of respondents in nearly all countries know where to get tested for HIV. At the same time, not all respondents have been tested in the past year (from 42 to 66%). The HIV prevalence among those who had undergone HIV testing and knew the results ranged from 4 to 12% depending on the country.

As for the provision of services for MSM by NGOs, we should begin with very uneven and generally insufficient access to these organizations. From 16% (in Russia) to 70% (in

Macedonia) of respondents knew of a relevant organization in and around. At the same time, the accessibility of NGOs among the countries with small samples is probably overestimated.

According to that, the coverage of services for MSM is inadequate and very uneven. The services most commonly provided are information about HIV, STIs, and sexual health, HIV testing, and the distribution of free condoms and lubricants.

It should be noted that there seems to be a huge unsatisfied demand for services less commonly provided, such as the organization of joint celebrations, or legal consultations. The majority of answered that they did not received such services, but would like to.

There is a noticeable, untapped potential for MSM to participate in organizations for gay and bisexual people and to advocate for LGBT rights. The most common individual manifestations of LGBT activism included signing petitions, and providing assistance to LGBT people who suffered from violence or discrimination. However this potential is likely to differ greatly between countries.

Besides associations with IH, the following factors should be mentioned.

In all cases, an accessible organization for gays and bisexuals had a notable positive effect. Living outside of the capital city had a negative effect. Lack of higher education was associated with a lower probability of using a condom or undergoing HIV testing, but, rather paradoxically, with a higher likelihood of receiving virtually all services.

The use of a condom during the last anal sex was less likely with a steady partner. Other factors that also reduced the likelihood of condom use were lack of condoms (when a condom was not on hand, and when respondents did not receive condoms from NGOs), and frequent or constant consumption of alcohol during sex.

Knowing where to get tested, as well as living alone, additionally increase the likelihood of HIV testing in the previous 12 months. However, being bisexual and concealing one's sexual orientation from others reduced it.

Respondents who conceal their sexual orientation from others were less likely to receive the most of the services. Older respondents were also less likely to get them. Taking into account associations with education, it is possible that older and more affluent MSM are less inclined to go to NGOs for services.

Besides these relationships, there were significant differences between countries. Condom use was lower in Azerbaijan and higher in Georgia. Respondents in Armenia, Azerbaijan, the Baltic countries, and Ukraine were less likely to know where to have an HIV test. In Belarus, Kazakhstan, the Baltic countries, and Ukraine, respondents were less likely to have recently had an HIV test. On the other hand, service coverage was better in Ukraine and Kyrgyzstan.

Recommendations   In order to reduce internalized homonegativity and its effects on the provision of health services for MSM, it is necessary to:

1. Legally prohibit discrimination on the basis of sexual orientation in all spheres, and ensure its implementation in practice. In the longer term, it is necessary to aim for the legalization of same-sex unions. This should be supported by campaigns to reduce sexual prejudice in society.

2. HIV service and LGBT human rights movement should consolidate their efforts and resources for joint advocacy actions against homonegativity and heterosexism.

3. For IH reduction at individual level, widespread psychological consulting for acceptance of own sexuality is necessary. MSM organizations might also think about other services that could potentially diminish IH.

Other recommendations

1. It is necessary to improve the coverage of prevention programs, including the most standard ones, such as the free distribution of condoms. Insufficient access continues to be a problem irrespectively of IH.

2. Encourage more MSM to participate in LGBT organizations and to support LGBT rights protection.

3. Special attention should be paid to the MSM population in Azerbaijan, at least in the capital city. The current situation is dire and demands urgent measures to combat the outbreak of the HIV epidemic and inadequate prevention.

4. The analytical potential of the data collected in this study should be used further. In particular, it could be used to analyze indirect links between IH and risky practices, factors affecting service provision and demand for services, and protection of LGBT rights and LGBT activism. In particular, this applies to Belarus, Russia, and Ukraine that yielded relatively large samples.

5. Conduct additional studies to clarify the links between IH and the number of sexual partners (both steady and casual), drug use, chem sex, and compulsive sexual behavior. Longitudinal and/or bio-behavioural studies will allow to infer about casual relations of IH and MSM health.

1. Introduction

Access to HIV prevention services among men who have sex with men and trans people continues to be disproportionately low in Central and Eastern Europe and Central Asia. Recognizing the difficult situation, the Eurasian Coalition on Male Health initiated a regional program "Right to Health: Community Actions to Increase Access of MSM and Transgender People to HIV Services in Central and Eastern Europe and Central Asia".

Poor health and lower levels of access to appropriate services among MSM are associated with a number of social and psychological factors. Internalized homonegativity (IH), also known as internal (internalized) homophobia, can be considered a central factor among them.

IH is a negative attitude towards one's own homosexuality [2, 3]. It occurs when MSM adopt and share predominant negative views and attitudes towards homosexuality. Widespread heterosexism and prejudices influence everyone in a society, including LGBT, who may disapprove of same-sex attraction and of themselves personally, as a person with such drives.

A large amount of research, primarily conducted in the US and Western Europe, clearly indicates that IH is a barrier to HIV testing, coverage by HIV prevention services, and participation in the work of organizations for gay and bisexual people. There is also some evidence that IH contributes to risky sexual practices among MSM (see Chapter 4).

IH should be a serious problem in the CEECA region, as the legal situation for MSM as a whole is quite unfriendly [4]. In a rating of the equality of rights for LGBTI people in 49 countries of Europe, the majority of Eastern European countries occupy lower rankings (Fig. 1.1). The attitudes towards homosexuality that key social services' provides in the region have are predominantly negative [5]. Prejudice against homosexuality is also much more prevalent in the region when comparing the general population of post-socialist countries with the rest of the European population [6, 7]. However, there have only been some studies of IH in individual countries in CEECA. Often, IH is not even recognized as a problem.

Therefore, ECOM initiated this study to examine IH in the region and its links with the health of MSM, HIV prevention, and potential mobilization for rights advocacy.

A cross-sectional Internet survey was counducted in 2017 and covered MSM in 13 countries of the region. Data from 12 countries is analyzed in this report.

In addition to IH data, results on the condom use, the number of sexual partners, consumption of alcohol during sex, HIV testing and HIV status, participation in the work of NGOs, obtaining services for MSM, and support for LGBT rights protection and LGBT activism are of of particular interest.

We tried our best to present the results in the context of individual countries, for data differed significantly between them. We hope that it will be useful in the planning and implementation of programs aimed at improving the health of MSM in each of these countries.
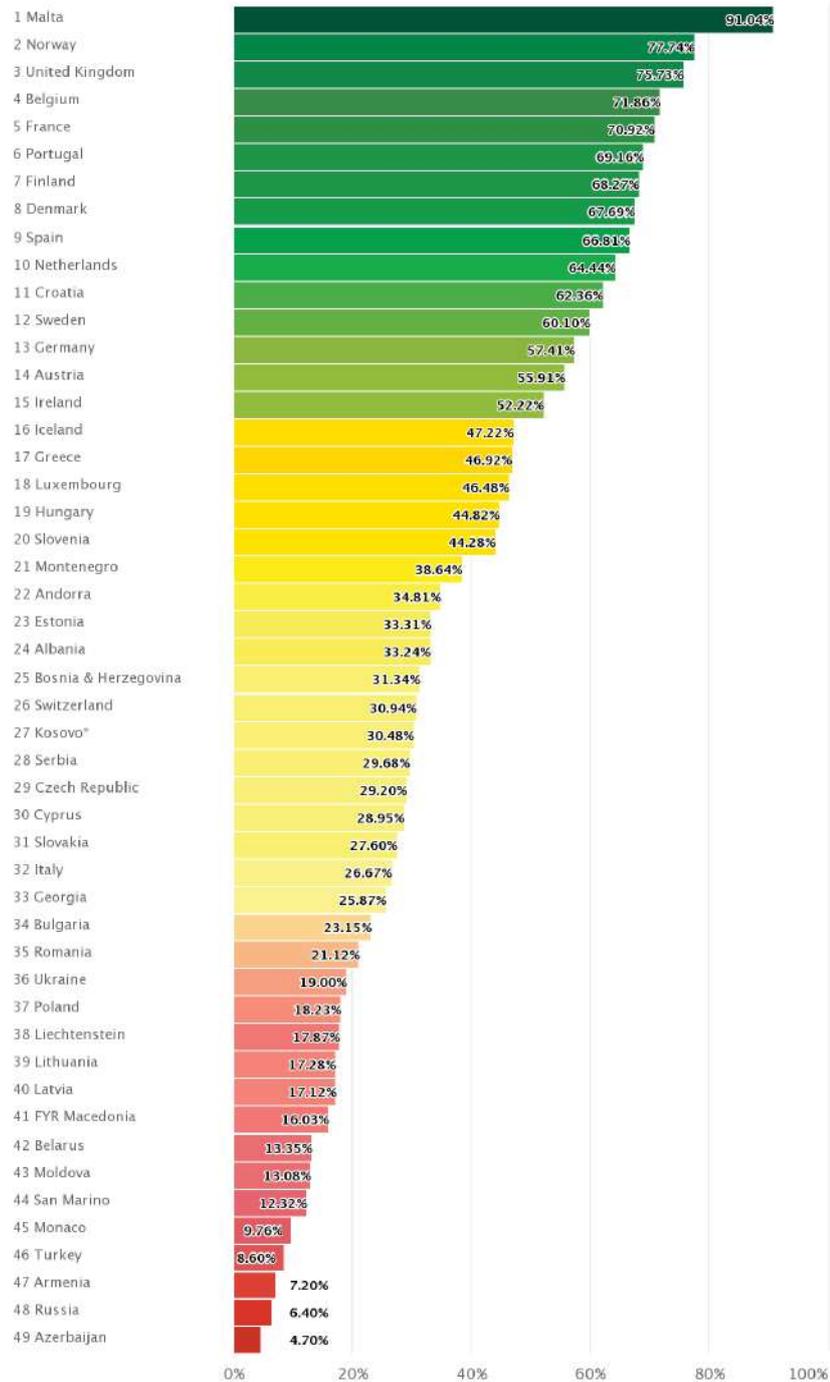
Figure 1.1: Countries of Europe, ranked according to the LGBTI rights equality index (*0% — gross violations of human rights, discrimination; 100% — respect for human rights, full equality*): `https://rainbow-europe.org/country-ranking`, last visited: 27.02.2018

2. Data and Methods

2.1. Study Design

Internet Survey. We conducted a cross-sectional Internet survey of MSM using a standardized questionnaire. Potential respondents were recruited through web applications and dating web-portals for gays and bisexuals, as well as through MSM-service organizations and informal networks. Those, who agreed to participate in the survey, filled out on the online service VirtualExS.ru.

Countries. The survey was conducted in 13 CEECA countries: Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Lithuania, Macedonia, Moldova, Russia, Tajikistan, and Ukraine.

Selection. MSM and men who are attracted to other men made up the general population. Selection criteria for participation included: self-identification as a man; having sex with men or being sexually attracted to men; permanent residence in one of the 13 countries of the study; a respondent has not participated in this survey yet (or has not completed it).

Initially, one of the criteria was the use of at least one of same-sex online dating services. In practice, the overwhelming majority of respondents fulfilled this criteria. However, a small number were also recruited through NGOs working with gay and bisexual people.

The sample design was convenience sampling. Since this selection method is not stochastic, *the sample was not assumed to be representative* of MSM populations in CEECA countries. Currently, we are not aware of a way to do nationally representative sampling of MSM. Such a selection is the maximum possible approximation to probabilistic selection under the given conditions.

2.2. Questionnaire

Content. The questionnaire contained 51 questions related to the following (not in the order found in the questionnaire).

The Short Internalized Homonegativity Scale (SIHS) is comprised of eight statements. It is a development of the Reactions to Homosexuality Scale authored by Ross and Rosser [1, 3, 8, 9, 10]. For more details see Section 4.4.

HIV Testing — three questions that are simplified forms of standard questions about HIV testing and status in sentinel surveillance studies of key populations (for example, [11]).

LGBT activism — constructed on the basis of a widespread scale of political participation, which is used, for example, in the European Social Survey (see `http://www.europeansocialsurvey.org/`).

The item on religiosity is also taken from the European Social Survey.

The European MSM Internet Survey [12] is the source of the wordings for the homonegativity scale, informed consent, and questions about gender identity and sexual orientation.

A number of other questions are standard (primarily socio-demographical questions).

The master questionnaire was developed in Russian. To pilot the questionnaire, 5 interviews were conducted with MSM, who had different sexual orientations (homosexual or bisexual), HIV statuses, and higher education levels (higher education or no higher education). The respondents were Kyiv office staff members of a public organization "Alliance.Global", one of the leading HIV and MSM-service organizations in Ukraine.

Languages and Translation. Based on open source statistics on the prevalence of the languages in the surveyed countries, the questionnaire was translated into 13 languages: Armenian, Azerbaijanian, Estonian, Georgian, Kazakh, Kyrgyz, Lithuanian, Macedonian, Romanian, Russian, Tajik, and Ukrainian. There was also an English version. We considered the use of Belarusian unnecessary, since surveys, as a rule, are conducted in Russian in Belarus.

The master questionnaire was developed in Russian and translated into English. Both versions were provided for further translations. The translations were performed by qualified employees of ECOM's network organizations, or by professional translators depending on the available options. When looking for external translators, preference was given to those who have worked on MSM or LGBT issues. When available, external reviewers were used. If they had any comments about the translation, they were discussed with the translator, and, if accepted, the translator made necessary corrections.

2.3. Ethical Considerations and Confidentiality

Before the survey, all respondents should have read the text of informed consent in the language they selected. Only after a respondent had indicated that he read, understood, and accepted the conditions of the survey, was he directed to the survey itself. Otherwise, the session ended.

The informed consent section presented some information about the study, its goals, timeframe, and ECOM, as well as contact information that respondents could use if any questions arose.

It also indicated that the survey was confidential. The IP address of the respondent's computer/device was not recorded, nor were any cookies used.

We asked respondents to indicate their email, name, or nickname, in order to allow us to repeat the survey in two years using the same sample. Providing this information was entirely voluntary. The corresponding information was separated from the final data array and stored separately. Only two of the survey coordinators had access to this information.

The only mandatory questions were ones concerning the respondent's preferred language, country of residence, gender identity, and whether the respondent had been surveyed earlier. Answering the remaining questions was voluntary. Participants could stop the survey at any time without repercussions. Survey participation was not paid.

2.4. Data Collection

Dates and Obtained Sample. The survey was open for data collection from Aug 12 to Oct 2, 2017. A total of 13,760 respondents visited the survey page and began responding to the survey.

Only those who met all of the criteria listed below were included in the analytical sample: accepted the informed consent statement; indicated one of the 13 countries as their country of residence; indicated their gender as male, not as female, trans or other[1]; completed the survey in full, but had not already completed it at an earlier time.

The volume and dynamics of recruiting through different channels are reflected in Fig. 2.1.

Due to technical reasons, it was not possible to fully separate the respondents from BlueSystem.org and those from Grindr. We can assume the maximum possible number of people recruited through the latter by taking into account the late start of advertising. The proportion of participants recruited through each channel is shown in Fig. 2.2.

Distributions by Country and Language. As mentioned above, MSM from different countries were very unevenly represented in this survey. Respondents from Russia accounted for more than half of all respondents, 5,252 in total (Fig. 2.3). In Ukraine, 1,365 MSM completed the survey, which also provides decent coverage. Belarus had a significant sample with a coverage of nearly 500 gays and bisexuals.

Unfortunately, the coverage in the other countries was a bit worse. In six of the countries, only 100 to a little more than 200 participants were surveyed (Fig. 2.3), which is sufficient to meet the formal requirements for a sample size for analysis of simple associations. However, in a number of cases, such a sample is insufficient, i. e. when the indicators have many missing values, when their answers are distributed unevenly, or when there are more than three of them. Moreover, extrapolating the results onto the general MSM population of these countries must be done with great caution.

The four countries with less than 100 respondents were dealt with as follows. Estonia and Lithuania were analyzed together in most cases. These countries have different cultural roots, but, at the same time, are in the same Baltic region, and are parts of the European Union, which should create similar conditions for the LGBT community acceptance level. Preliminary analysis also showed that the respondents from Lithuania and Estonia answered similarly in most cases.

Answers from Moldova and Macedonia are considered for one-dimensional descriptive analysis only, not always though. We decided not to consider Tajikistan at all, as there were less than 30 respondents from there. It makes no sense to combine Tajikistan with other countries, since this would not substantially increase the sample size of Kyrgyzstan, for example, while issues of socio-cultural characteristics would still remain.

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[1] The total number of trans people participating in the survey was around 100 people. A separate analysis of this group might be of interest
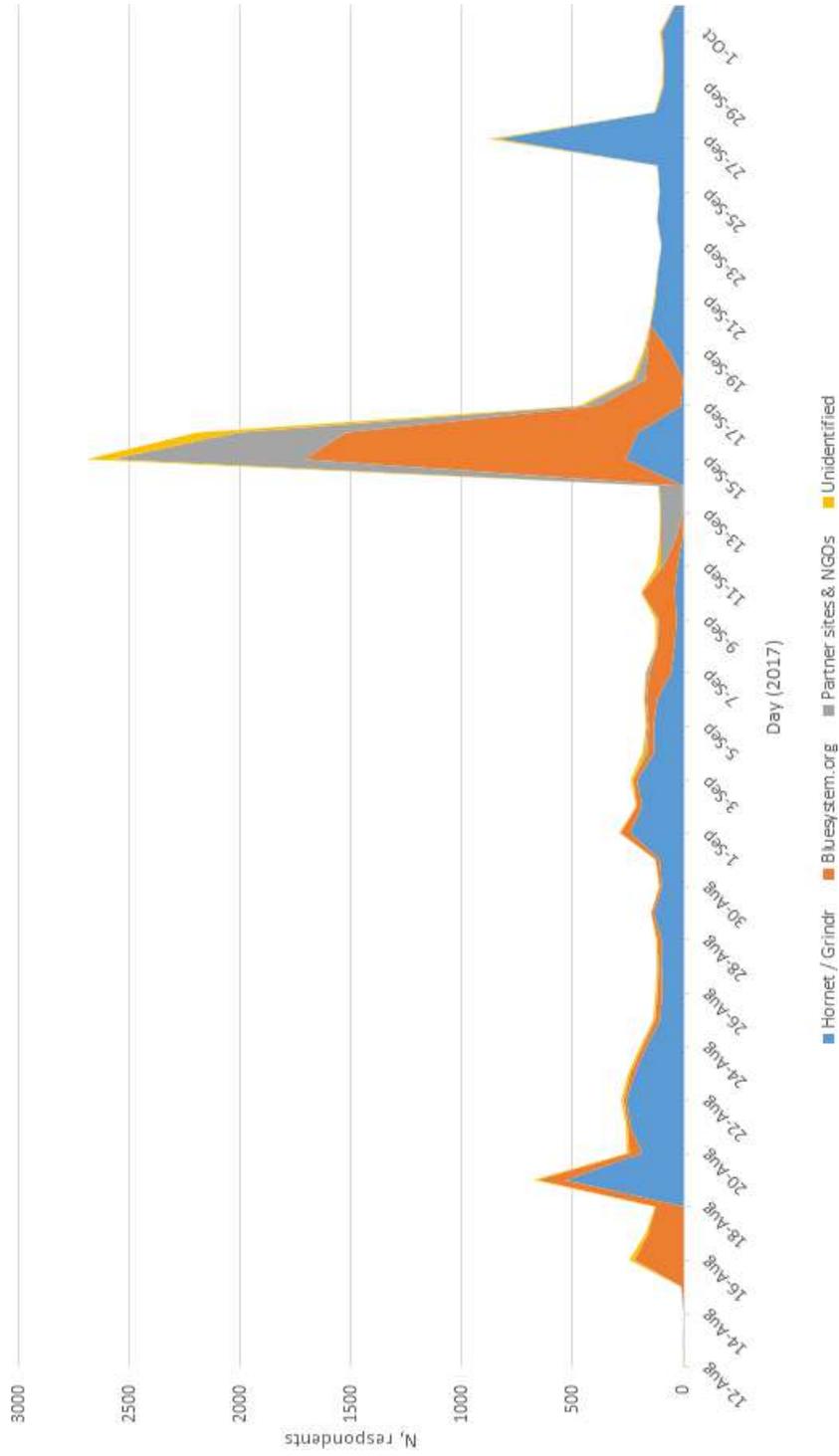
Figure 2.1: Quantity and dynamics of the selection of respondents recruited to participate in the survey by recruiting channel (*All respondents who proceeded to the survey are considered, N = 13760*)
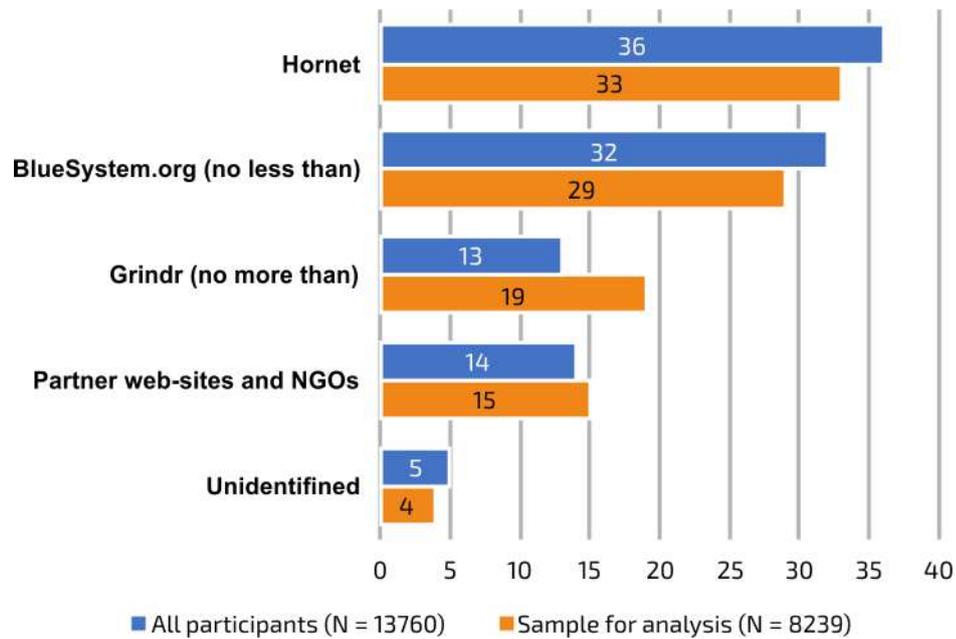
Figure 2.2: Distribution of survey participants, recruited through various channels, %
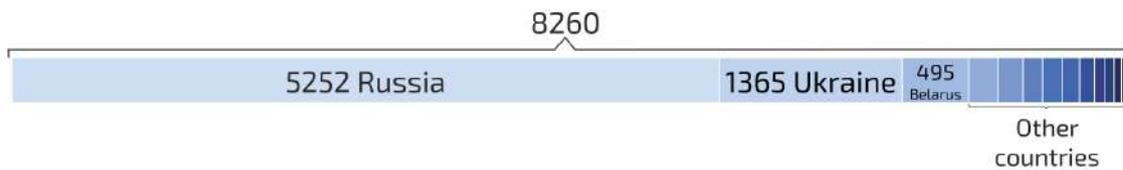
Figure 2.3: Number of respondents from individual countries

Even more impressive is the prevalence of Russian language, which continues to be the de facto main language of international communication in the territory of the former USSR (Fig. 2.4). Out of 8,260 respondents, 7,147 or 87%, completed the questionnaire in Russian.

Figure 2.4: Distribution of respondents by questionnaire language

Language situation by countries appears as shown in Fig. 2.5. In Russia, Belarus, and Kazakhstan, the survey was completed exclusively in Russian. Russian also dominated in Kyrgyzstan, Moldova, Estonia, but in Ukraine 35% used Ukrainian.
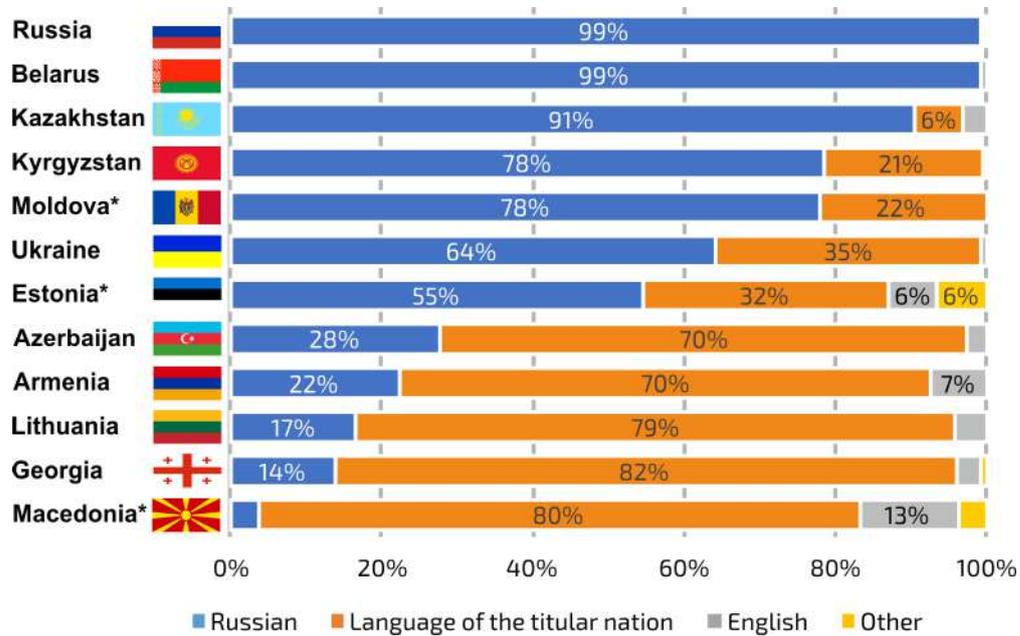
Figure 2.5: Language used in the survey by countries, % (* $N < 100$)

In the countries of the South Caucasus, Lithuania, and Moldova, the participants usually used the language of the titular ethnic group.

English was sometimes used by respondents in Macedonia, Armenia, Estonia, Lithuania, Georgia, Kazakhstan, and Azerbaijan. A small number of respondents used a language different from the language of the titular ethnic group, Russian or English ("Other" category). For example, in Estonia 6% answered in Armenian, Azerbaijanian, Romanian, and Ukrainian.

Despite the general prevalence of Russian, the translation of the questionnaire into other languages was justified outside of Russia, particularly for Armenian, Georgian, Azerbaijanian, and Lithuanian. At the same time, too few respondents used Kazakh, Kyrgyz, Estonian, Romanian, and Tajik. One can assume that, in these countries, MSM not identifying themselves as Russians were not sufficiently represented in the study.

Thus, countries' coverage was extremely uneven. More than half of the respondents resided in Russia. A noticeably smaller number of respondents (but still sufficient for research purposes) lived in Ukraine and Belarus. In Russia and Ukraine, we also seem to have different categories of MSM represented according to some social-demographic parameters (see Chapter 3). Other countries were represented worse.

In addition, the proportion of respondents who completed the questionnaire in Russian raises the following questions: how well were those MSM represented who were neither Russians or the Russified? How evenly were different regions of some countries represented?

This applies to Kazakhstan, Kyrgyzstan, Moldova, Ukraine, and Estonia. An additional possible explanation for this is the fact that more than 80% of respondents lived in large cities, mainly the capitals, which were more Russified during the USSR era.

Unintended Events. After the second round of survey promotion (links from privat messages) on Hornet, there was a very large, short-term influx of potential respondents. The server VirtualExS.ru could not process all requests. Around 6,000 attempts to complete the survey failed on the night of Sept 15–16, 2017. This could mean that some possible respondents were not able to participate in the survey. On the other hand, we hope that this number was not very large, as one participant could send several requests or could also take the survey the following day.

Future Participation in a Similar Survey. The survey follow-up is planned for 2019. It will be longitudinal if possible. Therefore, we asked respondents whether they would like to participate in a similar survey in 2 years, and if so, to provide their e-mail address (Fig. 2.6).
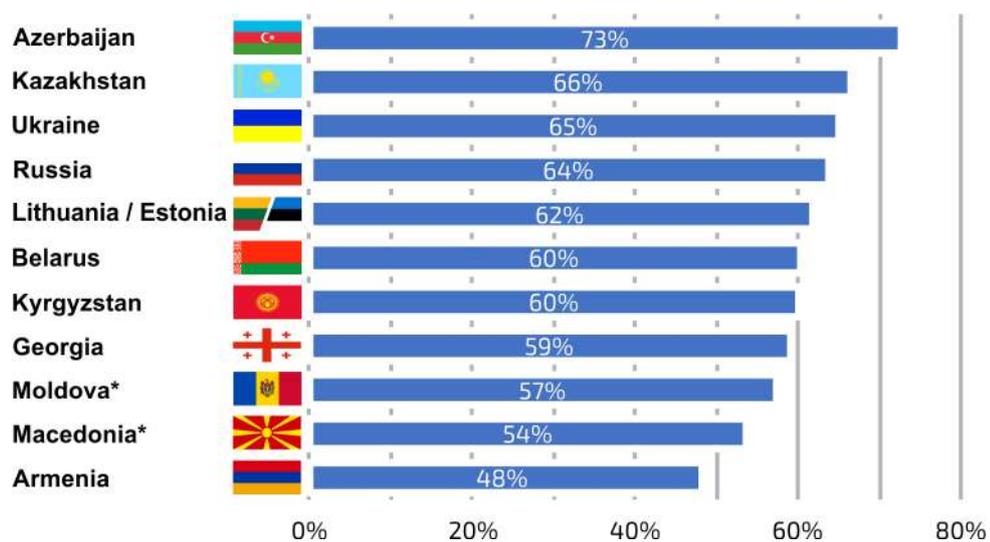
Figure 2.6: Respondents agreeing to participate in the next survey and who provided their e-mail, by country, % (*Differences between countries are significant at p < 0.001, * N < 100*)

From half (48% for Armenia) to three-quarters (73% for Azerbaijan) agreed to provide their e-mail address. However, taking into account the generally small sample sizes and the fact that not everyone will actually take part in the second survey, it is likely that it will only be possible to conduct longitudinal comparisons in Russia, Ukraine, and Belarus. The numbers of respondents who provided their e-mail address in these countries were 3,321, 875, and 295 people respectively.

2.5. Data Analysis Methods

Descriptive analysis included uni- and two-dimentional distributions of respondents' anwers. Means or medians were also estimated for quantitative variables. The distribution were visualized by line charts, column diagrams, boxplots, and scatter diagrams with overlapping linear model lines. Significant differences were estimated by Pearson χ^2 test, Student's T-test, and Welch's ANOVA. If ANOVA test was significant, post-hoc pairwise comparisons were done by Games-Howell test. To compare medians, we used Kruskal-Wallis test. Binary logistic regression was used for modeling of outcomes of interest by multiple predictors.

We estimated reliabilty of Short Internalized Homonegativity Scale by Cronbach's α. For countries and language groups with a big enough sample (at least 95 participants), the validity and measurement equivalence of the scale was tested using Multigroup Confirmatory Factor Analysis (CFA). Robust Maximum Likelihood Estimation (MLR) with Full Information Maximum Likelihood (FIML) was used to assess the models. Structural equation modeling was used to estimate associations between the SIHS and possible predictors. The reliability and validity of the LGBT activism scale were also tested with Cronbach's α and CFA. In the latter case, robust weighted least squares (WLSMV) algorithm was used for the sample.

The applicability of particular methods varied according to the available sample sizes. As we noted before, a sample in some countries did not not reach 100 respondents. Besides that, a sample could be limited even more, e. g., to those only who had had anal sex in the last 6 months. See Table 2.1 for a summary of the typical sub-samples' sizes. In addition, calculating the SIHS as the mean of respondents' answers leaves out approximately a quarter of the sample as missing values.

The general rule is as follows: if there are fewer than 100 people in a sub-sample, it is not included even in one-dimensional analysis, except for one-dimensional distribution of answers to questions for individual countries. In this case, the country is marked with an asterisk *****. Therefore, associations are analyzed for a smaller number of countries sometimes.

Statistical analysis was performed in IBM SPSS Statistics 22.0 [13], R 3.4.3 [14] together with RStudio 1.1.383 [15], and Mplus 7.0 [16]. Vizualizations were created using ggplot2 library [17], connected to R.

Table 2.1: Various sub-samples' sizes in separate countries

	All respondents	Sex with men in the last 6 m.	Anal sex with men in the last 6 m.	Anal sex with casual partners in the last 6 m.	Last anal sex in the previous 6 m. with casual partner	Got tested for HIV	MSM-service NGO is accessible
Russia	5252	4469	3899	3255	2142	4289	821
Ukraine	1365	1177	989	814	556	1033	567
Belarus	495	404	349	287	190	362	215
Kazakhstan	223	180	161	138	90	169	41
Kyrgyzstan	181	149	136	108	70	147	114
Georgia	151	129	108	96	68	112	79
Armenia	138	111	94	81	61	96	82
Lithuania	120	104	87	69	44	88	56
Azerbaijan	119	99	87	84	48	67	33
Estonia	77	66	61	51	31	68	28
Moldova	64	52	44	38	22	48	37
Macedonia	54	50	44	36	21	40	38
Tajikistan	21	13	12	11	6	14	5
Total	8260	7003	6071	5068	3349	6533	2116

A light gray color indicates sub-samples of < 100 people; dark gray — less than 30 people

3. Social-demographic Characteristics

3.1. Sexual Orientation and Outness

The majority of respondents (64%) identified as gay or homosexual, and about one-quarter as bisexual (Fig. 3.1). Two percent of respondents identified as heterosexual, and a few percent did in another way.
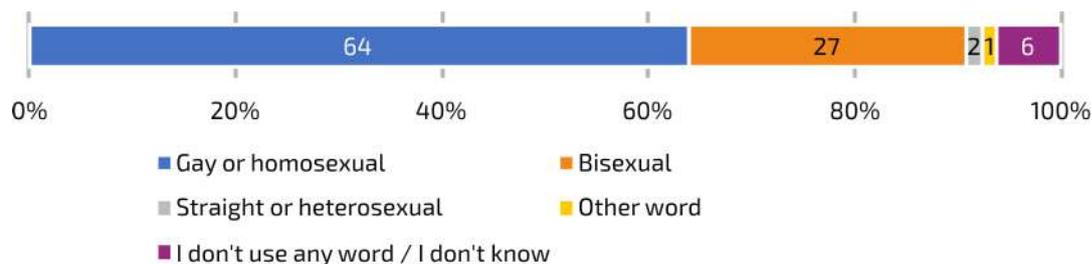
Figure 3.1: Declared sexual orientation, %

This ratio differed remarkably between countries (Fig. 3.2). The largest share of gay respondents, 70% and higher, were in the European Union countries, Lithuania and Estonia, as well as in Macedonia. On the other hand, the lowest number of respondents identifying themselves as homosexual was in Armenia (43%), Azerbaijan, Georgia, and Kyrgyzstan. In the same countries, a relatively high number of participants could not determine exactly what their orientation was. The remaining countries fell somewhere in the middle, with 64–67% of respondents identifying themselves as gay, and approximately one-quarter as bisexual.

The countries are ordered in a similar manner when examining respondents' outness, i. e. whether other people know that the respondent is attracted to men (Fig. 3.3).

In no country did the most of MSM state that their sexual orientation is known to everyone. However, representatives of Lithuania/Estonia and Macedonia were the most out: 17 to 22% from there answered that everyone knew that they were MSM, and 25 to 29% indicated that more than half of their acquaintances knew this. In the remaining countries, more than a half answered that only a few or none at all knew about their attraction to men. The MSM from Armenia and Azerbaijan were the most closeted. The pattern when fewer MSM identify themselves as gays, and they are less out about their sex preferences in societies with more negative attitudes towards homosexuality has been described in the literature [18].

3.2. Age, Education, and Employment

Respondents were generally young (Fig. 3.4). The median respondent was 30 years old, and half of the respondents were between 24 and 37 years old. 80% of respondents were younger than 39 years old. In other words, MSM older than 40 were underrepresented.
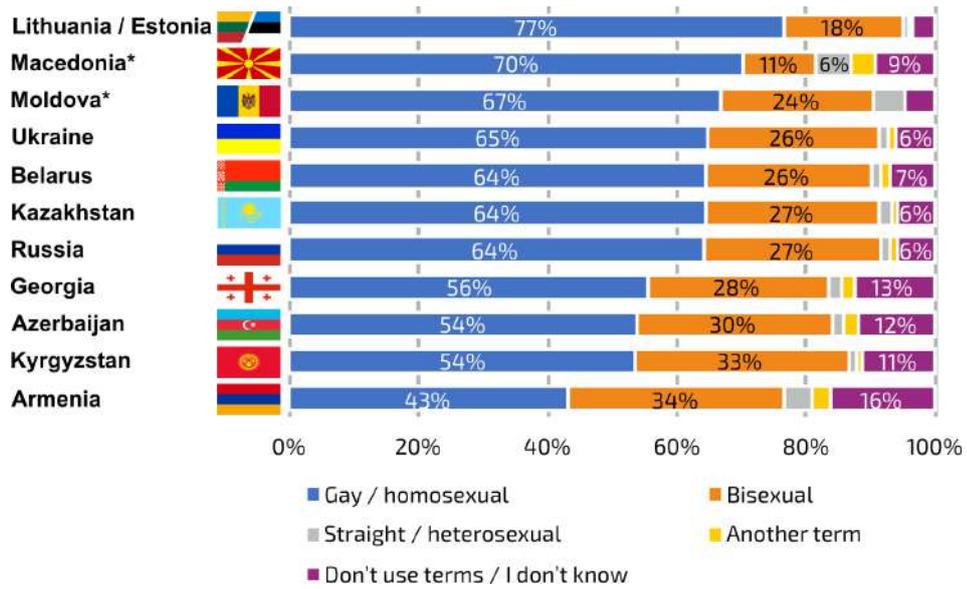
Figure 3.2: Distribution of respondents' sexual orientation by country, % (* $N < 100$)
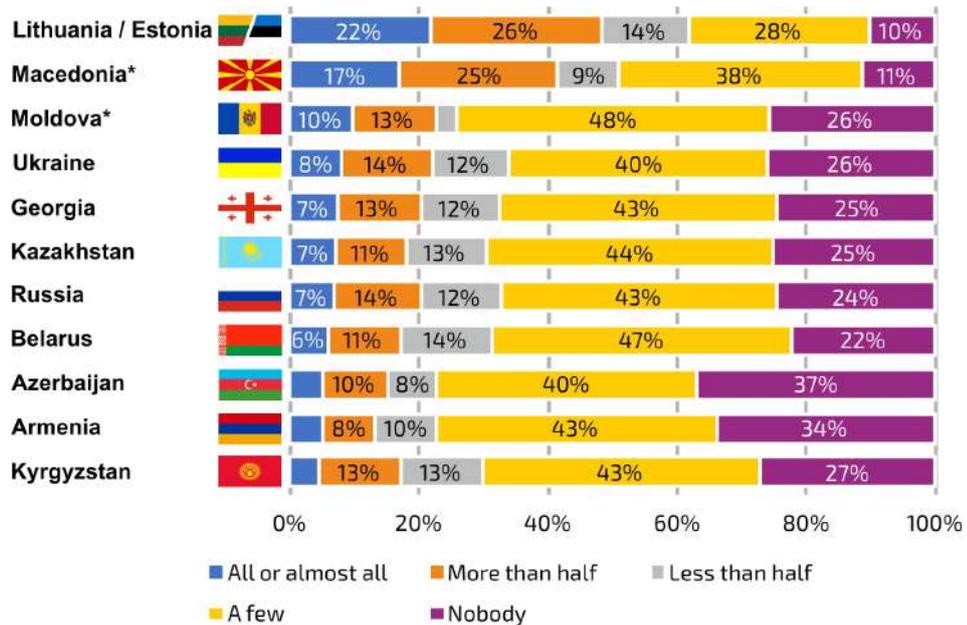
Figure 3.3: "Thinking about all the people who know you, how many of them know that you are attracted to men?", by country, % (* $N < 100$)

The age of respondents differed from country to country (Fig. 3.5). In particular, the respondents in Armenia, Azerbaijan, Georgia, and Kyrgyzstan were on average slightly younger, and those in Estonia/Lithuania and Russia slightly older.
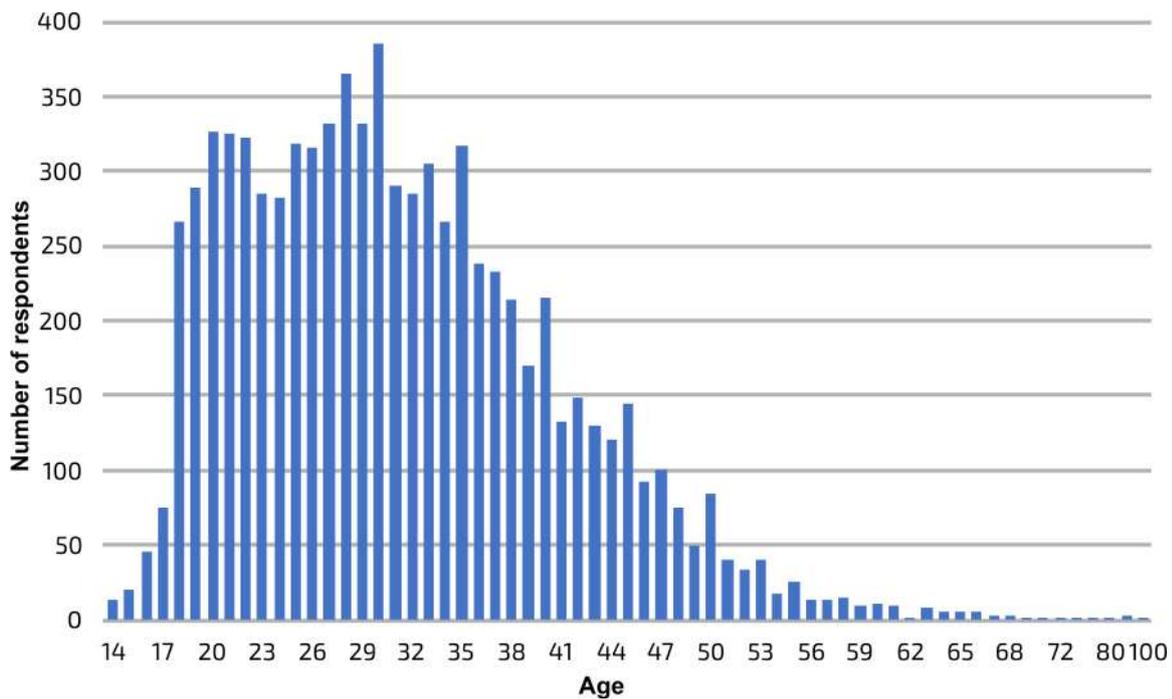
Figure 3.4: Age of respondents, years

The sample of MSM also turned out to be highly educated. Most of respondents, 72%, had some level of higher education (Fig. 3.6). More specifically, approximately one-third had an incomplete higher education (below Master's/Specialist's degree), 37% had Master's degree or equivalent, while 4% had a post-graduate degree.

Substantial share of those who indicated that they were educated below full tertiary education were students. Many of them had not attained final education level.

The education varied slightly from country to country. A total share of those with higher education was not lower than 65% in any country (Fig. 3.7). Ukraine had the highest percentage of respondents with some form of higher education (78%), as well as the most respondents with an incomplete higher education level (45%). In Azerbaijan and Kazakhstan, the numbers of respondents with some level of higher education were the lowest.

The majority of MSM were employed (64% in total, Fig. 3.8), a relatively big percentage were self-employed or ran their own business. Taking into account the age profile of the respondents, it is not surprising that quite a lot were students (13%), and very a few were retired or disabled (1%).

The following characteristics were identified when examining countries individually (Fig. 3.9). A relatively large number, at least 60%, of respondents in Russia, Kazakhstan, Macedonia, Belarus, Ukraine, and Armenia are employed (in Armenia, many work part-time).

The highest percentage of self-employed was in Lithuania/Estonia (17%), Kazakhstan, and Kyrgyzstan (18% each), the lowest — in Macedonia, Armenia, and Azerbaijan (9%).
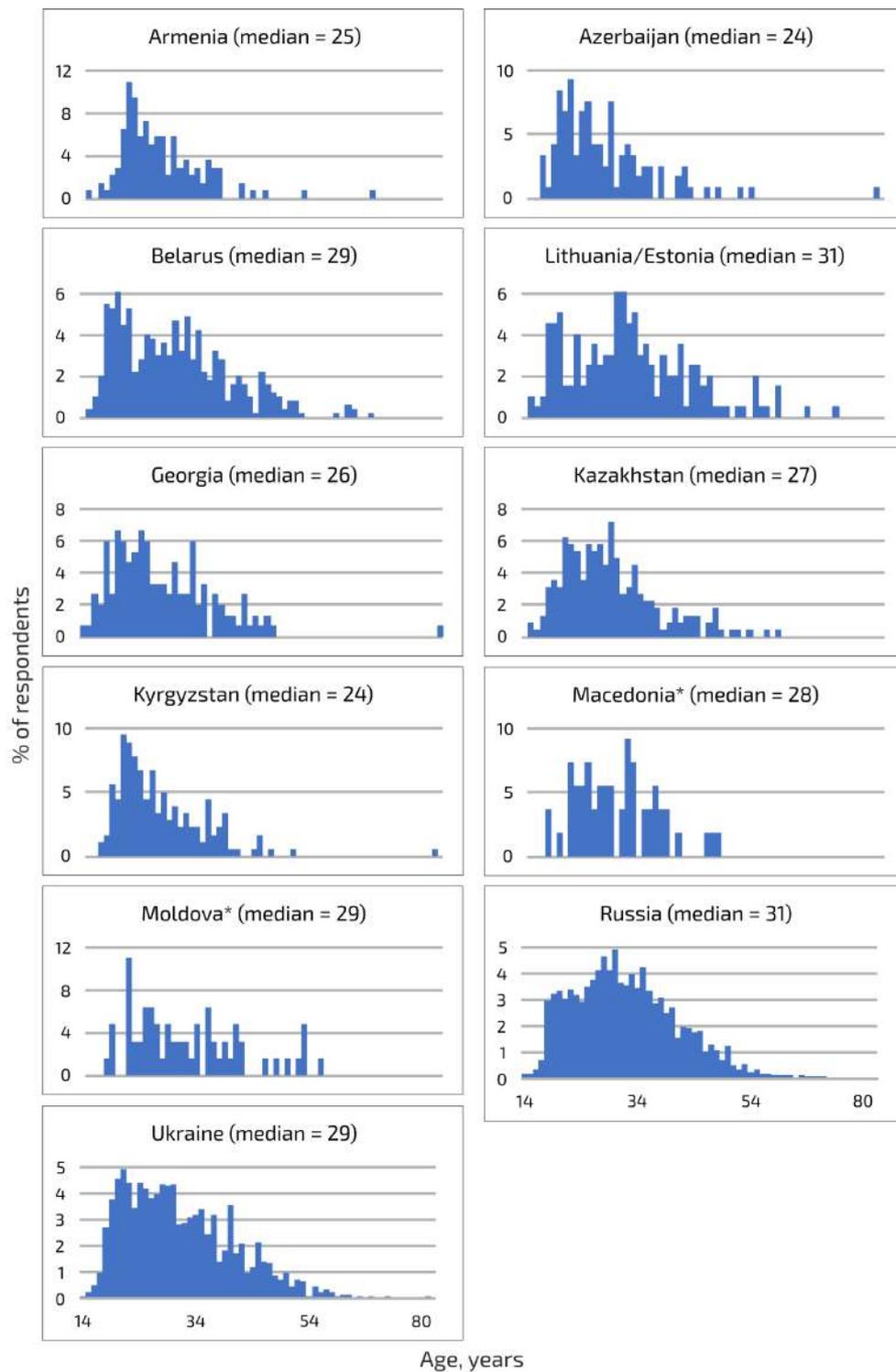
Figure 3.5: Age of respondents by country (*Differences between countries are significant at p < 0.001, * N < 100*)
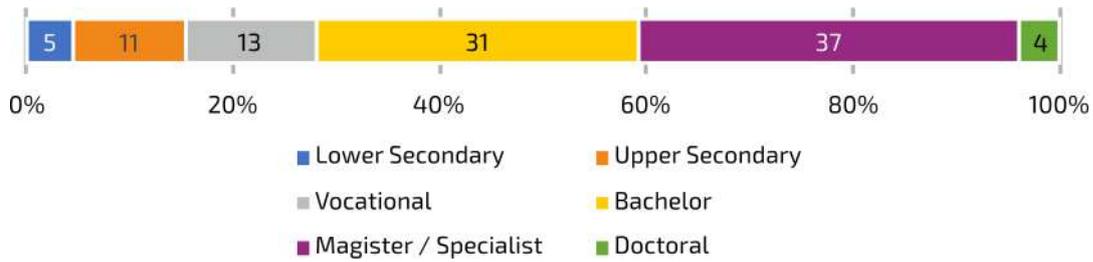
Figure 3.6: Education level of respondents, %
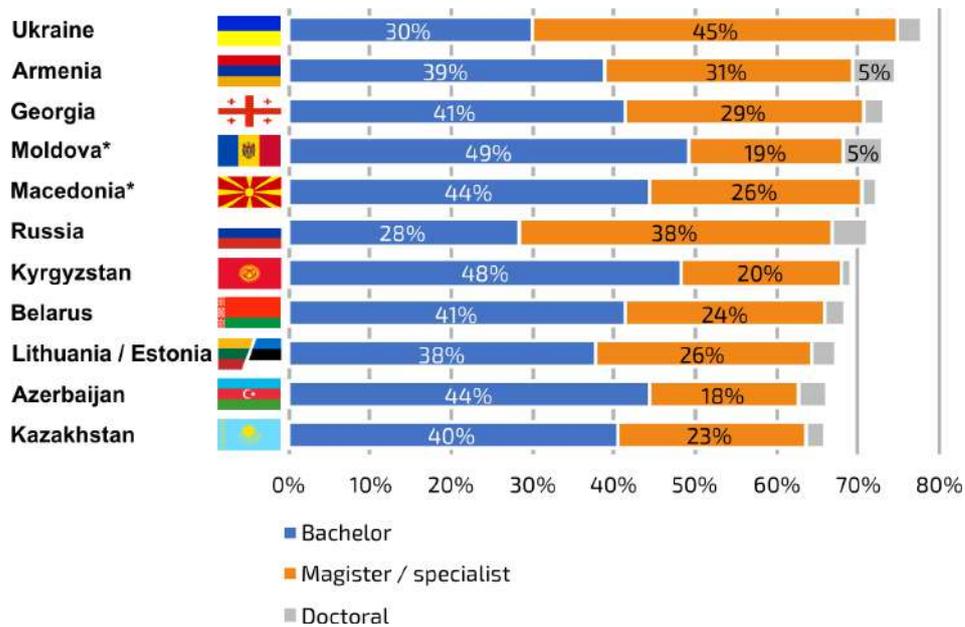
Figure 3.7: Share of respondents with different levels of higher education by country, % (*Differences between countries are significant at p < 0.001, * N < 100*)
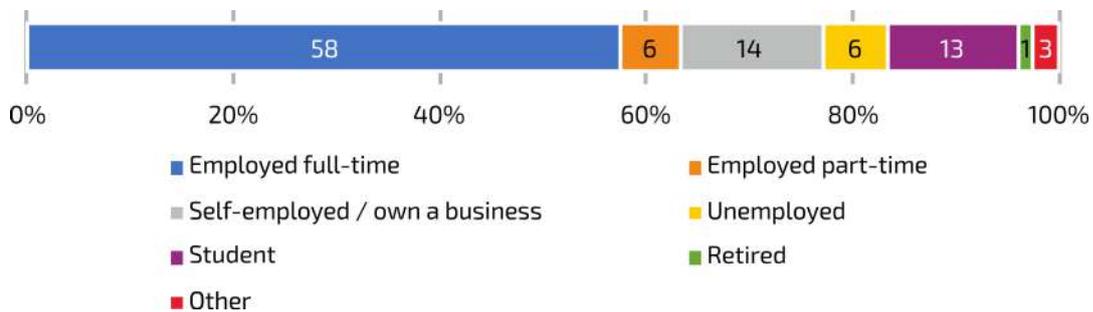
Figure 3.8: Employment status of respondents, %
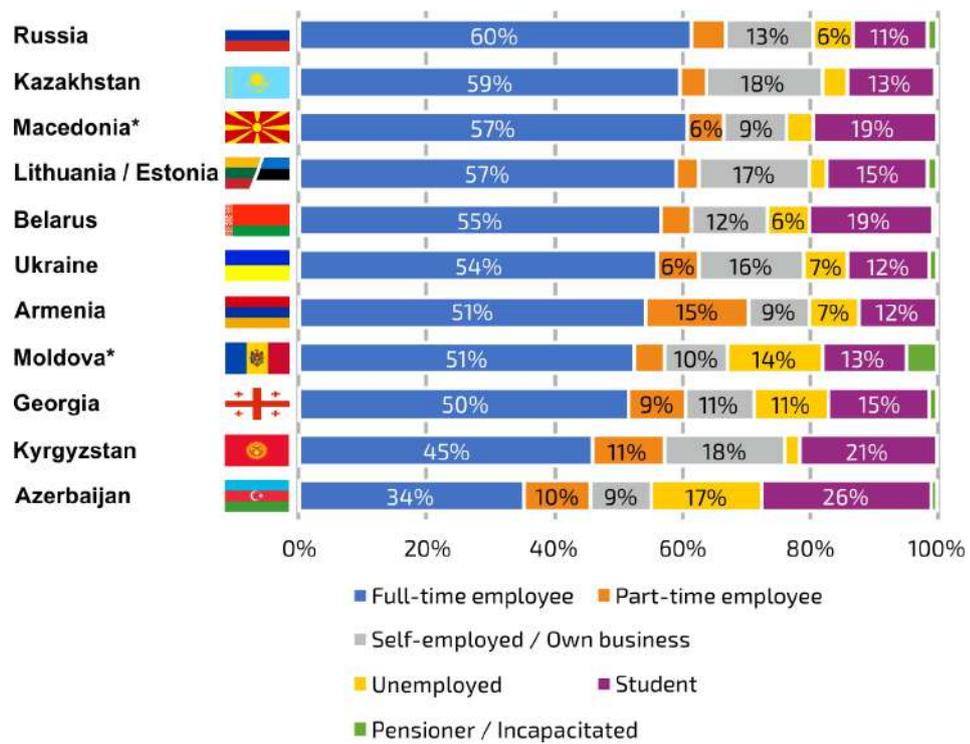
Figure 3.9: Employment status by country, % (*Differences between countries are significant at p < 0.001, * N < 100*)

The highest share of students was in Azerbaijan (26%), Kyrgyzstan (21%), Macedonia and Belarus (19% each).

The highest unemployment rate among respondents was in Moldova (14%; 5% also indicated that they are retired/disabled), Azerbaijan (17%), and Georgia (11%).

The most specific employment structure was found among in Azerbaijan. They had the lowest share of the employed, and the highest share of students and the unemployed.

3.3. Marriage and Cohabitation

The absolute majority of survey participants had never been formally married: from 75% in Kyrgyzstan to 92% in Macedonia (Fig. 3.10). The answers about actual cohabitation draw a slightly different picture (Fig. 3.11). About one-third lived with their parents/relatives, another 27% lived alone. On the other hand, 16% stated that they lived with a male partner, while 11% responded that they lived with their wife or with a girlfriend.
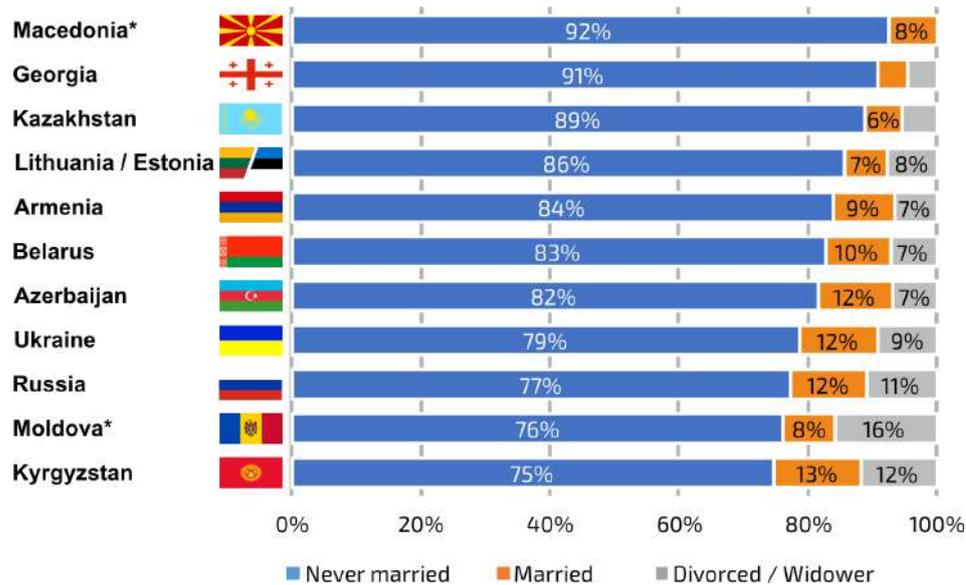
Figure 3.10: Marital status of respondents by country, % (*Differences between countries are significant at p < 0.001, * N < 100*)

The frequency of various types of cohabitation differed from country to country (Fig. 3.12). In terms of cohabitation, a significant share of respondents in Macedonia (37%) and Lithuania/Estonia (24%) lived with a man. In Moldova, Belarus, Ukraine, and Russia, this percentage was 13–17%. The smallest number of men living with male partners was in Azerbaijan and Georgia. In general, it was associated with differences in the outness about same-sex attraction.

32	27	16	11	10	5

■ With parents or other relatives

■ Live alone

■ With a man partner

■ With a wife or a woman partner

■ Live with other people that rent an apartment with me, or with a landlord
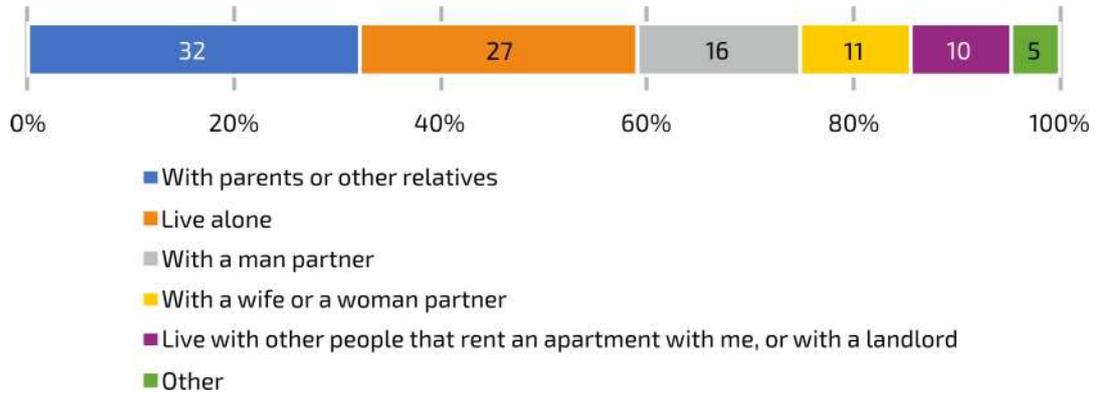
■ Other

Figure 3.11: Actual cohabitation status of all respondents, %

■ With parents or other relatives

■ Live alone   ■ With a male partner

■ With wife or woman partner

■ Live together with people with whom or from whom I rent a house

■ Another variant
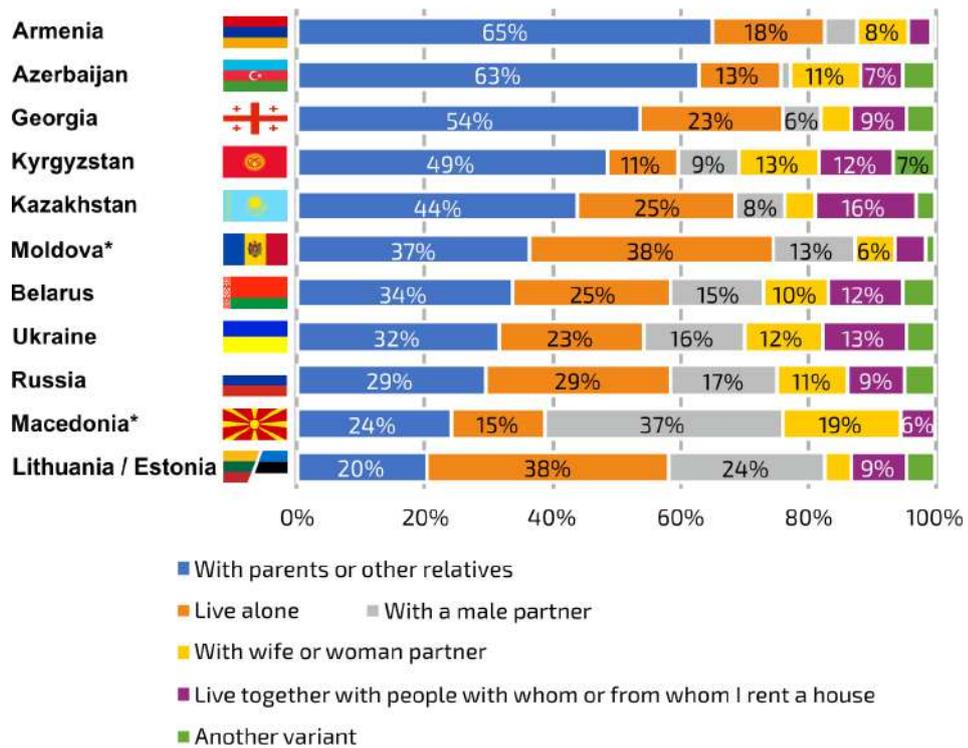
Figure 3.12: Actual cohabitation status of respondents by country, % (*Differences between countries are significant at p < 0.001, * N < 100*)

On the other hand, some respondents stated that they live with their wife or with a female partner. The highest share was in Macedonia (19%), followed by Azerbaijan, Russia, Ukraine, and Kyrgyzstan (in each case, more than 10%).

3.4. Residence

The overwhelming majority of the surveyed MSM resided in large cities with a population of more than 100,000 people (Fig. 3.13), and, in a number of countries, the majority lived in capital cities, which must be considered when extrapolating the results. Only a few percent lived in rural areas.
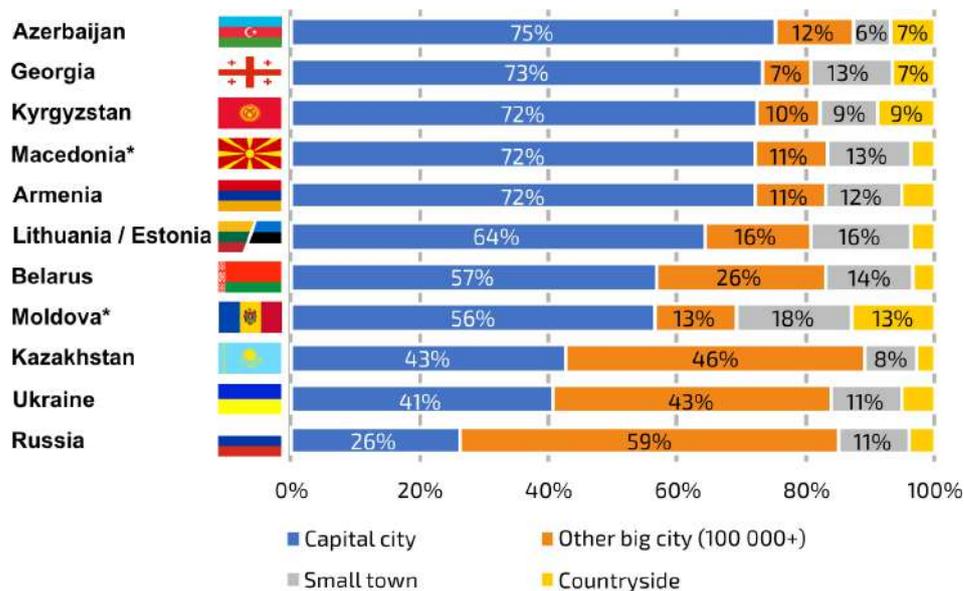
Figure 3.13: Place of residence of respondents by country, % (*Differences between countries are significant at p < 0.001, * N < 100*)

The highest percentages of respondents from capital cities (72–75%) were in the South Caucasus countries, Kyrgyzstan, and Macedonia. On the other hand, 41–43% of respondents in Kazakhstan and Ukraine, and 26% in Russia lived in the capitals, whereas 43 to 59% lived in large cities outside capitals.

3.5. Religiosity

Regliosity may not be the most important phenomenon in the study of MSM and their sexual health. However, it is known that religiosity correlates with higher levels of homophobia [19, 20]. Therefore, we included a question on self-assessment of religiosity.

The majority of respondents were irreligious (Fig. 3.14). The majority considered itself as completely not religious (0 on a scale of 0 to 10), or "somewhere in between" (5).
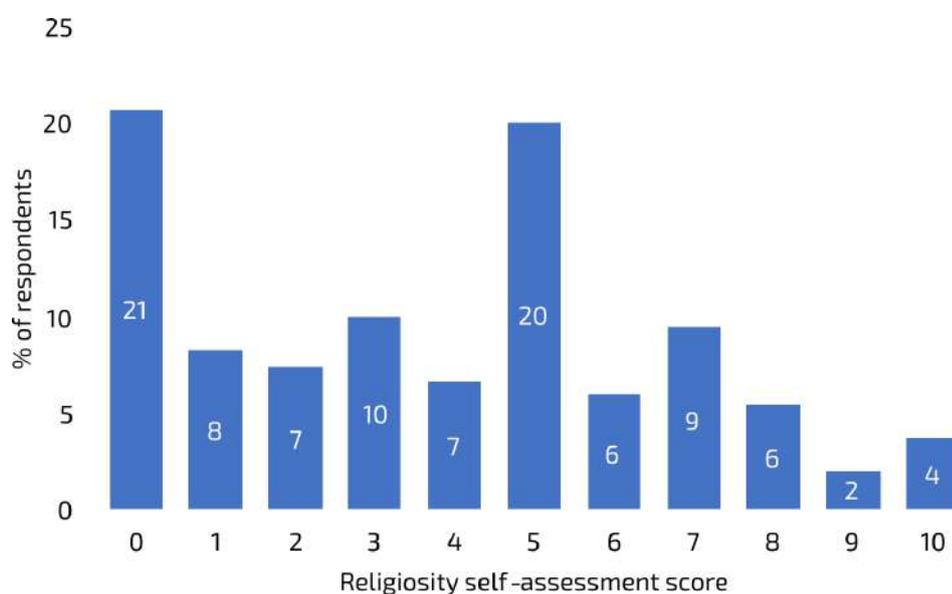
Figure 3.14: Respondents' scores of their religiosity, % (*0 — not at all religious; 10 — very religious*)

The religiosity of respondents differed somewhat from country to country. Figure 3.15 shows its distribution by country as notched boxplots. The horizontal line in a boxplot visualizes a median score, while a notch shows its confidence interval. In other words, if the notches do not intersect in height, we can assume significant differences. Fig. 3.15 shows that the least religious respondents were from Macedonia, Lithuania/Estonia, and Georgia. On the other hand, respondents from Armenia and Kazakhstan were much more religious. The remaining countries had the same median and fell between the former two groups.

3.6. Participation in NGOs

Attention should be given to the significant differences between countries when it comes to participation in MSM-service NGOs (Fig. 3.16). MSM working in such NGOs are likely to be better covered by prevention programs, and to accept themselves as homo- or bisexual, and consequently, should have lower levels of internalized homonegativity. On the other hand, the majority of MSM do not participate in the work of such organizations. The overrepresentation of those participating in the work of such NGOs indicates the specificities of the sample and the need for cautious extrapolation.

In Macedonia, Moldova, and Kyrgyzstan, 15–17% of respondents participated in MSM-service NGOs. This figure was 10% in Armenia. In Russia, only 1% worked with such NGOs. In the remaining countries, the indicator ranged from 3 to 7%. The smaller the sample, the
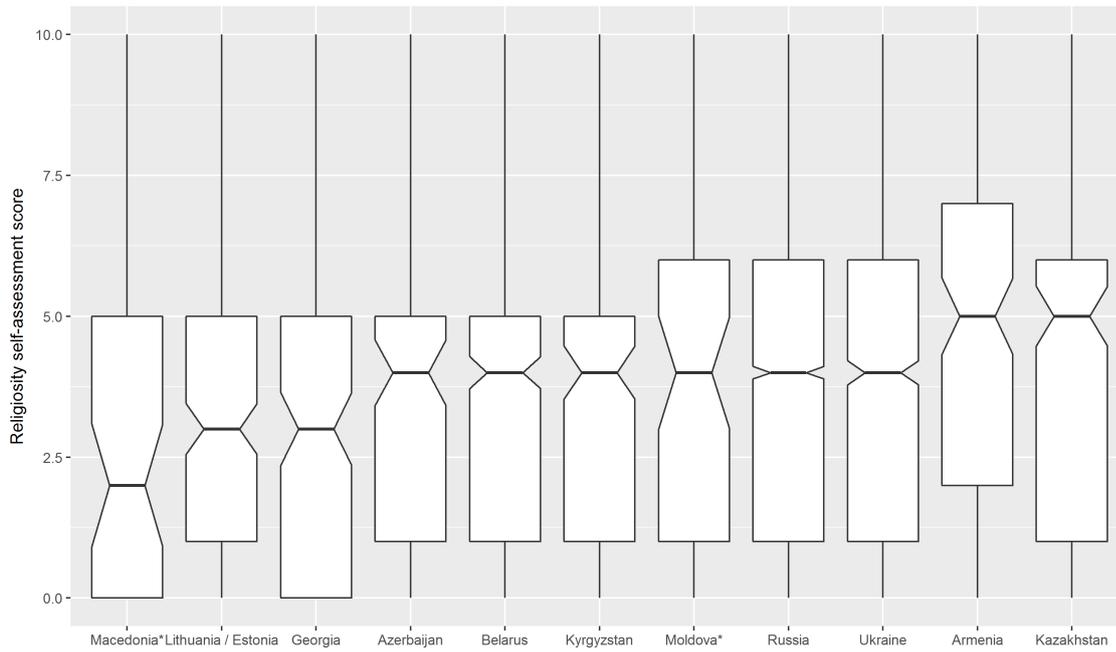
Figure 3.15: Respondents' self-assessments of their religiosity by country, (*0 — not at all religious; 10 — very religious*, * *N* < 100)
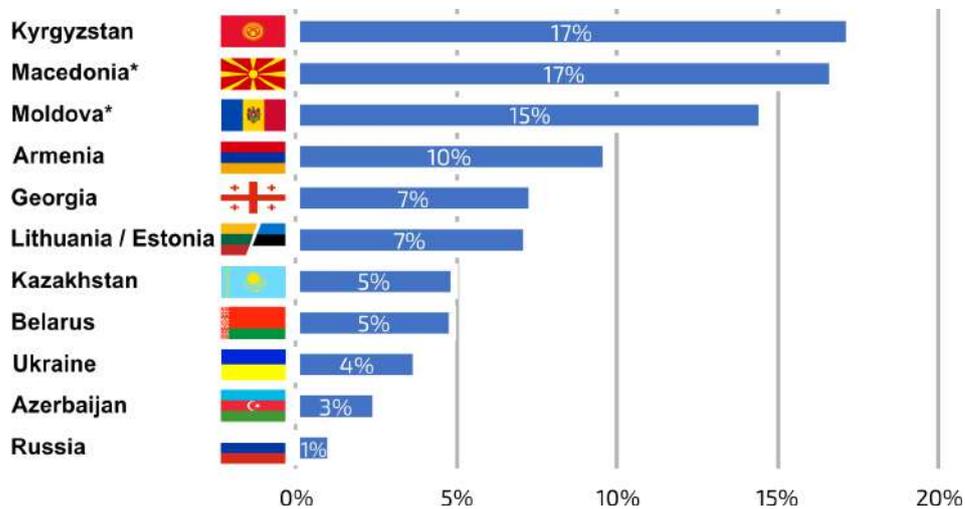
Figure 3.16: Share of respondents participating in organizations for gays and bisexuals by country, % (*Differences between countries are sign. at p < 0.001*, * *N* < 100)

more likely respondents were recruited in NGOs. Kyrgyzstan is one exception, which is closer to Kazakhstan in terms of sample size.

In the overall sample, only 3% of respondents indicated that they participated in MSM-service organizations.

Conclusions

The surveyed MSM had got a number of specific characteristics that varied by country. The most notable ones were the following.

First, about two-thirds of the sample consisted of homosexuals, another quarter were bisexuals, and up to 10% were people who did not identify themselves in these terms.

Secondly, the majority of respondents were young, employed, irreligious residents of large cities with a certain higher education. Accordingly, the results of the study should be applied to MSM older than 40, to those living outside of large cities, etc. with caution.

The majority of respondents were never married. Some MSM respondents lived with male partners, as well as some lived with their wives or female partners.

Third, the smaller the sample in individual countries, the greater the representation of gays and bisexuals who participated in organizations for gays and bisexuals. In Russia, this figure was about 1%, while in the samples of some other countries, this indicator reached 17%. In such a case, all other findings would be more characteristic of MSM participating in NGOs, rather than those who were not, in comparison with their relative weight among the general MSM population.

Fourth, there was a clear trend in the increasing outness of respondents when moving from the countries of the South Caucasus and Central Asia, to a group including Russia, Ukraine, Belarus, and Moldova, and then further to Macedonia, and the Baltic Countries, which are members of the European Union. When examined in this order, the share of whose who identified themselves as homosexual, whose sexual orientation was known to others, and who lived with male partners increases.

All this be taken into account when analyzing the responses about sexual behavior and coverage by prevention programs.

4. Internalized Homonegativity and Its Measurement

4.1. Concept of Internalized Homonegativity

Internalized homonegativity (IH), also known as internalized or internal homophobia, is an attitude when a lesbian, gay or bisexual has negative feelings towards homosexuality, including their own same-sex attractions [21, 22]. In essence, it occurs when LGB people uncritically assimilate predominant negative attitudes and assumptions about homosexuals and homosexuality during socialization, and harbor shame, contempt, and other negative feelings about themselves [23, 24, 25]. In other words, IH occurs when MSM accept stigma towards homosexuality, and stigmatize themselves [26, 27].

There is a direct link between IH and the level of homosexuality stigma in society. Average IH is associated to the extent to which local legislation protects or discriminates them [28], in particular, it is associated with the fact whether same-sex couples are allowed to marry and adopt children [29]. In addition, IH is higher among respondents in countries where the rejection of homosexuality is common among public opinion, where LGB people perceive the social environment as unfriendly [30], and where access to HIV and STI prevention services is more limited [29].

A relevant terminology is worth clarifying. Homophobia was the term used in the past for this concept, including to describe "self-loathing" of homosexuals [31]. This term is still used oftentimes, but meets certain criticisms as well. It refers to a phobia as an individual psychopathology, which is based on irrational fears. However, the current consensus is that hostility and negative attitudes towards homosexuals are manifestations of massively widespread cultural stigma, which is a socio-cultural phenomenon [24, 26]. Moreover, the term homophobia may be too loaded with value judgements [32].

Therefore, *sexual prejudice* has been suggested instead of *homophobia* when speaking about the attitudes of heterosexuals [26]. In the case of self-homophobia, *internalized homonegativity*, *internalized heterosexism*, or *self-stigma* are suggested [27]. We are using the first option. We also prefer the term *internalized* rather than *internal*, because it better reflects the fact that homonegativity does not appear by itself, but is absorbed from the external environment.

It should be noted as well that IH has rather different connotations for men and women, for cis- and transgender individuals, as well as for homo- and bisexual people [1, 25]. In practical terms, this means that IH, as a psychological attitude has different structure and requires different measurement techniques. In particular, it has been shown that IH among lesbians may have different components [34]. For homo- and bisexual men the same IH scale may work somewhat differently [1]. With this in mind, in this report, we will follow the general practice, according to which differences in homonegativity between homo- and bisexual men are more quantitative than qualitative [10, 35]. In this report, IH refers to MSM.

4.2. How Internalized Homonegativity Relates to Sexual Health of MSM

The growing body of research on internalized homophobia is primarily focused on its consequences for the health of gays and bisexuals, including sexual health, risky sexual behavior, and the abuse of alcohol and other substances [2]. However, the results of investigations into such associations have been rather contradictory [33, 36]. Reasons for this may include differences in measurement and analysis methods, sample sizes, and socio-cultural contexts.

Unprotected anal sex is one of the main variables used in the context of risky behavior. Some studies show a direct association between more pronounced IH and lower levels of condom use [22, 37, 38, 39, 40]. At the same time, meta-analytical [36] and review [33] studies show that this correlation is, at least, not always observable.

Nevertheless, more complex analysis shows the existence of indirect links, where the effect of IH on unprotected sex is mediated by other variables. IH correlates with compulsive sexual behavior (a lesser ability to restrain sex desires), and, consequently, a higher likelihood of unprotected sex [41]. On the other hand, IH correlates with a lower average number of casual partners, and, consequently, a lower likelihood of unprotected anal sex [41].

It has also been widely shown that unprotected sex correlates with more frequent use of alcohol and other substances [42, 43, 44], however, is this associated with increased homonegativity among MSM? Asosciations between IH and alcohol or drug abuse during sex are controversial. Some studies show that they exist [38, 40, 46, 45] or argue that they need to be taken into account [47, 48], while others do not confirm such a link, or do so only to a small extent [49, 50, 51, 52]. There are also findings, showing that lower IH is associated with the use of recreational drugs, poppers, and recent alcohol use [35].

There is also evidence of association between commercial sex experience and internalized homonegativity [40, 53].

Some studies among HIV-positive gay men show that among them, IH is associated with a higher probability of unprotected receptive anal intercourse, and, via associations with negative feelings (depression, anxiety, etc.) and abuse of stimulants and drugs, with less adherence to antiretroviral therapy [54]. In addition, IH is associated with a greater predisposition to unprotected serodiscordant anal contact, because of a one's HIV-status concealment and larger discomfort during sex, which leads to refusals to use condoms [55].

High levels of internalized homonegativity can also be a significant predictor of undiagnosed HIV [56], meaning self-stigma can reduce the willingness of MSM to be tested for HIV.

Testing for HIV is directly related to lower own homonegativity [22, 57], see also [46], and indirectly, to greater outness about one's sexual orientation [22].

A number of studies confirm the direct relationship between IH and concealment of one's sexual orientation[2] [22, 35, 58, 59, 53], with the latter being directly related to risky sexual practices, lower coverage by prevention services or a failure to undergo HIV testing. Moreover, MSM with high levels of self-stigma are less associated to gay and LGBT communities [10, 58, 60, 61]. In terms of prevention, this means that homonegative MSM may be less inclined to visit and participate in organizations for gays and bisexuals.

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[2]   In the literature, this is often denoted by the term *outness*, while *concealment* denotes the opposite

There is evidence that IH also affects the effectiveness of prevention activities [62]. A study by Huebner and colleagues [63] shows that higher homonegativity is associated with lower awareness about availaible services, and less willingness to participate in prevention interventions with other MSM. As it was mentioned above, IH at an individual level correlates with less access to prevention services, in particular to information about HIV and STIs, HIV and STI testing, as well as to free condoms [29].

Although it is beyond the scope of our study, there is a durable association between high IH and poor psychological health among MSM. IH is related to lower self-esteem, depressive symptoms , loneliness, and more frequent suicidal thoughts among men who are attracted to men [24, 36, 55, 59, 58, 64, 65, 66].

4.3. Previous Studies of Internalized Homophobia, its Consequences and Related Factors in the CEECA Region

Compared with the rest of Europe, legal climate and public opinion towards homosexuality tend to be worse, and homosexuality acceptance by MSM themselves is generally lower in post-socialist CEECA societies [22]. It is reasonable to assume that, in respective countries, internalized homonegativity among MSM is a larger problem in itself, as well as a factor that decreases health and reduces the effectiveness of a response to HIV epidemics. Nevertheless, very little relevant research has been conducted in the region.

A number of the abovementioned works were written on European MSM Internet Survey (EMIS) data. It included data about MSM in Belarus, Moldova, Russia, Ukraine, and Estonia [2, 22, 29, 30, 35], however, these countries did not get a special examination.

Additional descriptive reports were written for Russia [67], and Estonia [68]. However, only the text on Russia reported the IH average level, which was low, and its mean scores for different cities. In Moscow and St. Petersburg, IH was significantly lower than in other cities with a population of over one million [67].

Another study on the links between IH and various MSM health indicators was also conducted in Estonia [69]. It failed to reveal significant associations between IH and unprotected anal sex, drug use, and nearly all psychological health indicators (level of anxiety, depression, suicidal feelings). However, the study confirmed that, on average, a higher internalized homophobia is observed among those who are not attracted to men only, and among those who conseal their sexual orientation.

Isolated works were written in Russia and Ukraine that examined internalized homonegativity in the context of sexual socialization and maturation [70, 71], or explained the phenomenon of IH in a popular way [72][3]. Certain IH scales were adapted [74, 75].

In Ukraine, the relationship between internalized homonegativity and indicators related to sexual health, HIV and STI prevention were examined in two studies at least: a national integrated bio-behavioral study [76], and a survey of bisexuals [75]. They show that many of the patterns described above are reproduced in Ukraine.

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[3] We also refer to a translated book on psychotherapy for LGB clients by Davies and Neal [73], which also describes internalized homonegativity, and which is often cited by those writing about IH in Russian

Testing for HIV and receiving its results, awareness about accessible MSM-service organizations, coverage by prevention services, and obtaining free condoms were all significantly associated with a lower IH. Positive testing for syphilis was associated with a higher IH. At the same time, there was no correlation between IH and the indicator for knowledge about HIV [76]. Homonegativity was lower among respondents with higher education, better financial situation, and among those who had not been incarcerated. In addition, the level of homonegativity varied from region to region, which could be associated to the recruiting methods [76]. In both studies, those who identified themselves as exclusively homosexual had lower internalized homonegativity [75, 76]. In the study of bisexuals, homonegativity was associated with alcohol consumption and greater fears about coming out [75]. On the other hand, higher homonegativity was associated with a greater number of male partners in the last 6 months [75], which contradicts some of the results mentioned above [41].

The level of IH was also assessed in a study on possible strategies for implementing PrEP in Ukraine [77], however, this indicator was not central for the study.

Unfortunately, WTE did not succeed in finding studies on internalized homonegativity and its consequences for the health of MSM and HIV prevention in the countries of Central Asia and the South Caucasus, as well as for Moldova, Macedonia, and Lithuania.

4.4. The Short Internalized Homonegativity Scale

Researchers have designed a number of scales for measuring internalized homonegativity [3, 21, 24, 33, 58, 65, 78]. Of these, the Nungesser Homosexual Attitudes Inventory, which consists of 34 statements [65], and the Mayfield Internalized Homonegativity Inventory (IHNI), which includes 23 statements [21], have been quite popular.

In this study, however, we preferred a technique that arised from the work of Ross and Rosser [3]. Initially, it contained 26 items and was named the Reactions to Homosexuality Scale. Subsequently, some statements were removed that were not consistent enough or did not have a direct relation to the concept of internalized homonegativity [8, 10]. That version of the scale was called the *Short Internalized Homonegativity Scale (SIHS)*, and contained seven to eight items in total [10]. One of the items can be omitted at the discretion of the researcher, since it has practically no effect on the quality of the scale. The scale was used in the largest Internet survey of MSM in the world, which involved 174,209 participants from 38 countries, and was conducted in 2010 [12, 22, 79]. It was also included in a similar global survey in 2017.

Parsimony and a recent revision were not its only advantages. A number of studies showed that the scale retains its validity in different cultures, societies, and socio-demographical strata [9, 10], including in various European countries [1]. In plain English it means that it performs in about the same way in different communities. We do not know of any other similar cross-national confirmation of validity for other scales. This is also an important argument in favor of using the SIHS for countries in which similar studies have not been conducted previously.

The original English items' wordings, their translation into Russian, and the abbreviated forms used in this report are in Table 4.1. Answer options for each of the statements varied

on a seven-point scale from 1 ("Strongly disagree") to 7 ("Strongly agree"), where 4 is "Undecided". An option of "Not applicable to me" was also possibile, and was considered as a missing value.

The scale was also translated into all other survey languages. We preferred to use all eight statements, although it is possible to exclude "Femininity" item. We did this for greater robustness when testing the validity of the scale (see Appendix A).

The SIHS, as well as the concept of internalized homonegativity on which it is based, consists of three structural elements (factors)[4] : personal comfort with gay identity, social comfort with gay men, and public identification as gay. The correspondence of individual statements to these factors is shown in Figure 4.1.
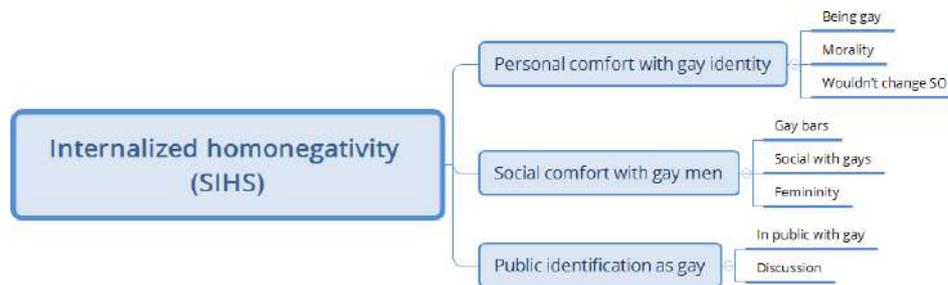
Figure 4.1: Theoretical structure and indicators of the SIHS (*Source: based on [1]*)

One feature should be noted: an increase in its scores indicates a *decrease* in the level of IH. This is easy to see from reading the statements and response options. To mitigate this inconvenience and avoid flipping the scale in the report, we use "acceptance of homosexuality" and other similar phrases as synonyms for a low level of IH. Only values of less than 4 indicate the presence of IH. Values above 4 indicate the opposite, i. e. the acceptance of one's own homosexuality and the homosexuality in others.

4.5. Results of the SIHS Validity Testing

Before using the scale, one should make sure it is valid. In other words, it measures what it should. This is even more relevant, as the validity of the scale has never been tested in the CEECA region before[5].

We tested the applicability of the scale in two ways. First, we tested reliability (consistency) of the scale using Cronbach's α. Second, we tested the latent structure of the scale using

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4 This structure is not universal: other techniques for measuring internalized homonegativity had different factor structures

5 We have no evidence that the SIHS has been ever used in Armenia, Azerbaijan, Georgia, Kazakhstan, and Kyrgyzstan. So it is possible that this was the first time the SIHS was translated into respective languages. The other countries were covered by the European MSM Internet Survey in 2010, during which this scale was used. However, the region was taken as a whole without reference to individual countries for validity testing [1]. The translations of the scale in that study, at least in Russian and Ukrainian, differed from ours

Table 4.1: Wording of the items of the Short Internalized Homonegativity Scale (SIHS)

Original wording	Russian translation	Abbreviated form
Obviously effeminate homosexual men make me feel uncomfortable[R]	Откровенно женоподобные гомосексуалы вызывают у меня чувство неловкости[R]	Femininity
I feel comfortable in gay bars	Я чувствую себя комфортно в гей-барах	Gay bars
Social situations with gay men make me feel uncomfortable[R]	Я чувствую себя неловко в обществе геев[R]	Social with gays
I feel comfortable being seen in public with an obviously gay person	Я спокойно себя чувствую, когда меня видят в компании явно гомосексуального человека	In public with gay
I feel comfortable discussing homosexuality in a public situation	Я спокойно себя чувствую, когда открыто обсуждаю гомосексуальность	Discussion
I feel comfortable being a homosexual man	Быть гомосексуальным мужчиной для меня комфортно	Being gay
Homosexuality is morally acceptable for me	Гомосексуальность для меня морально приемлема	Morality
Even if I could change my sexual orientation, I wouldn't	Даже если бы я мог изменить свою сексуальную ориентацию, я этого не сделал бы	Wouldn't change SO

Agreement with items is rated using a seven-point scale 1 ("Strongly disagree") to 7 ("Strongly agree"). Source of the original statements: [1]. Translation were done as part of the study.
[R] *Inverse scale*

confirmatory factor analysis (CFA). The first method is simpler, and shows whether it is possible to calculate the scale as the arithmetic mean of the answers provided for individual items. It can also be used for smaller samples, but it is less accurate. The second method is more accurate, accounts for measurement errors better, asseses degree of equivalence between different linguistic and cultural groups, and shows differences between countries. Translation into other languages and using it in different conditions can bring additional distortions to performance of the scale. However, this method is much more complicated and requires large samples. Therefore, we did not use it for all countries. Its results are also more difficult to interpret. Technical details of testing for reliability, latent structure, and measurement equivalence of the scale are in Appendix A.

The general conclusions on the SIHS quality are as follows. The consistency of the scale in all countries (except Tajikistan) is quite sufficient: the Cronbach α varied from 0.71 to 0.83. The theoretical three-factor structure was not tested for Macedonia and Moldova, and was not confirmed for Armenia. For all other countries, the partial scalar invariance of the SIHS was confirmed. From a practical point of view, this means that the results of measurements and statistical models in these countries can be compared with each other, taking into account certain nuances.

In general, we have obtained an operational scale in several languages of the region that can be used in future studies, which is an additional result of this study.

4.6. Unidimensional Distributions of the Scale Items

Unidimensional distributions of answers alone let us assume that mostof respondents would not demonstrate internalized homonegativity. The distributions for the pooled sample are in Fig. 4.2. We do not include "Not applicable to me" option here. Depending on the item, from 2% ("Homosexuality is morally acceptable to me") to 11% ("I feel comfortable in gay bars") of respondents chose that answer.

Recall that the score of 4 is a kind of zero for each statement. If a respondent selected a greater than 4 score (for inverse statements, marked with R — a less than 4 score), then he was likely not to have internalized homonegativity, but rather to accept himself as a homo- or bisexual. Responses indicating a lack of IH were selected by more than a half of all respondents for 6 out of the 8 statements. Exceptions included the item about being seen in public with a gay, and, especially, the item about feminine homosexuals. In these cases, the respondents were more likely to give answers that are considered homonegative.

Table 4.2 anticipates difference in responses between countries. For example, a median response on morality of being a gay differs less than a response about hypothetical change one's sexual orientation, or about feminine homosexuals. It is also clear that in Lithuania/Estonia and Macedonia, respondents tended to give less homonegative answers than, for instance, in Georgia.
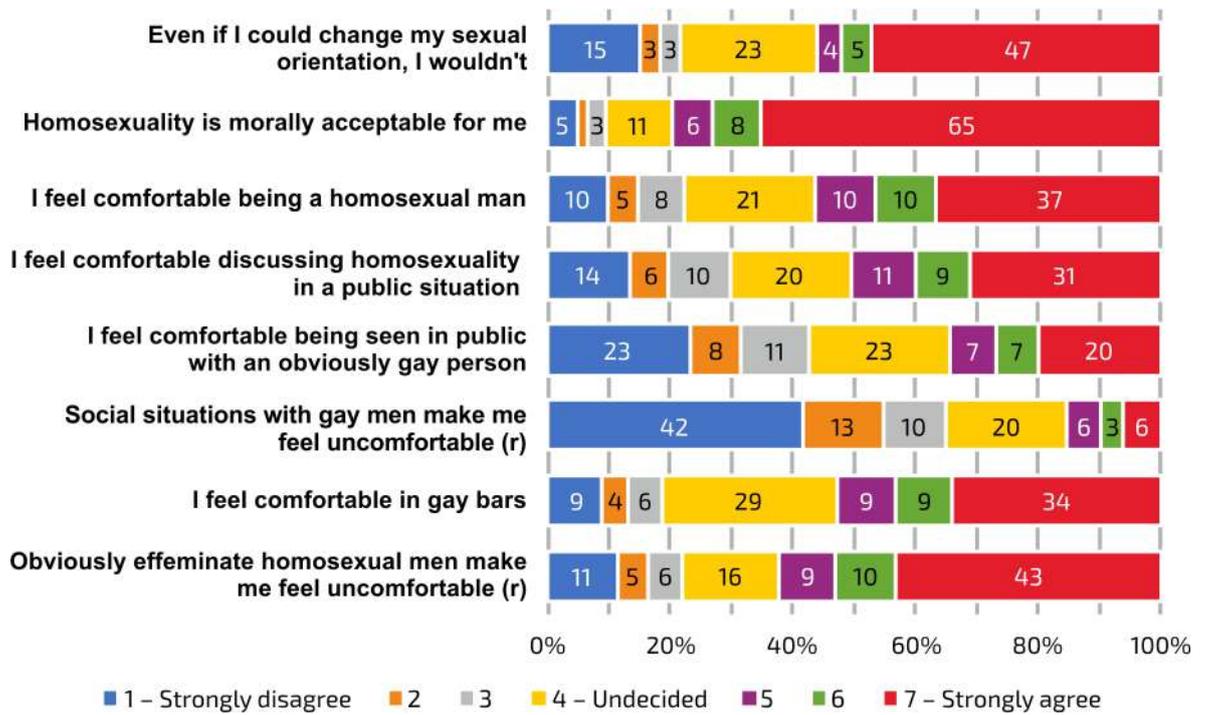
Figure 4.2: Distribution of answers to questions from the homonegativity scale, % (*r* — *scale items inversely encoded*)

Table 4.2: Median scores for the SIHS items by country

	Obviously effeminate homosexual men make me feel uncomfortable	I feel comfortable in gay bars	Social situations with gay men make me feel uncomfortable	I feel comfortable being seen in public with an obviously gay person	I feel comfortable discussing homosexuality in a public situation	I feel comfortable being a homosexual man	Homosexuality is morally acceptable for me	Even if I could change my sexual orientation, I wouldn't
Armenia	4	5	2	3	5	6	7	5
Azerbaijan	4	4	3	4	4	4	6	4
Belarus	5	5	2	4	5	5	7	6
Georgia	4	5	1	3	4	6	7	7
Kazakhstan	6	5	2	4	4	5	7	5
Kyrgyzstan	5	5	3	4	4	4	6	4
Lithuania/Estonia	5	6	2	5	5	6	7	7
Macedonia*	2	6	1	6	6	7	7	7
Moldova*	6	6	3	4	5	5	7	7
Russia	6	5	2	4	5	5	7	6
Ukraine	5	5	2	4	5	5	7	6

*Differences between countries are significant at $p < 0.001$, * N < 100*

4.7. Comparison of Average Internalized Homonegativity between Countries

First, we compare the SIHS scores calculated as the arithmetic means of individual items. The scale ranges from 1 to 7 points, where 1 indicates the highest level of internalized homophobia, and 7 indicates the highest level of acceptance of homosexuality.

The comparison confirms the low IH level in all countries. Scores are significantly higher than 4 everywhere (Fig. 4.3). On average, the surveyed MSM are rather accept homosexuality. The difference in the average indices between countries is not principal, although significant sometimes. It is 1.2 points difference between Macedonia and Kyrgyzstan.
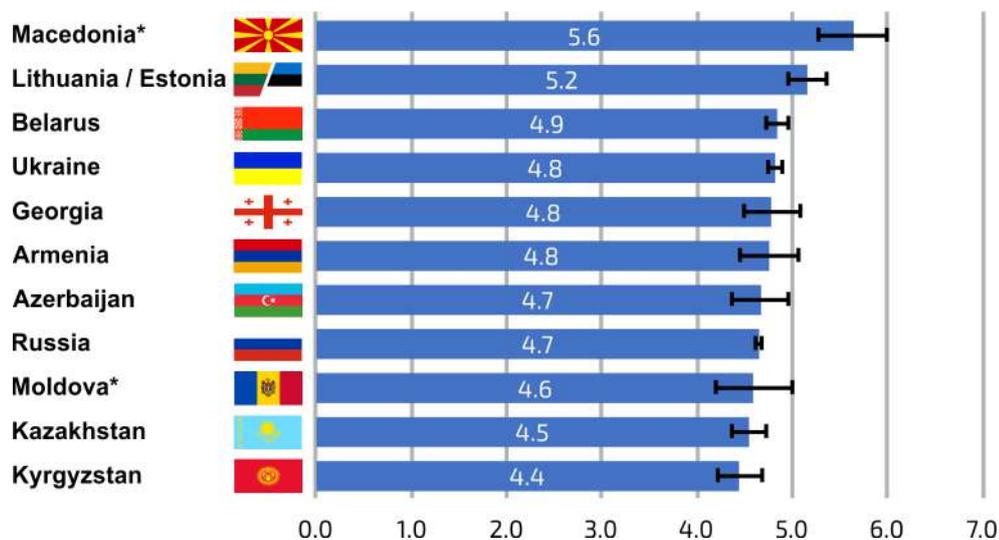
Figure 4.3: Mean scores of the SIHS scale (homosexuality acceptance, arithmetic mean) in 12 countries (*Differences between countries are significant at p < 0.001, * N < 100*)

Next, we compare the average latent scores of the SIHS obtained from CFA (A.5, Model 14). They permit more accurate comparisons in 8 countries, and reveal meaningful differences in the structure of IH. Unfortunately, we cannot estimate an absolute value of homonegativity for each group within CFA approach. Therefore, we consider IH score for Russia to be zero as a comparison line (which does not mean that there is zero homonegativity in reality in Russia), and compare IH in the remaining 7 countries with the line (Fig. 4.4).

There is no significant difference between Russia and Kazakhstan was observed. Acceptance of homosexuality was higher in Ukraine, Belarus, and Lithuania/Estonia than in Russia. In Georgia, Kyrgyzstan, and Azerbaijan, the acceptance was significantly lower. Again, despite statistical significance, mean IH scores do not differ substantially. Since initial items were evaluated on a seven-point scale, so was the latent IH factor. The largest difference which is between the Baltic countries and Azerbaijan only slightly exceeds 1 point (Fig. 4.4).

The respondents of certain countries have the following characteristics:
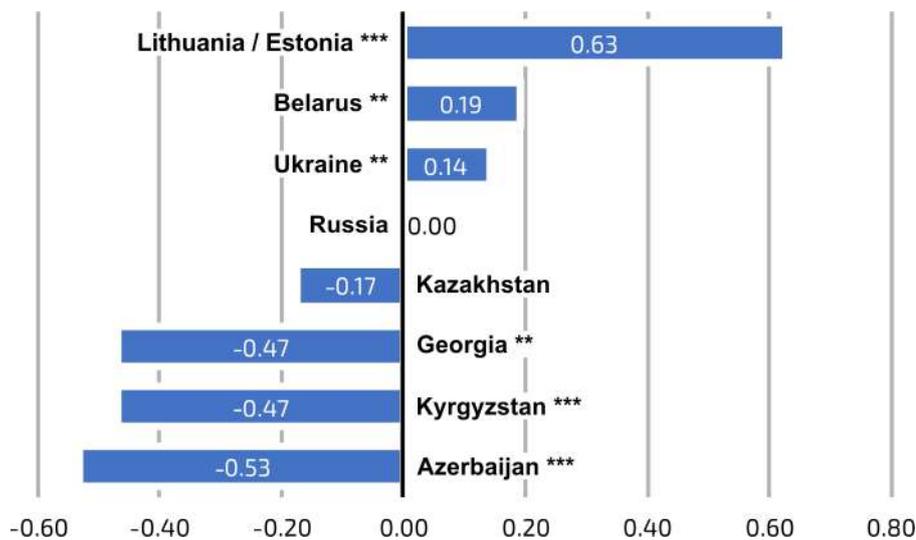
Figure 4.4: Mean latent scores of the SIHS in different countries in comparison with Russia
The mean score of IH for Russia is equated to zero and is chosen as a baseline for comparison, which does not mean that there is "zero" homonegativity in Russia
** Significant difference from the Russian score at $p = 0.01$
*** Significant difference from the Russian score at $p = 0.001$

- Azerbaijan: IH has a greater effect on the moral acceptability of homosexuality, i. e. this item is relatively more significant in calculating the scale. Meanwhile, discomfort with feminine homosexuals is relatively less significant.

- Georgia: homonegativity is less related to social situations with gays. When compared with other countries with the same level of homonegativity, overall social comfort with gay men is on average higher, and comfort in gay bars is lower.

- Kyrgyzstan: as in Georgia, homonegativity is less related to social situations with gays. However, there is a stronger relation to moral acceptability of being gay.

- Lithuania/Estonia: items on public identification as gay perform differently. Respondents were slightly less comfortable with discussing homosexuality, but more comfortable in the company of an obvious gay at the same IH.

- Russia: respondents were less comfortable with feminine men at the same level of IH.

4.8. Factors Associated with the Homonegativity Scale

Hypothetical Links. We consider associations between IH and risky behavior, HIV testing, coverage by services for MSM, and involvement in organizations for gay and bisexual men in subsequent text (see Sections 5.5, 6.6, 7.5, 8.3 respectively). Here, we focus on the

socio-demographical factors of internalized homonegativity. This will hint ar groups of MSM with greater homonegativity. Besides that, verification of theoretically predicted links will additionally confirm the validity of the scale.

Religiosity can be associated with lower acceptance of own homosexuality. Christianity and Islam that prevail in the region are known for negative attitudes towards homosexuality. If MSM living in the region is religious, he is more likely to have acquired negative religious views on homosexuality, and have a higher IH (for American findings see [80, 81]).

People may be more ready to accept their homosexuality as they get older. Therefore, we expect that, on average, older respondents will have lower IH [1, 35, 58, 62].

A higher level of education is associated with low IH, which may be due to greater awareness about homosexuality and a more favorable social environment [1, 22, 46, 55, 82].

Living in smaller domiciles, which means outside large cities with more tolerant environment, may contribute to higher IH [22].

We have described above that higher IH usually means that MSM is less out about his sexual orientation. More homonegative MSM have less tendency to identify themselves as exclusively homosexual, and to be in a romantic relationship with men [10, 35, 61, 82, 83]. Based on this, MSM who have steady male partners and/or live together with him should be less homonegative, while those who are married to women should be more homonegative.

To test these hypotheses, we utilize structural equation modeling with the SIHS latent factor score as a dependent variable.

Two-dimensional Links between the SIHS and Other Factors by Country. Table 4.3 depicts the regression parameters between the latent scores of the SIHS and their predictors for each country. In all eight countries, bisexual or other (including heterosexual) SO is associated with higher internalized homonegativity, so does greater degree of concealment of own sexual orientation. The only instances of insignificant associataions are the case of other sexual orientation in Kazakhstan, and the case being out in Azerbaijan.

In six of the eight countries (except Georgia and Kazakhstan), living with a male partner is significantly associated with lower IH (the reference category here is cohabitation with parents, relatives, or acquaintances). In Kyrgyzstan, Russia, and Ukraine, those living with a wife or a girlfriend had on average higher homonegativity. In these countries, as well as in Kazakhstan, there is a similar significant association with legal marriage.

Residence outside of capital cities, in small towns or villages, related to significantly higher IH in the case of Azerbaijan, Russia, and Ukraine. In Belarus and Kyrgyzstan, a significant association was observed only when comparing the capital with small towns/villages.

Higher religiosity was also associated with lower acceptance of homosexuality in the majority of countries, except in the Baltic countries and Kyrgyzstan. In Georgia, the regression coefficient was not so small.

Significant associations with age and education were observed less frequently and not always in the predicted way. Age related to IH only in Georgia, Kyrgyzstan, and Russia, and only in Russia was an older age associated with greater acceptance of homosexuality. A significant difference in IH between respondents with higher education and those without any

higher education was observed in Lithuania/Estonia and Kazakhstan only. In Kazakhstan, those with lower education have lower homonegativity (contrary to the expectations).

Modeling of SIHS Factors. We included significant predictors from the previous stage into SEM models with multiple independent variables (Table 4.4). Most of the countries keep significant associations with sexual orientation and its outness. Significant associations between IH and cohabitation with a male partner is retained only in Russia and Azerbaijan. Moreover, significant associations with the type of residence almost disappeared. This allows us to conclude that they were present mostly due to the differences in SO and outness among MSM in different cities and with different types of cohabitants.

The inverse association between religiosity and IH remains significant in almost all cases, i. e. for Belarus, Georgia, Kazakhstan, Russia, and Ukraine.

The association between age and IH retained its significance and direction for Georgia, Kyrgyzstan, and Russia, and became significant for Ukraine in the presence of other variables. For Ukraine and Russia, the association is positive: homosexuality acceptance increases on average with ageing. It is still negative in Georgia and Kyrgyzstan.

The level of education retained significance for Kazakhstan's respondents, became insignificant in the Baltic countries, and gained significance in Russia. However, these associations are counterintuitive: lower levels of education are associated with lower IH and greater acceptance of oneself. It is difficult to say at the moment what a reason could be for that.

Table 4.3: Unstandardized coefficients of *bivariate* regressions by country. SIHS latent factor score is a dependent variable

	Azerbaijan	Belarus	Lithuania/Estonia	Georgia	Kazakhstan	Kyrgyzstan	Russia	Ukraine
N	116	491	192	147	217	175	5074	1329
Sexual orientation (Ref. = Gay)								
Bisexual	−0.83*	−0.37***	−1.23***	−0.79*	−0.88*	−1.21***	−1.15***	−1.08***
Other (incl. heterosexual)	−1.87***	−0.30***	−1.66***	−1.02*	−0.86	−1.62***	−1.34***	−1.52***
How many know about one's SO (Ref. = None):								
A few/Less than half	1.05*	0.93***	0.95**	0.69*	0.92***	1.02**	0.89***	0.84***
All/More than half	0.65	1.74***	1.84***	1.99***	2.15***	2.20***	1.77***	1.79***
Place of residence (Ref. = Capital city)								
Other large city	−1.01*	−0.07	−0.19	−0.27	0.39	−0.85	−0.33***	−0.34***
Small town/village	−1.20*	−0.42*	−0.32	−0.28	−0.10	−1.19**	−0.40***	−0.61***
Education (Ref. = Completed higher education)								
Incomplete higher education	0.06	−0.01	−0.22	0.40	0.11	−0.11	0.03	0.07
None	−0.19	−0.08	−0.55*	0.62	0.60*	0.06	0.09	−0.01
Married (1=yes)	−0.61	−0.26	0.09	0.59	−0.07	−1.11**	−0.46***	−0.47**
Cohabitation (Ref. = Not with sexual partners)								
Live alone	−0.05	−0.02	−0.05	0.27	−0.04	−0.27	0.001	0.19
With wife/female partner	−0.34	−0.56	−1.19	0.12	−0.69	−0.88*	0.60***	−0.45**
With male partner	2.03***	0.47*	0.63*	0.99	0.36	0.69***	0.64***	0.63***
Age, years	0.01	0.01	0.01	−0.03*	−0.01	−0.04**	0.01***	0.01
Religiosity (0–10 points, 10=very religious)	−0.12*	−0.09**	−0.06	−0.51***	−0.19*	0.09	−0.06***	−0.08***

Ref. — category of variable with which the effect of other categories is compared
*Significance of coefficients: * $p = 0.05$; ** $p = 0.01$; *** $p = 0.001$*

Table 4.4: Unstandardized coefficients of *multiple* regressions by country. SIHS latent factor score is a dependent variable

	Azerbaijan	Belarus	Lithuania/Estonia	Georgia	Kazakhstan	Kyrgyzstan	Russia	Ukraine
N	116	491	192	147	217	175	5074	1329
Sexual orientation (Ref. = Gay)								
Bisexual	−0.67	−0.29***	−0.74*	−0.32	−0.33	−0.77*	−0.23***	−0.58***
Other (incl. heterosexual)	−1.52**	−0.24***	−1.30*	−0.50	−0.33	−0.91	−0.19***	−0.98***
How many know about one's SO (Ref. = None)								
A few/Less than half	0.60	0.30***	0.38	0.51	1.10***	0.77*	0.24***	0.62***
All/More than half	0.23	0.44***	1.05*	1.39***	2.15***	1.75***	0.41***	1.42***
Place of residence (Ref. = Capital city)								
Other large city	−0.79	–	–	–	–	−0.25	−0.06**	−0.14
Small town/village	−0.84	–	–	–	–	−0.69	−0.02	−0.18
Education (Ref. = Completed higher education)								
Incomplete higher education	–	–	−0.24	–	0.26	–	0.05**	–
None	–	–	−0.29	–	0.55*	–	0.09***	–
Married (1 = yes)	–	–	–	–	–	0.18	–	–
Cohabitation (Ref. = Not with sexual partners)								
Live alone	−0.06	−0.01	−0.12	–	–	–	−0.02	0.05
With wife/female partner	0.29	0.06	−0.59	–	–	–	−0.01	0.14
With male partner	1.27**	0.04	0.25	–	–	–	0.08***	0.20
Age, years	–	–	–	−0.03*	–	−0.05***	0.11***	0.01*
Religiosity (0–10 points, 10=very religious)	–	−0.12*	–	−0.15**	−0.15***	–	−0.10***	−0.06**

Ref. — *category of variable with which the effect of other categories is compared*
Significance of coefficients: * $p = 0.05$; ** $p = 0.01$; *** $p = 0.001$

Conclusions

Internalized homonegativity is an attitude among MSM when they adopt the predominant stigma towards homosexuality, harbor negative views about it, and, as a result, about own attraction to men. Countries with LGB-friendly legislation and relatively favorable public opinion towards homosexuality tend to have lower average IH. CEECA countries are not among them.

Many studies demonstrate the association between IH and various aspects of MSM sexual health. Evidence of the associations with unprotected anal sex, and alcohol and drug abuse is mixed: some studies displayed such an association, while others do not. Still, they suggest possible indirect associations between IH and not using condoms. At the same time, there is unambiguous evidence that internalized homonegativity makes response to HIV epidemic among MSM less effective. High IH is a barrier to HIV testing and participation in a gay and bisexual community, and in organizations for gays and other MSM. It is also associated with a lower coverage by prevention and its lower efficiency. Although internalized homonegativity should be a bigger issue in CEECA countries than in, for example, Western Europe, there is almost no research on its consequences.

For its measurement, we chose the Short Internalized Homonegativity Scale (SIHS), initially developed by Ross and Rosser [3], and improved in later studies [1, 8, 10].

The scale demonstrated sufficient reliability in all countries according to Cronbach's α. According to multi-group CFA analysis, the SIHS demonstrated partial scalar invariance, between available language groups and countries.

In general, the scale reavealed its applicability for the countries of the region. The Russian, Ukrainian, Lithuanian, Georgian, and, to a lesser extent, Armenian versions are quite suitable for use in other studies (the Estonian version was already used earlier [68, 69]. The Azerbaijani, Kazakh, Kyrgyz, Macedonian, and Romanian versions showed sufficient consistency, but require further verification of their validity.

The average IH in all countries was rather low, and most of the respondents accept homosexuality and themselves. Although there was significant difference between some countries, it was not substantial. Besides that, the SIHS performance had certain peculiarities in different countries. They were about associations of the SIHS latent score with itemds related to social comfort with other gays, and public identification as gay.

For most of the countries, IH was significantly associated with sexual orientation and being out as MSM. Bisexual respondents and respondents with "other sexual orientation" had, on average, more pronounced IH than homosexuals. Respondents who were more out had lower IH. Cohabitation and domicile variables had significant associations at first, but they almost ceased if to control for sexual orientation and outness. Religiosity related significantly to higher IH in about a half of the countries. Age and education were significantly associated with IH in a minority of countries, and not always in the same direction that the literature had predicted.

5. Sex, Risky Behavior, and Condom Use

5.1. Sex with Males Six Months before the Study

The majority of respondents had engaged in sex with men in the previous six months before the study: from 81% in Armenia and Kazakhstan to 93% in Macedonia (Fig. 5.1). A slightly lower percentage had engaged in either insertive or receptive anal sex (from 70 to 83%).
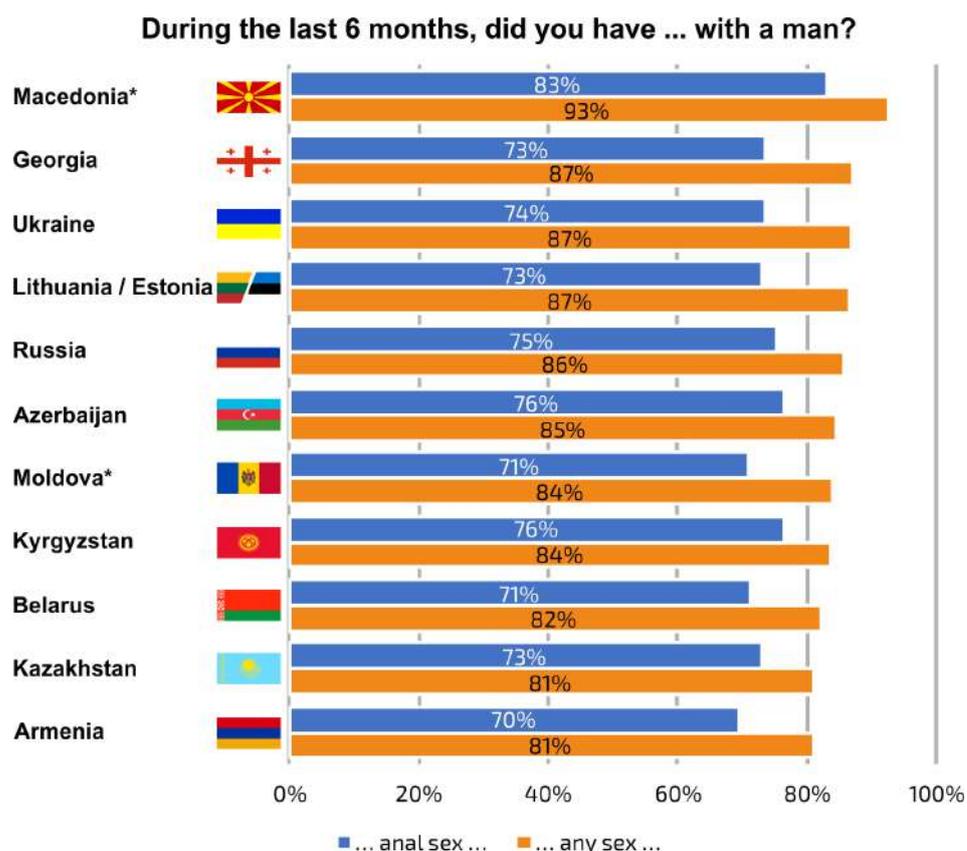
Figure 5.1: Having sex with males in the last 6 months before the survey, % (*Differences between countries are significant at p < 0.001, * N < 100*)

In our study, sexual partners are classified as follows: *steady* — a partner with whom one has had regular sex for a sufficiently long period of time, and the respondent neither gives nor receives any material compensation; *casual* — an unfamiliar partner, with whom there has been sexual contact once or a few times without material compensation; *commercial* — the respondent gave or received material compensation for sex.

We subsequently classify sexual partners as either steady or non-steady (all others).

If we examine only those who had anal sex, there is a wide range in the number of sexual partners in the previous six months. Although some indicated that they had more than 50 casual partners, the majority had from 0 to 3 partners (Fig. 5.2).
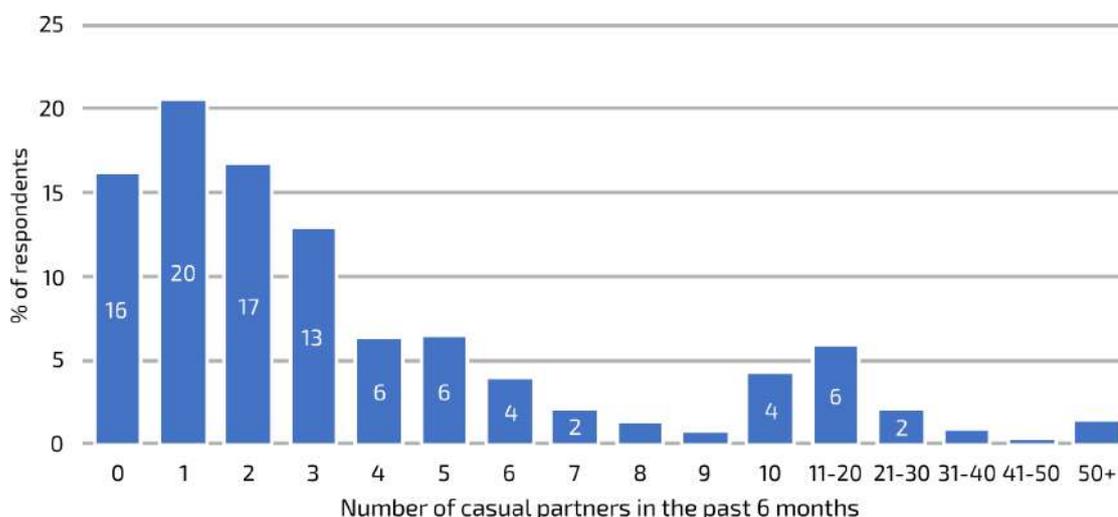
Figure 5.2: Number of casual partners with whom respondents engaged in anal sex in the previous 6 months before the survey, %

The quantity of casual partners varies somewhat within the samples of different countries. In Figure 5.3, there are distributions in six countries with big enough subsamples. The medians for Belarus, Russia, and Ukraine were 2 partners, and 3 for the other countries.

We also asked respondents whether their last anal sex had been with a steady, casual, or commercial partner. The responses varied slightly from country to country (Fig. 5.4).

Both the last steady and the last casual partners were more or less common. In Macedonia and Moldova steady partners had slightly larger shares. In Kazakhstan, Kyrgyzstan, Belarus, Russia, and Ukraine, casual partners were more common (up to 10% difference). In Georgia, Armenia, and Azerbaijan, casual partners were about twice as popular as steady ones. 14% of Azerbaijani respondents found it difficult to decide what kind of partner it was.

It is worth mentioning that the number of casual partners in the last six months is significantly associated with a kind of the last anal sex partner (Fig. 5.5). Among those who had had the last anal sex with a steady partner, 37% had no casual partners, and 21% had only casual partner. Only 11% of such respondents had more than 5 partners. Among those whose last anal sex had been with a casual partner, a half had 2-5 partners, and 30% had more than 5 casual partners. Those whose last anal sex had been with a commercial partner, had a similar to the "last-causal" distribution.

This means that the question on a respondent's last sexual partner may be used as a proxy variable to assess whether he is in a steady relationship, and, consequently, whether he has any casual partners.
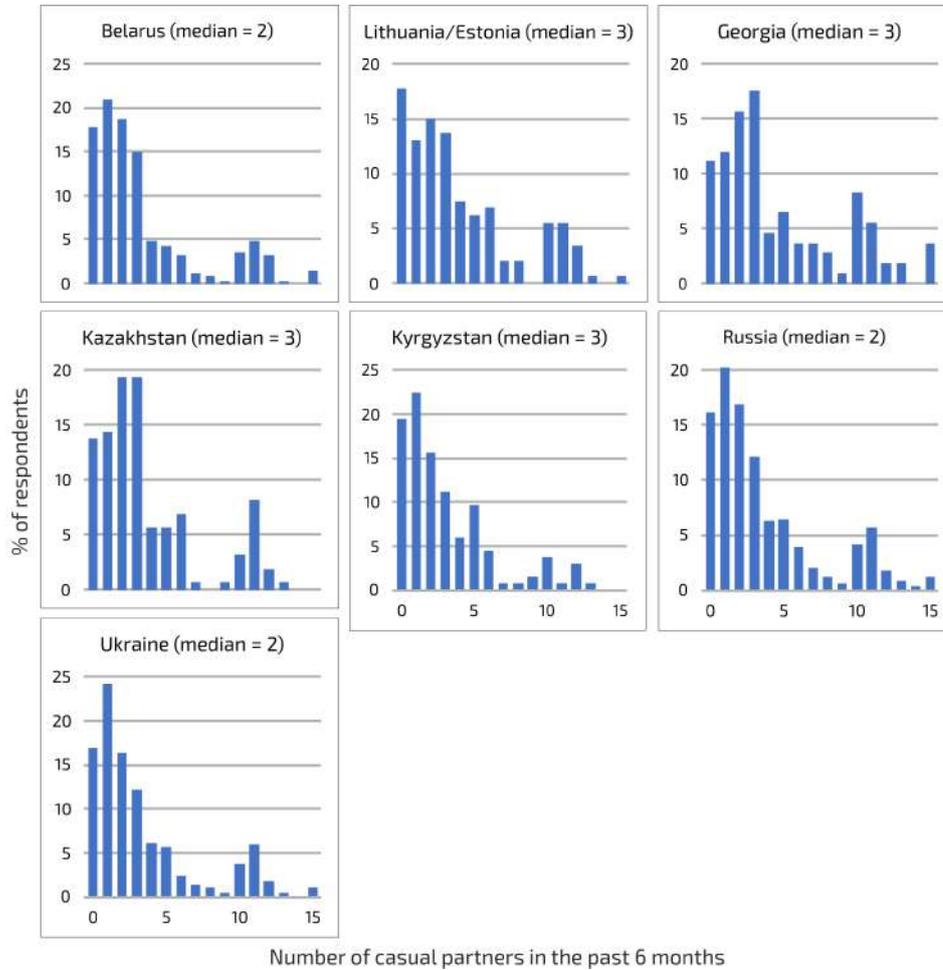
Figure 5.3: Number of casual partners with whom respondents engaged in anal sex in the previous 6 months before the survey, by country, % (*Differences in medians are significant at $p < 0.001$*)
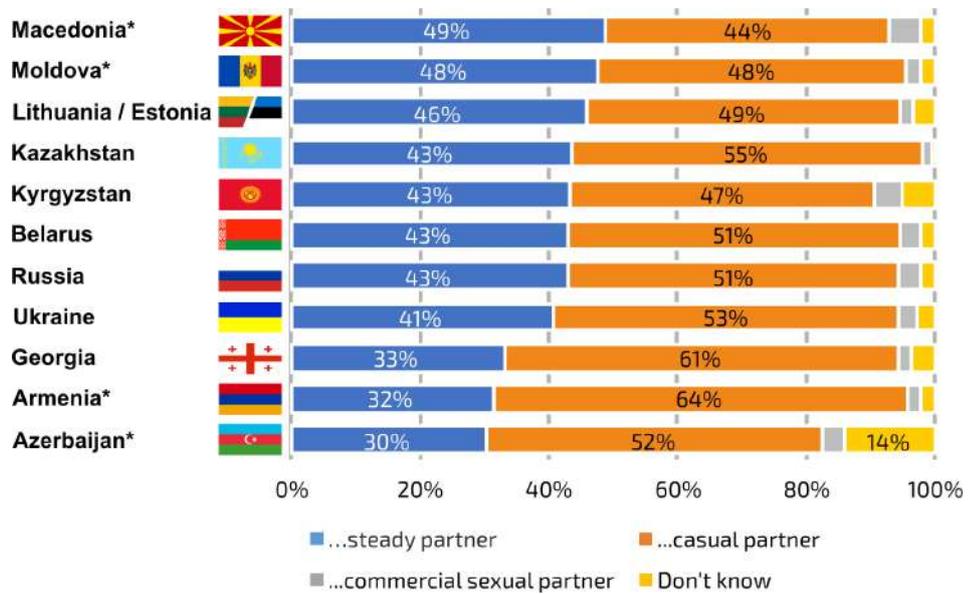
Figure 5.4: Most recent male partner with whom respondents had anal sex with (of those who had anal sex in the previous 6 months before the survey), % (*Differences between countries are significant at p < 0.001, * N < 100*)

Number of casual partners in the previous 6 months
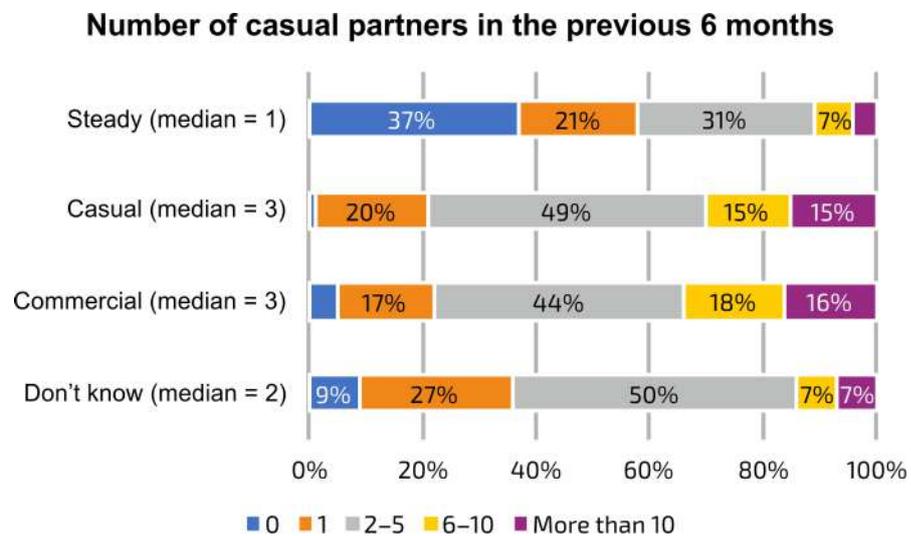
Figure 5.5: Distribution of the recent casual partners number by the type of last sexual partner (*Differences between types of partners are significant at p < 0.001*)

5.2. Condom Use

Availability of Condoms.   It is difficult to overestimate the simplicity and significance of condom use as a method of HIV prevention, as well as the importance of maximizing the access of MSM to condoms.

   The majority of respondents had never been in a situation when they needed a condom but did not have it on hand (Fig. 5.6). Still, a share of respondents that encountered such situations was considerable.
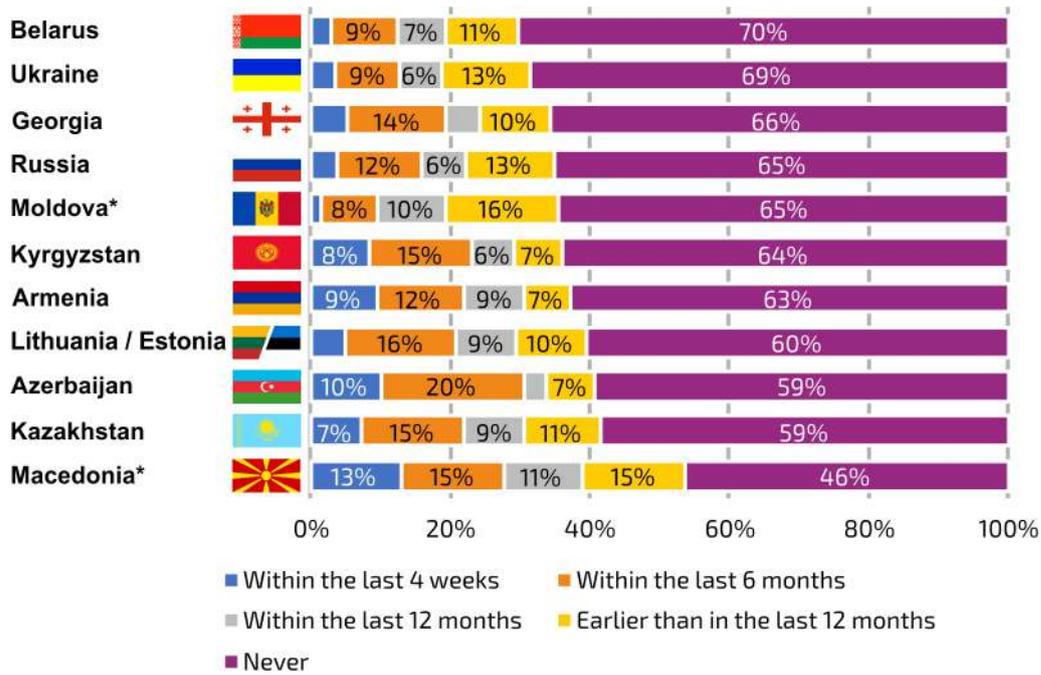
Figure 5.6:   "When was the last time you needed a condom, but did not have one handy?", by country, % (*Differences between countries are signif. at p < 0.001, * N < 100*)

   MSM respondents in Macedonia had a relatively low access to condoms: only 46% had never had a problem with access, while 13% did not have a condom handy in the last six months, and another 26% in the previous year. In the other countries, at least 60-70% of respondents had no problems with access to condoms. Apart from Macedonia, access to condoms was the most problematic for respondents in Azerbaijan, while MSM in Moldova, Belarus, and Ukraine had the least issues with handy condoms (Fig. 5.6).

Condom Use During the Last Anal Sex.   The use of condoms during the last anal sex is often regarded as a general indicator for condom use rate. In this case, the rate of condom use for the surveyed MSM is hardly satisfactory (Fig. 5.7). If we consider the last anal sex with any type of partner, then the condom use varied from 82% in Georgia, and 77% in Armenia, to 55% in Kyrgyzstan and Macedonia, and 50% in Azerbijan.
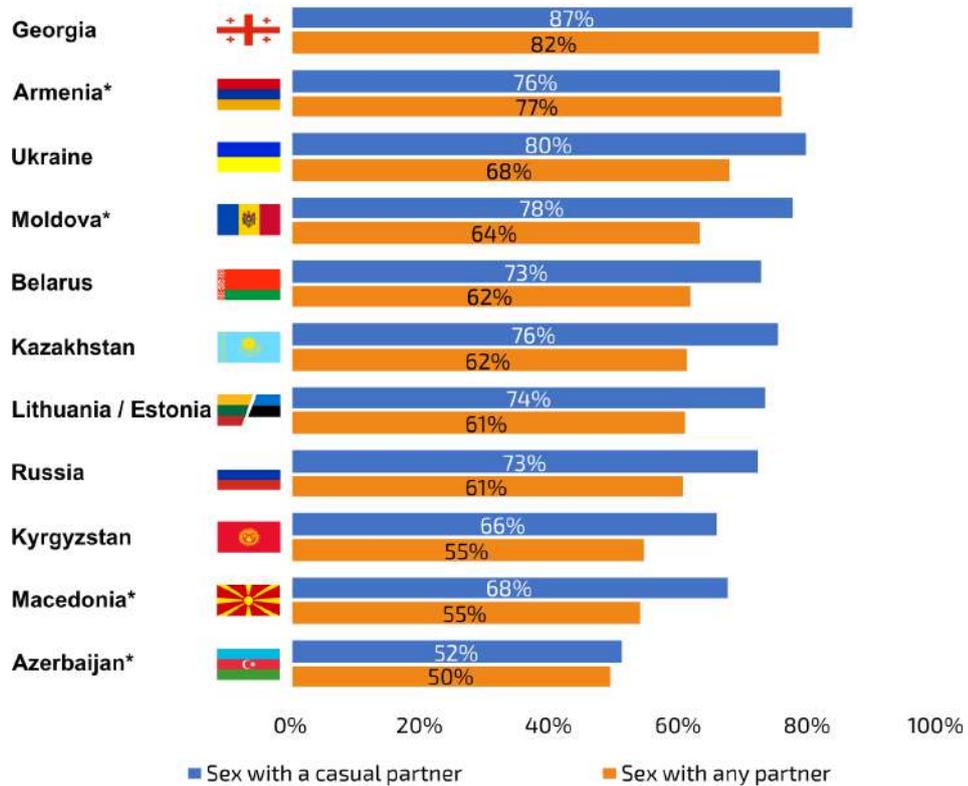
Figure 5.7: Share of those who used condoms during the last anal sex with a man (in the last 6 months), % (*Differences between countries are significant at p < 0.001, * N < 100*)

Some cases of non-use of condoms happened with a steady partner. Thus, we should examine the last sex with non-steady partners more closely. Condom use rates increased then, but not to the same extent. E. g., it increased by 2% only in Azerbaijan. The MSM from this country were in the most unfavorable situation: only a half used a condom during the last sex with a non-steady partner. For most of other countries, condom use during the last sex was 11 to 15% higher for non-steady partners on comparison with all partners.

Regularity of Condom Use with Casual Partners. Sex with multiple casual partners is riskier in terms of HIV transmission. Thus, we asked those who had sex with casual partners in the last six months (61% of the total sample) how often they had used condoms during such encounters.

The result can hardly be deemed satisfactory (Fig. 5.8). Only a half of answered that they had always used a condom during recent anal sex with casual partners. Another quarter responded that they had used condoms in the majority of cases; 8% of respondents indicated that they had never used condoms with casual partners.
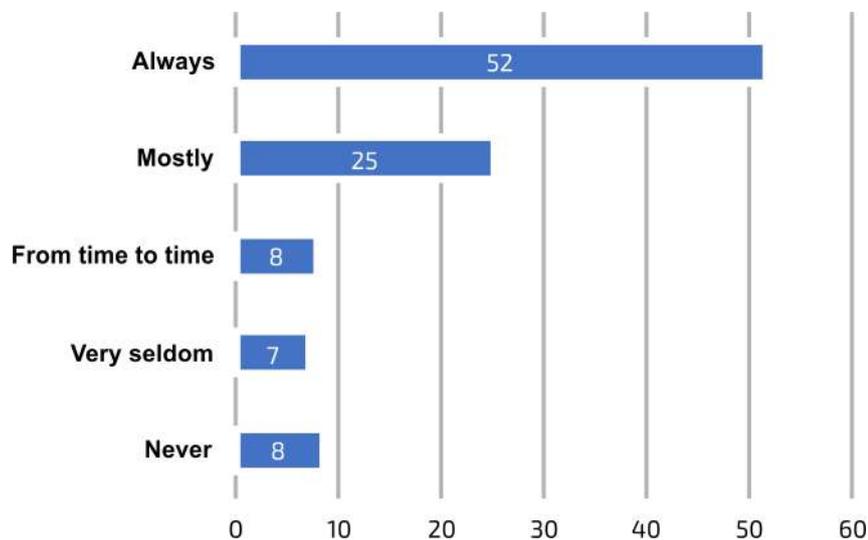
Figure 5.8: Regularity of condom use among respondents who had sexual contact with casual partners in the last 6 months, %

The breakdown by country (Fig. 5.9) again shows that condoms were most regularly used in Georgia, followed by Ukraine. The worst situation was for Azerbaijan.

There is a clear significant association, namely, respondents with larger numbers of sexual partners tended to use condoms more often (Fig. 5.10). However, this pattern is not linear, and it is probabilistic, meaning it is not observed in every individual case.

Respondents that had always used condoms seemed to fall out of the general pattern. Half of them had had from 1 to 5 casual partners in the last six months (3 is a median), while extreme numbers of casual partners were rare.
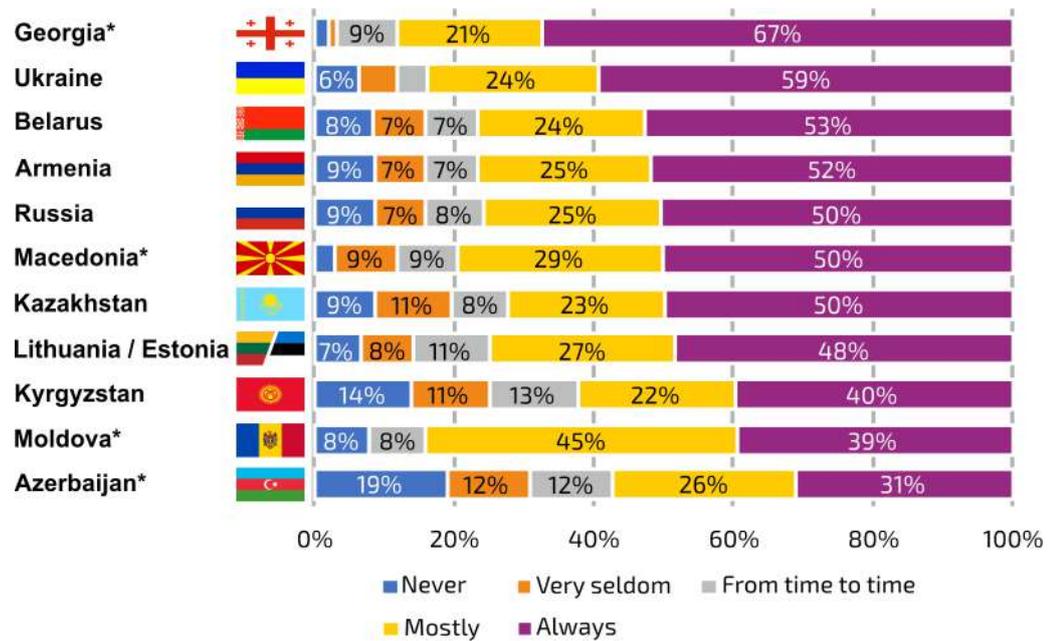
Figure 5.9: Frequency of condom use among respondents who had sexual contact with casual partners in the last 6 months, by country, % (*Differences between countries are significant at p < 0.001, * N < 100*)
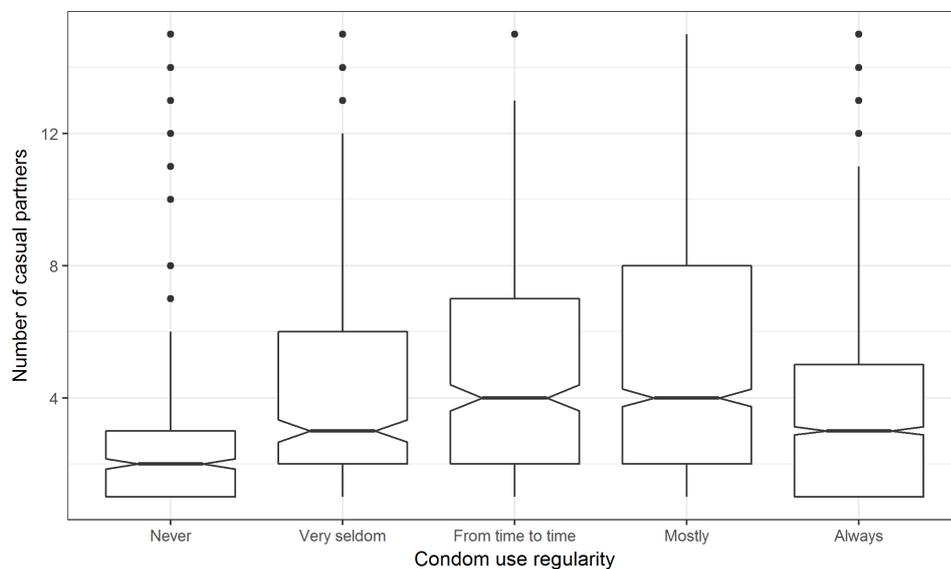
Figure 5.10: Association between the number of casual sexual partners and regularity of condom use (*Difference in the median number of casual sexual partners is significant at p < 0.001*)

Those who had not always used condoms follow the pattern: condoms had been used more often when there had been more casual partners. Those who did not use condoms had 2 partners on average (a median), those who used it very rarely had 3 partners, and those with from-time-to-time use had 4 partners.

The association between the number of partners and condom use regularity was also observed at the country level (Fig. 5.11). Due to insufficient sample size, we aggregated responses for the condom use question. Median numbers of casual partners differ significantly by condom use in each of these countries except Lithuania/Estonia. Those who never used condoms had significantly fewer partners than those who occasionally used them. Permanent condom users were in the middle with a possible exception of Kazakhstan.
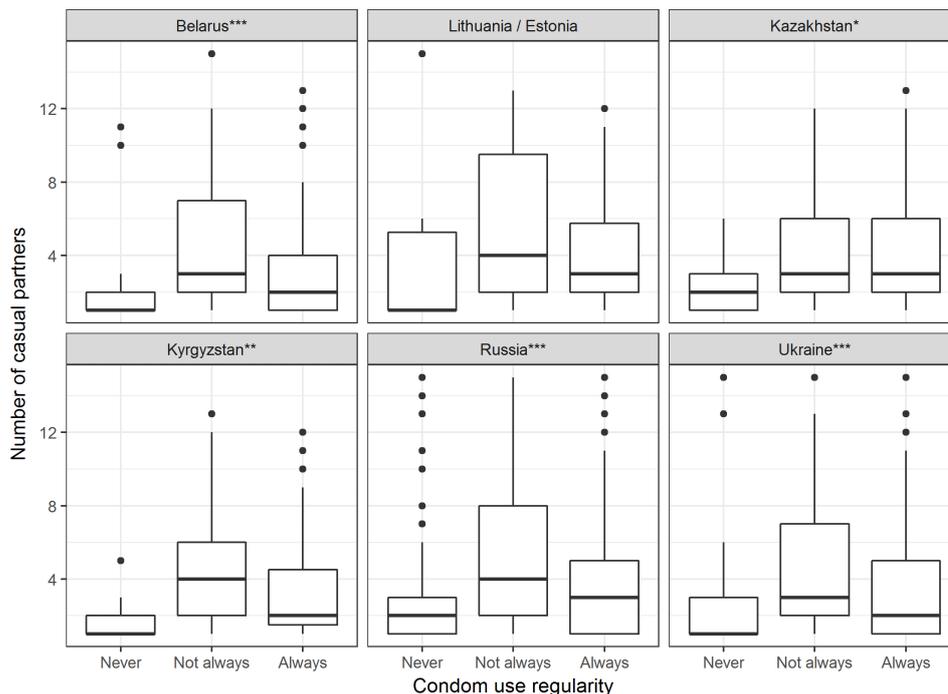
Figure 5.11: Association btw the number of casual sexual partners and frequency of condom use (*Stat. signif. of diff.: * at p = 0.05; ** at p = 0.01; *** at p = 0.001*)

5.3. Commercial Sex Experience

A large share of MSM had had commercial sex in the previous 6 months: prevalence varied from country to country (Fig. 5.12). We defined commercial sex as a situation when a man paid or received money for sex with another man. The smallest share of men who had had commercial sex recently was in Georgia (9%), Lithuania/Estonia and Macedonia (10% each). The largest was in Azerbaijan (18%), Armenia, Moldova, and Kyrgyzstan (16% each).
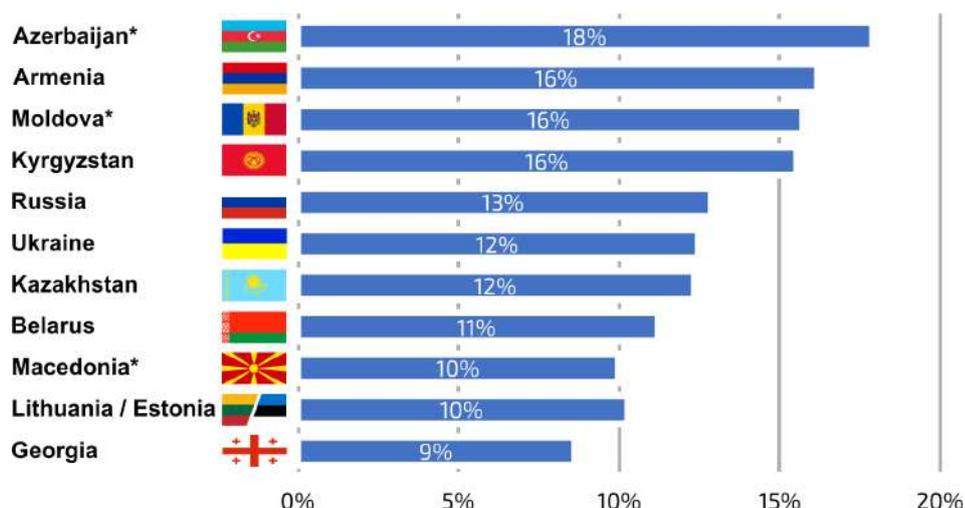
Figure 5.12: Share of respondents with experience with sex with men for money in the last 6 months before the survey (among those who engaged in anal sex in the last 6 months, *N* = 6059), % (*Differences between countries are significant at p < 0.001, * N < 100*)

5.4. Alcohol Consumption During Sex and Condom Use

We assumed that more frequent drinking during sex might be associated with less condom use. It might also relate to the need to feel more at ease because of own homonegativity.

We asked about alcohol use during sex with men in the last six months. Although there is difference between countries (Fig. 5.13), most of men did not drink during sex too often. They did it rarely (22–41%) or not at all (27–44%), which usually made up more than 60%.

Simultaneously, regular drinkers during sex with men tended to use condoms more rarely, including sex with non-steady partners. Among men who always or mostly took alcohol during sex, 59% used condoms during their last time. This figure was 63–65% among those who did it from time to time, seldom or never (Fig. 5.14). If to consider only respondents whose last sex was with a non-steady partner, the difference increased. Out of those who always drank during sex, 64% used condoms during the last time, while for those who drank from time to time, seldom, or not at all, this figure was 76–78%. The differences are significant.

There was a similar situation for regularity of condom use with casual partners (Fig. 5.15). Among those who did not consume alcohol, 57% always used condoms. Of those who consumed alcohol rarely or from time to time, 51% used condoms. Those who mostly consumed alcohol had a rate of 44%, and those who always consumed alcohol had 49%. In addition, those who always drank, had the biggest share of people who had never used condoms with casual partners.

Although the patterns did not seem to be definitive, regular drinking during sex was clearly associated with the fact that condoms were used less often than they could have been.

Figure 5.13: Regularity of alcohol consumption during sex with men in the last 6 months, % (*Differences between countries are significant at $p < 0.001$, * $N < 100$*)
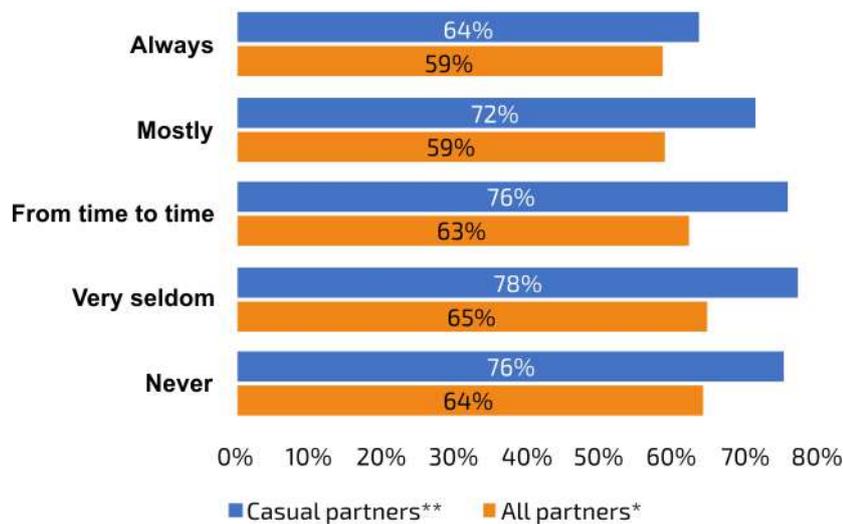
Figure 5.14: Percentage of respondents who used condoms while last engaging in anal sex with all and non-steady partners depending on the frequency of alcohol consumption during sex (*Significant differences: * at $p = 0.05$; ** at $p = 0.01$*)

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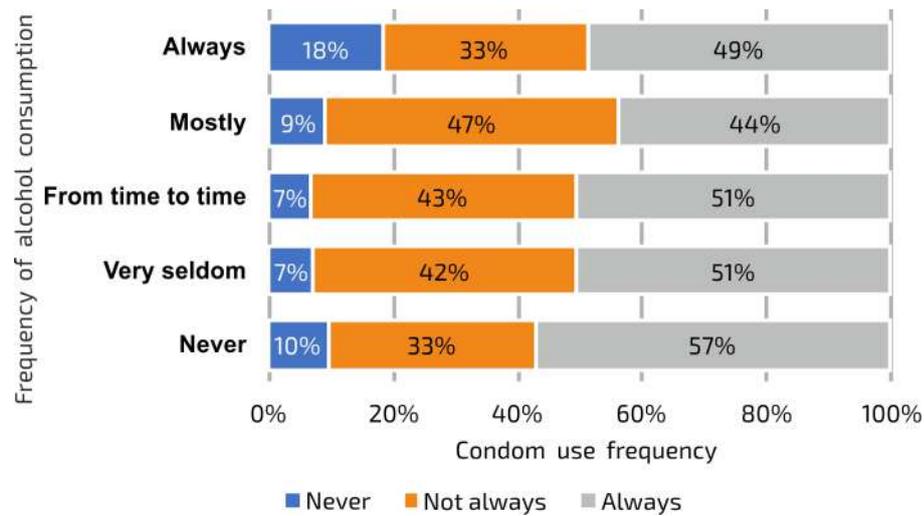
Figure 5.15: Frequency of condom use with casual partners depending on the frequency of alcohol consumption during sex in the last 6 months (*Differences are significant at $p = 0.001$*)

5.5. Associations between Risky Behavior and Internalized Homonegativity

Sex with Other Men. Lower acceptance of one's homosexuality was associated with a rejection of sex with men, at least a regular one (Fig. 5.16). There were very few respondents in our sample who had not had sex in the last six months, and even fewer (98 participants only) who had never had anal sex before. Nevertheless, they had significantly higher IH.

Having a Steady Partner. We assumed previously (Chapter 5.1) that respondents with a steady partner during the last sexual contact were likely to be in a long-term relationship, and to have fewer casual partners. Respondents whose last sex was with a steady partner had significantly higher SIHS score on average, meaning they accepted homosexuality more (Fig. 5.17). The difference is not very substantial though. Such association was observed in all countries with big enough relevant samples (Fig. 5.18). The difference was significant in the Baltic countries, Kazakhstan, Russia, and Ukraine only.

Number of Casual Partners in the Last 6 Months. Was there an association between IH and the number of casual partners in the last six months? Correlation was very weak if we consider all respondents who had sex with men, and slightly stronger if we consider only those without steady partners. In the first case, the Pearson correlation coefficient was 0.03 (significant at the level $p = 0.02$), in the second case it was 0.11 (significant at $p < 0.001$). It could be that respondents with pronounced IH (up to 3 points) were likely to have fewer

Figure 5.16: Average SIHS score by sex with men experience
All differences are significant at p<0.001
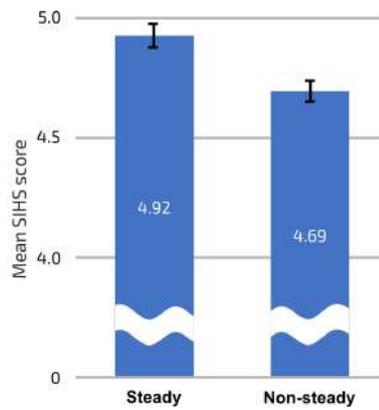
Figure 5.17: Mean SIHS scores by the last sexual partner (*Differences are significant at p < 0.001*)
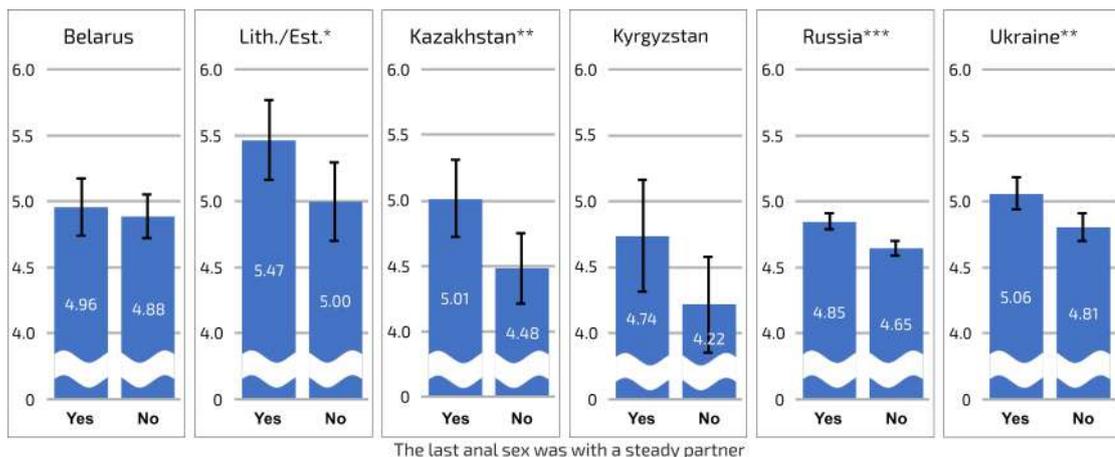
Figure 5.18: Mean SIHS scores by the last sexual partner and country (*Statistical significance of differences: * at p = 0.05; ** at p = 0.01; *** at p = 0.001*)

casual partners, but they were the minority in our sample. The SIHS score and the number of partners could be unrelated for the rest.

A similar analysis for seven individual countries, namely Belarus, Lithuania/Estonia, Georgia, Kazakhstan, Kyrgyzstan, Russia, and Ukraine, both among all (Fig. 5.19), and among respondents without steady partners (Fig. 5.20), showed that the described association is mostly determined by Russian sample. Georgia had an even more pronounced association. There was no evidence for it in other countries though.

Condom Use. Limited access to condoms (i. e. how recently a condom was needed but not available) was not significantly associated with IH (Fig. 5.21). Association between the SIHS and condom use during the last sex seemed strange at first glance. Not using a condom was related, on average, to a higher acceptance of homosexuality(Fig. 5.22, left panel). The difference was negligible, but significant. However, it may be explained by the fact that condoms are used less with steady partners, which assumes lower homonegativity. If steady partners were excluded from the analysis, the difference becomes insignificant (Fig. 5.22, right panel). A by-country analysis confirms that there was no consistent and significant association between IH and condom use during the last sex, especially when excluding steady partners (Fig. 5.23, 5.24).

Regularity of condom use with non-steady partners did not have a significant association with the SIHS as well, either in the entire sample (Fig. 5.25), or in certain countries (Fig. 5.26).

Commercial Sex in the Last 6 Months. Commercial sex experience did not provide significant difference in average SIHS scores for either the entire sample (Fig. 5.27) or within certain countries (Fig. 5.28).
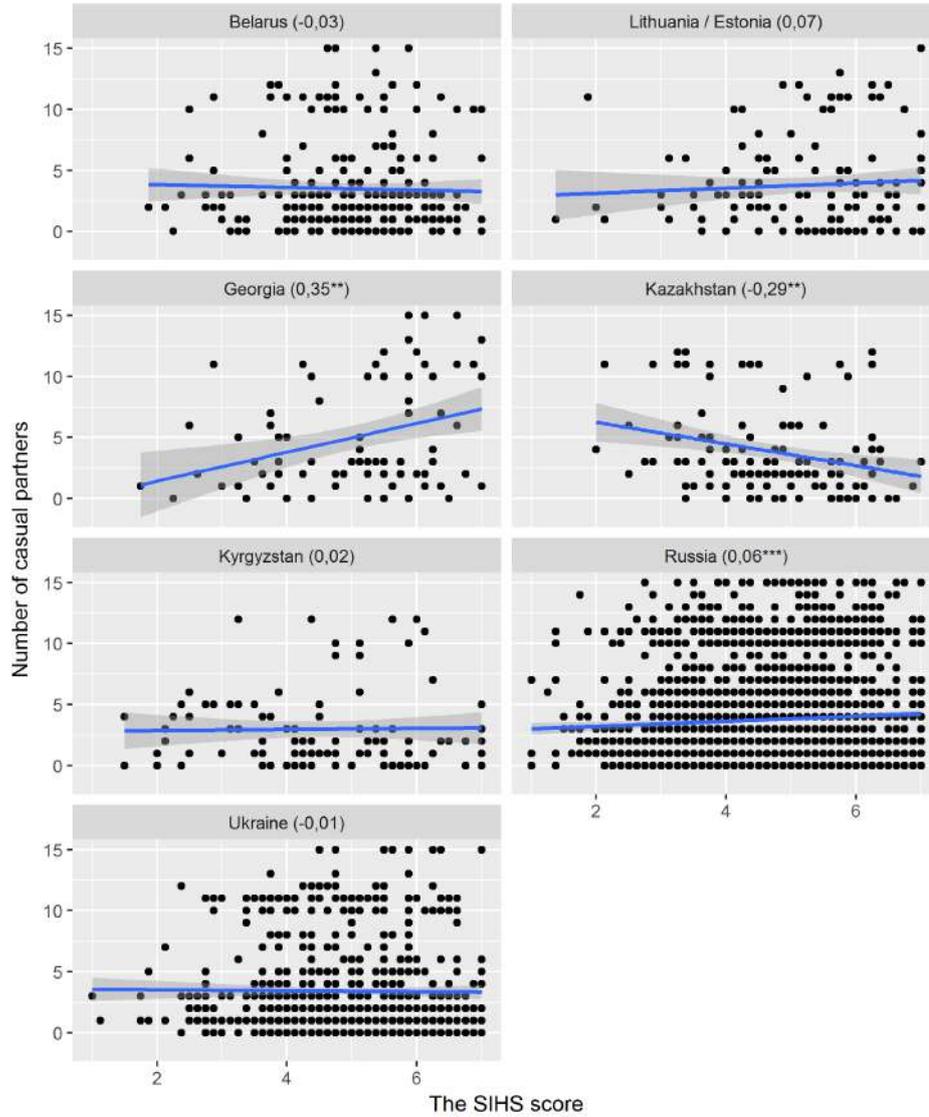
Figure 5.19: Scatter plots with regression curves of casual partners' number on the SIHS scores, by country (*Statistical significance of the Pearson correlation coefficients: * at $p = 0.05$; ** at $p = 0.01$; *** at $p = 0.001$*)
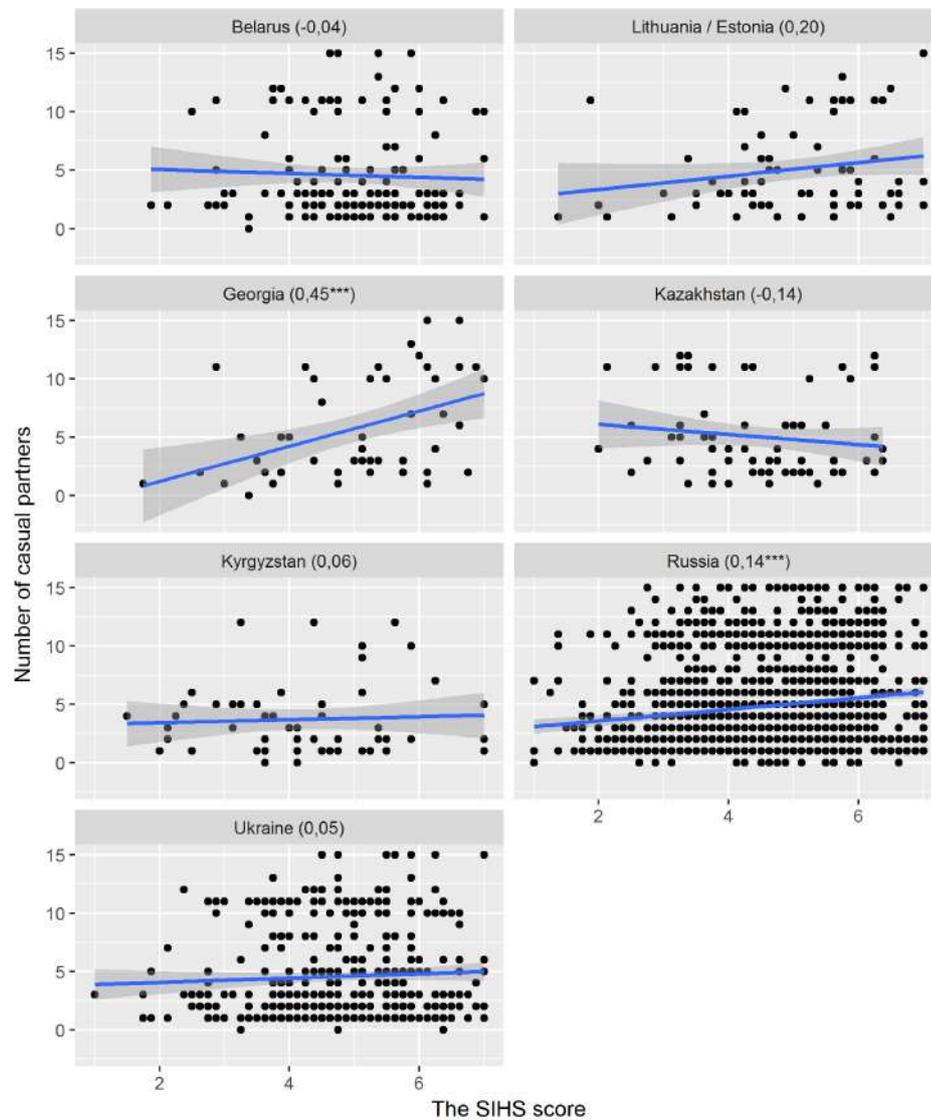
Figure 5.20: Scatter plots with regression curves of casual partners' number on the SIHS scores among respondents whose last sexual contact was with a non-steady partner, by country (*Statistical significance of the Pearson correlation coefficients: * at $p = 0.05$; ** at $p = 0.01$; *** at $p = 0.001$*)
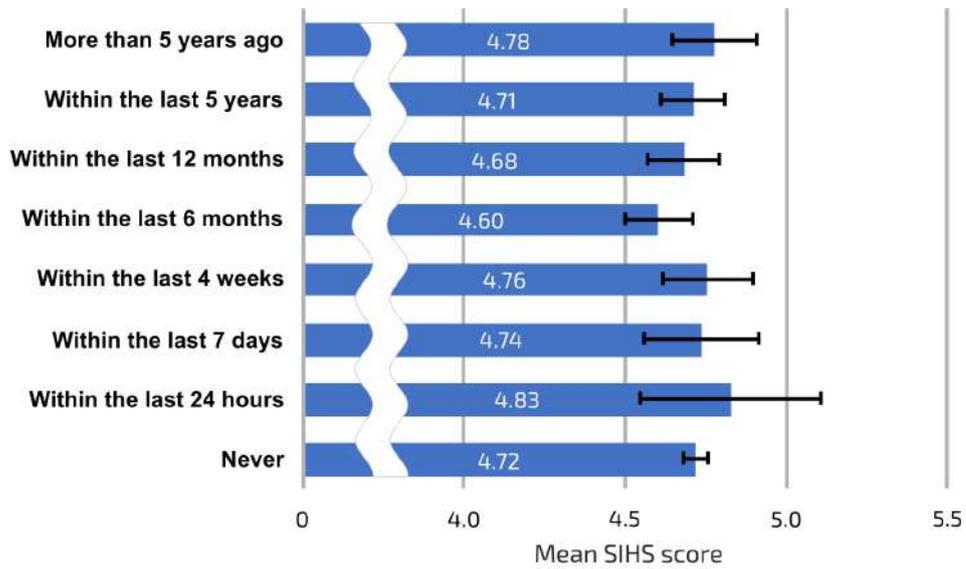
Figure 5.21: Mean SIHS scores by the last time a condom was needed but was not handy (*No significant difference at p* = 0.05)
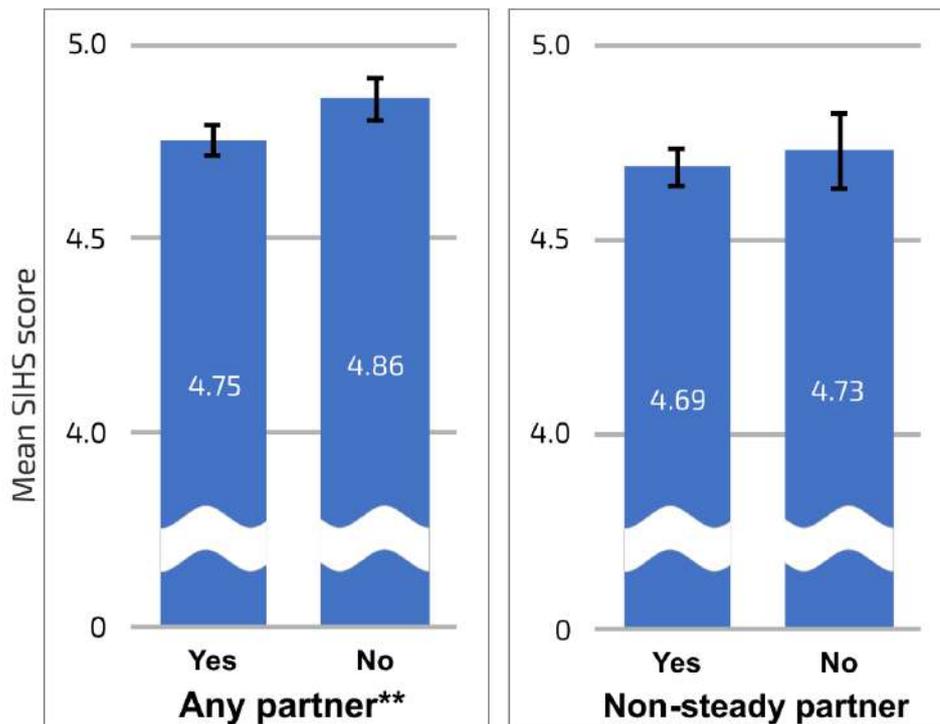
Figure 5.22: Mean SIHS scores by condom use during the last anal sex with a man (*** The difference is significant at p* = 0.01)

Condom use during the last anal sex, any partner
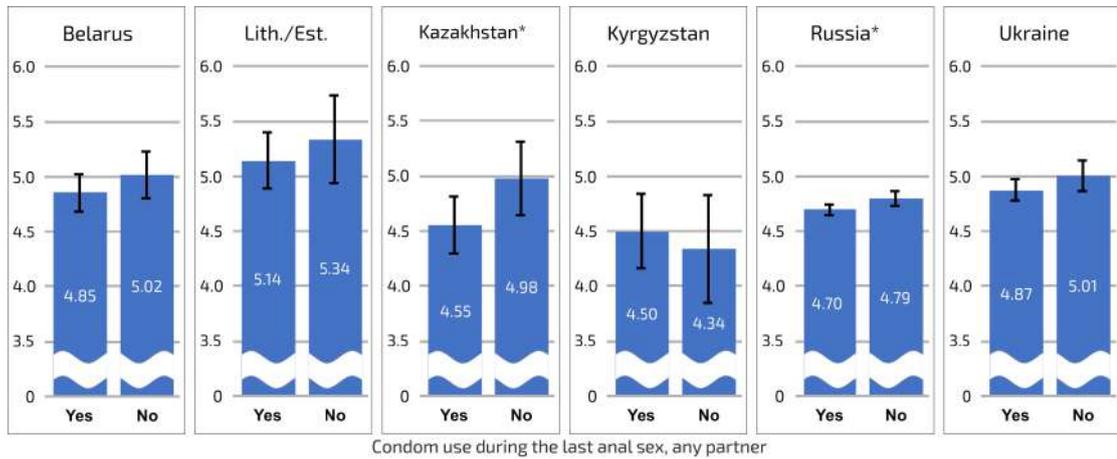
Figure 5.23: Mean SIHS scores by country and condom use during the last anal sex with men (** Difference is significant at p = 0.05*)

Condom use during the last anal sex, non-steady
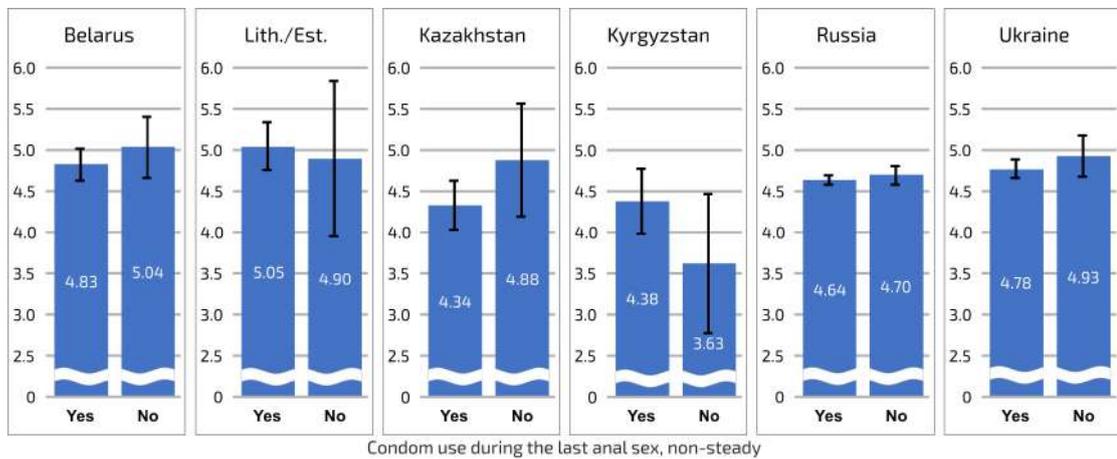
Figure 5.24: Mean SIHS scores by country and condom use during the last anal sex with a non-steady partner (*Significant differences are absent at p = 0.05*)
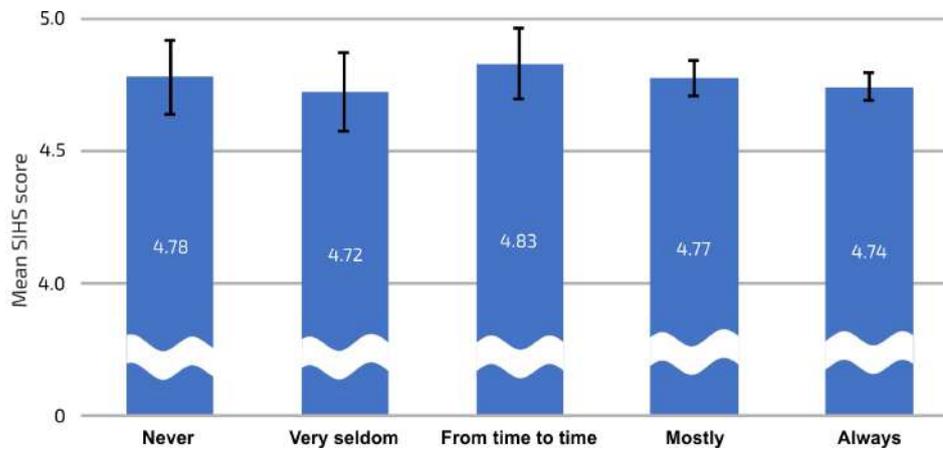
Figure 5.25: Mean SIHS scores by regularity of condom use with casual partners (*Significant differences are absent at $p = 0.05$*)
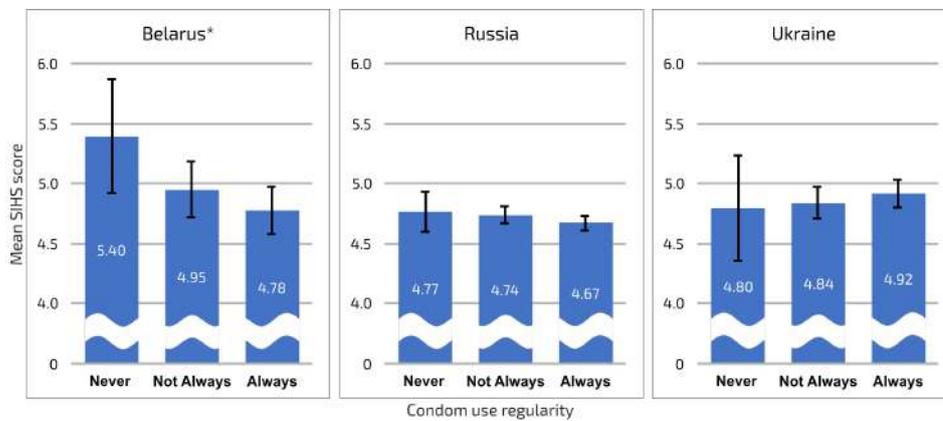
Figure 5.26: Mean SIHS scores by country and regularity of condom use with casual partners (*Differences were significant at $p = 0.05$. At the same time, there were no pairwise differences*)
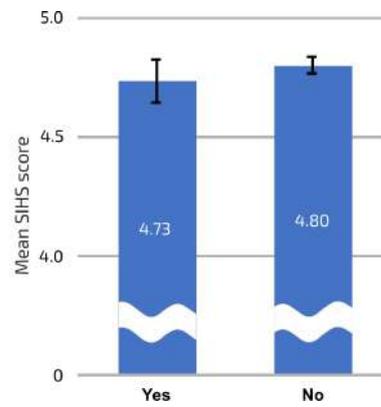
Figure 5.27: Mean SIHS scores by commercial sex experience (*Significant differences are absent at p = 0.05*)
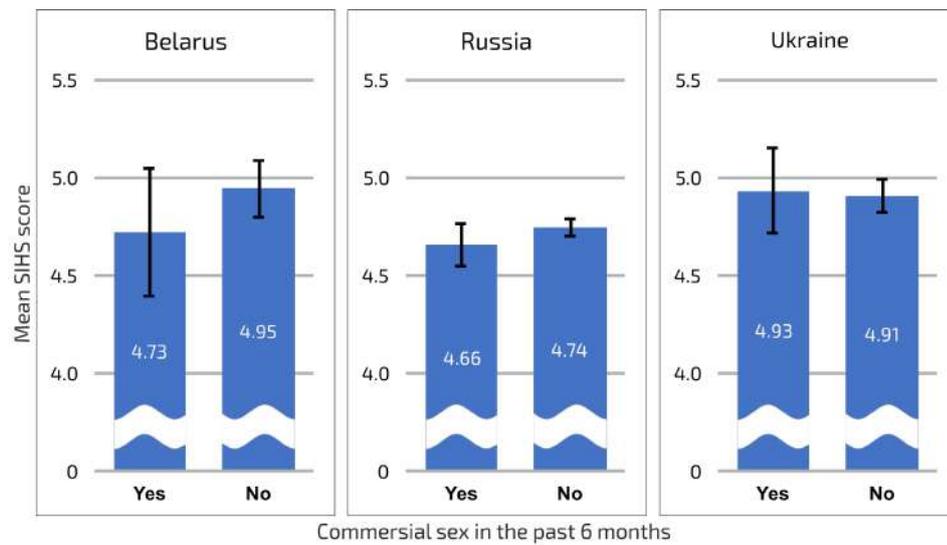
Figure 5.28: Mean SIHS scores by commercial sex experience and country (*Significant differences are absent at p = 0.05*)

Consumption of Alcohol during Sex with Men in the Last 6 Months. Drinking while having sex with men is significantly associated with IH, at least in some countries. But the association is not linear, and lacks satisfactory interpretation.

Those who used alcohol seldom had, on average, lower homonegativity than respondents who either never drank, or often/always drank during sex (Fig. 5.29). The two latter categories did not have significant difference.
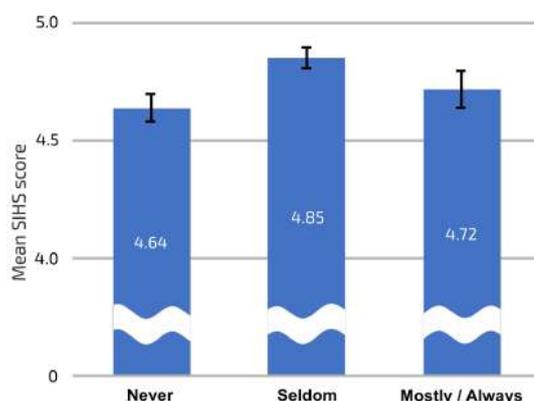
Figure 5.29: Mean SIHS scores by alcohol consumption during sex with a man (*Difference is significant at p* = 0.001)

A similar analysis in nine countries revealed significant difference in four of them (Fig. 5.30). Difference among respondents in Russia was the same as for the entire sample. In Azerbaijan and Ukraine, there was only significant difference between those never consuming alcohol and those consuming it seldom: homonegativity was lower among the latter category. In Kyrgyzstan, significant difference was found only between the extreme categories: those who never drank alcohol and those who often/always drank during sex.

In general, it seems that a lower IH is associated with seldom drinking during sex, but it was not observed in all countries. As we found before (see Section 5.4), only regular or constant drinking during sex was associated with non-use of condoms. In this case, decreased homonegativity may be slightly related to less condom use via alcohol consumption only in Ukraine and Kyrgyzstan.

5.6. Factors affecting Condom Use during Last Sexual Contact

We estimated a binary logistic model (Table 5.1) to assess the effect of internalized homonegativity on condom use, as well as to test an association with other factors. No direct significant association between the SIHS and condom use during the last anal sex was found.

Significant factors included the following. If the last sex was with a steady partner, or if the respondent lived with a male partner, it related to smaller average likelihood of condom use. SO itself was not significantly associated with condom use, but being more out implied higher average probability to use a condom during the last sex.
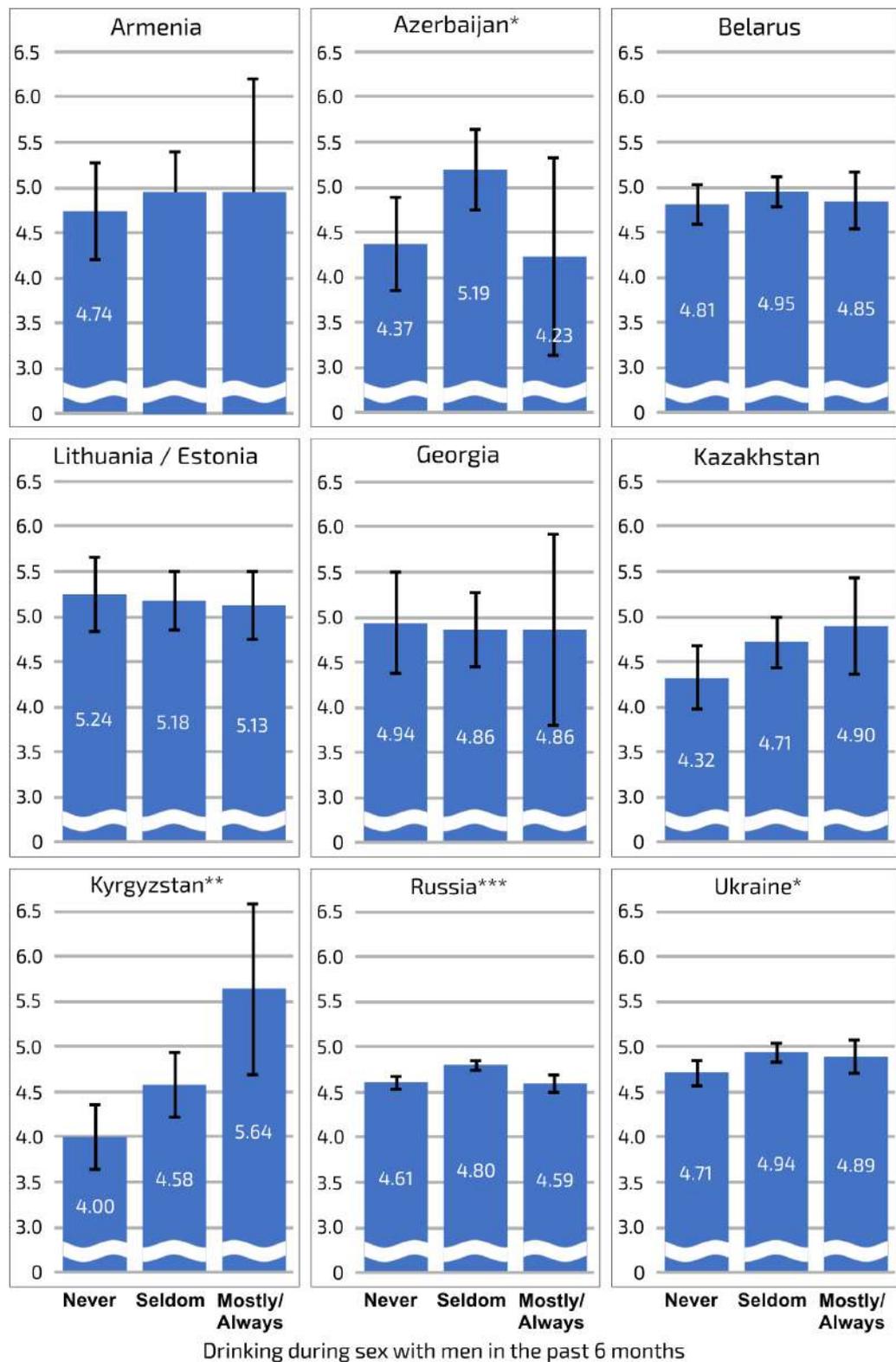
Figure 5.30: Mean SIHS scores by alcohol consumption during sex with a man by country (*Signif. of diff.:* * at $p = 0.05$; ** at $p = 0.01$; *** at $p = 0.001$)

Access to condoms and coverage by prevention programs were significantly related to condom use. Respondents who did not have condoms handy within the last six months were less likely to use them during the last sex. On the other hand, those who received free condoms, or who had an organization for MSM around were more likely to use condom. As we expected, respondents who mostly or always drank alcohol during sex had lower odds ratio (OR) to use condom at the last time.

Respondents who had education below Master's degree, or who was older, or who lived outside of the capital cities were less likely, on average, to use condoms. Even if to control for all of the abovementioned factors, respondents in Azerbaijan had significantly lower OR of condom use, while respondents in Georgia had significantly higher OR compared with the reference category (which were respondents from Russia).

Conclusions

Number of sexual partners. In all countries, except Macedonia and Moldova, most of men had the last anal sex with a casual partner. Most of respondents had from 0 to 3 casual partners in the last six months. If a respondent had a steady partner, an average number of his casual partners was lower. Experience with commercial sex was also relatively common.

Condoms. In most of the countries, only 60–70% never had problems with access to condoms, while up to 10% had such problems in the last month. Less than a half of respondents in Macedonia had never been in a situation where a condom was not handy.

Condom use during the last anal sex varied between countries, and ranged from 50 to 82%. It was somewhat higher when considering only non-steady partners. We examined regularity of condom use with non-steady partners in general, and found that only a half of relevant respondents had always used condoms in such situations.

Condom use rates were is not satisfactory in general. The highest rates of condom use were among respondents in Georgia, Armenia, and Ukraine. The lowest rate was in Azerbaijan, followed by Macedonia and Kyrgyzstan.

Special attention should be paid to Azerbaijan. The surveyed MSM in this country had the most unfavourable indicators: they had the highest rate of casual partners at the last sex, the most common commercial sex experience, relatively problematic access to condoms, and the lowest rate of condom use, including situations with casual partners.

Alcohol consumption during sex. Drinking during sex could be considered not so regular. More than half of respondents in most of the countries either had not used alcohol at all, or done it seldom during the last 6 months. At the same time, respondents who drank regularly or always used condoms less, including sex with casual partners.

Associations between sexual behavior and IH. They were sometimes contradictory, not always direct, and had a significant, but not strong effect.

Greater average homonegativity was among respondents who refrained from regular or any sex with men. This was unlikely to contribute to mental or sexual well-being, but it should

Table 5.1: Odds ratios for condom use during the last anal sex. Binary logistic regression on the SIHS score and other factors

	Coefficient	OR	95% CI
SIHS (1–7 point scale)	−0.03	0.97	0.91–1.03
Partner in the last sexual contact (Ref. = Non-steady)			
Steady	−1.31***	0.27	0.23–0.31
Last time a condom was not handy (Ref. = Never)			
Within the last 4 weeks	−0.62***	0.54	0.39–0.73
Within the last 6 months	−0.6***	0.55	0.45–0.66
Within the last 12 months	−0.16	0.85	0.65–1.11
Prior to the last 12 months	0.06	1.06	0.87–1.3
Received free condoms in the last 6 months (Ref. = No)			
Yes	0.2*	1.22	1.03–1.46
MSM-service NGO around (Ref. = No)			
Yes	0.2*	1.23	1.03–1.45
Country of residence (Ref. = Russia)			
Armenia	0.42	1.52	0.76–3.04
Azerbaijan	−0.61*	0.55	0.31–0.98
Belarus	−0.18	0.84	0.63–1.12
Lithuania/Estonia	0.11	1.12	0.76–1.65
Georgia	0.83*	2.3	1.19–4.42
Kazakhstan	0.12	1.13	0.75–1.7
Kyrgyzstan	−0.36	0.7	0.44–1.1
Ukraine	0.14	1.15	0.95–1.38
City of residence (Ref. = Capital city)			
Other large city	−0.19*	0.83	0.71–0.96
Small town/rural area	−0.39***	0.67	0.55–0.83
Age, years (Ref. = 30 years)	−0.01	0.99	0.98–1[1]
Education (Ref. = Master's degree)			
Higher education below Master's degree	−0.36***	0.7	0.59–0.83
Below higher education	−0.21**	0.81	0.69–0.95
Sexual orientation (Ref. = Gay)			
Bisexual	−0.04	0.97	0.81–1.15
Heterosexual/other	−0.02	0.98	0.75–1.28
Outness: others knew a respondent was MSM (1 = Everyone, 5 = No one)	0.07*	1.07	1.01–1.14
Cohabitation (Ref. = with others, but not sexual partners)			
Live alone	0.04	1.04	0.89–1.23
With wife/female partner	0.05	1.05	0.8–1.39
With male partner	−0.43***	0.65	0.54–0.78
Alcohol use during sex in the last 6 months (Ref. = Never)			
Seldom/from time to time	−0.05	0.95	0.82–1.1
Mostly/always	−0.31**	0.74	0.61–0.9
(Intercept)	1.6***	4.97	3.12–7.92

N = 4838. Parameters are significant: * at $p = 0.05$; ** at $p = 0.01$; *** at $p = 0.001$
[1] The actual value of CI upper bound is greater than 0.99 and less than 1

have reduced the risk of infecting HIV. Among those having had sex with men in the last 6 month, lower average IH was observed among respondents with a steady sexual partner. They, in turn, had fewer casual partners, which also reduced the risk of HIV infection.

At the same time, lower IH was associated (at least in Russia and Georgia) with a larger number of casual partners, which increased the risk of HIV infection. However, this association was very weak and probably more pronounced among those who had high levels of homophobia. In addition, people with more casual partners were inclined to a more regular condom use, which decreased the risk of HIV infection.

We were not able to find a direct association between IH and regular condom use. In Ukraine and Kyrgyzstan, there was a weak association between lower homonegativity and regular alcohol drinking during sex with men. The latter was associated with less regular condom use, including with casual partners. Thus, lower homonegativity could have had an indirect link to a higher risk of HIV infection.

As we found in the previous section, lower homonegativity was associated with greater outness. The latter related to higher rates of condom use.

No significant association between IH and commercial sex was found.

Factors related condom use during the last anal sex with men. Having a steady partner decreases odds for condom use. In addition, condom use was less likely if there was lack of access to them, while coverage by free condoms distribution, and access to an NGO made it more likely. Thus, improvement of prevention programs is still relevant. Alcohol drinking on most or all occations of sex was associated with lower probability of condom use. In addition, respondents living outside the capital, and who had not graduated from a higher education institution, had lower odds for condom use. Apart from this, respondents in Azerbaijan were less likely to use condoms, while respondents in Georgia wee more likely.

6. HIV Status, and HIV, STI and Hepatitis Testing

6.1. Knowledge about Where One Could Be Tested for HIV

Most of respondents knew where they could get an HIV test in their place of residence (Fig. 6.1). Azerbaijan was an exception, as only 44% knew where to get an HIV test.
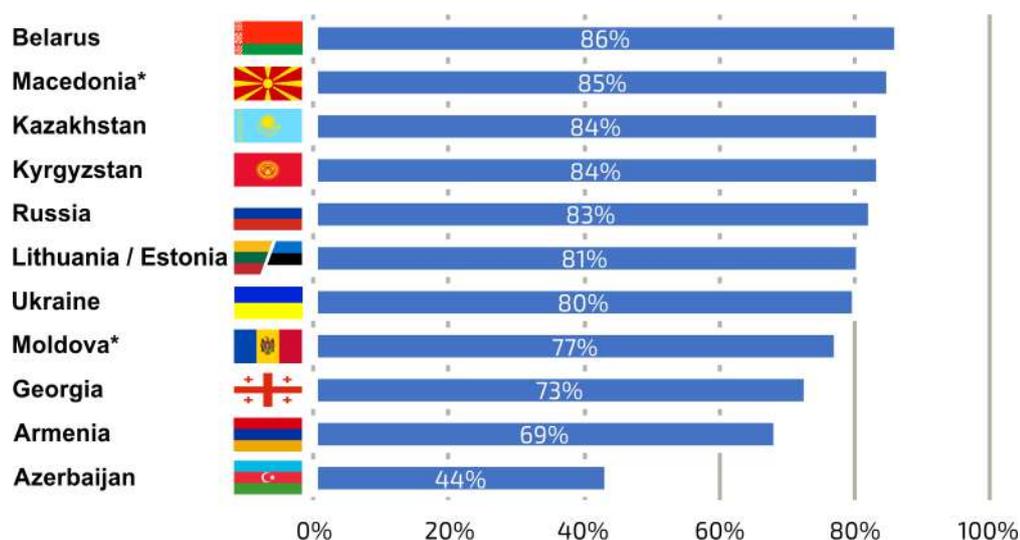
Figure 6.1: Share of those who knew where to get an HIV test by country, % (*Differences between countries are significant at p < 0.001, * N < 100*)

6.2. HIV Testing

HIV testing varied between countries, and was generally inadequate (Fig. 6.2).

Azerbaijan was the only country where the number of respondents who were tested in the last 12 months was less than a half (42%). The total share of respondents that had ever been tested for HIV was 56% only. In other countries, the percentage of respondents who were tested in the last year ranged from 51 to 66%, and the overall share of those who had ever been tested ranged from 70 to 82%. The highest rates of HIV testing were found in Russia, Kyrgyzstan, and Moldova.

Have you been tested for HIV ... ?

Country	... during the last 12 months	... more than 12 months ago
Kyrgyzstan	66%	16%
Moldova*	63%	15%
Macedonia*	61%	13%
Russia	61%	22%
Georgia	60%	15%
Armenia	58%	12%
Ukraine	57%	19%
Lithuania / Estonia	55%	24%
Belarus	54%	19%
Kazakhstan	51%	25%
Azerbaijan	42%	14%
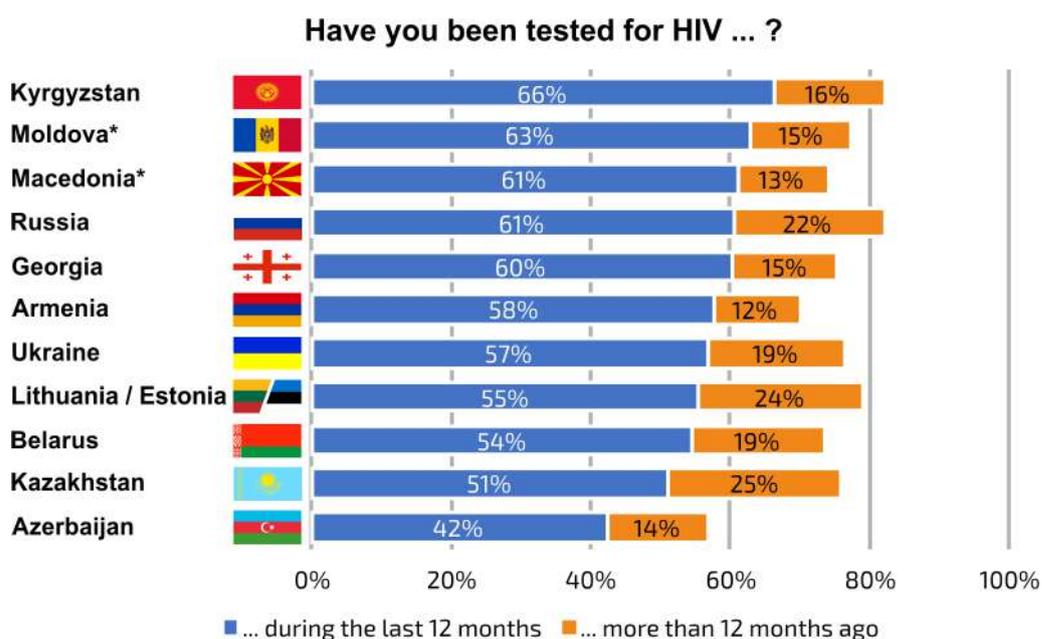
Figure 6.2: Share of respondents who were tested for HIV by country, % (*Differences between countries are significant at $p < 0.001$, * $N < 100$*)

6.3. HIV Status

7% of all respondents indicated that they were HIV-positive. This rate was 9% if to consider respondents who had been tested and knew their results.

The breakdown by country is at Fig. 6.3. From 3 to 8% of all respondents, or from 4 to 12% of those who knew their status were HIV-positive. Respondents from Belarus and Kyrgyzstan had the lowest HIV prevalence. The highest prevalence was among respondents in Azerbaijan where 12% of those who know their status were HIV-positive. Aside from Azerbaijan, HIV-infection was the most prevalent among the surveyed MSM in Ukraine, Moldova, Russia, Georgia, and Kazakhstan (10–11% of those who knew their status).

6.4. STI and Hepatitis Testing Opportunities

In most of countries, MSM did not experience serious difficulties with getting tested for STIs or hepatitis (Fig. 6.4). The situation is worse in Macedonia, Lithuania/Estonia, and Armenia. However, Azerbaijani respondents found themselves in the most troubled situation. Only 48% of its respondents believed that they were able to be easily tested for STIs or hepatitis. At the same time, 25% believed that they were hardly ever able to undergo such testing, while respective shares in all other countries were 0–2% only.
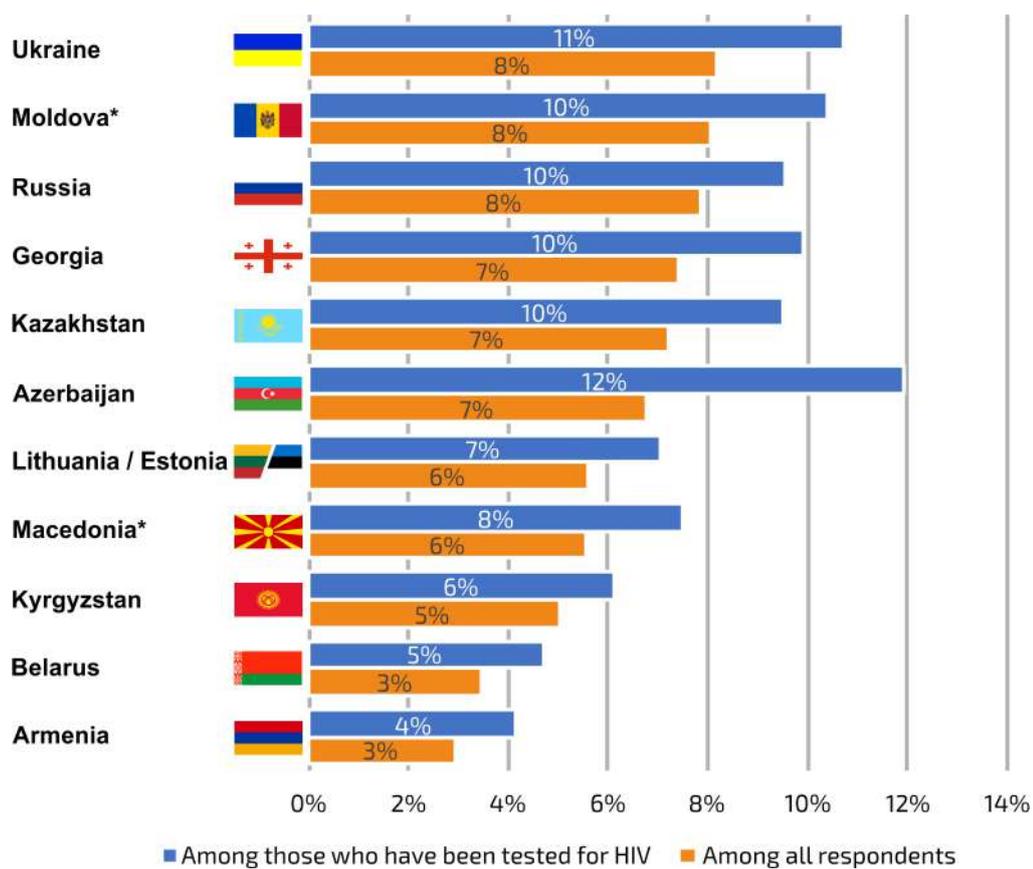
Figure 6.3: Share of HIV-positive respondents who know their status by country, % (*Differences between countries are significant at p < 0.001, * N < 100*)
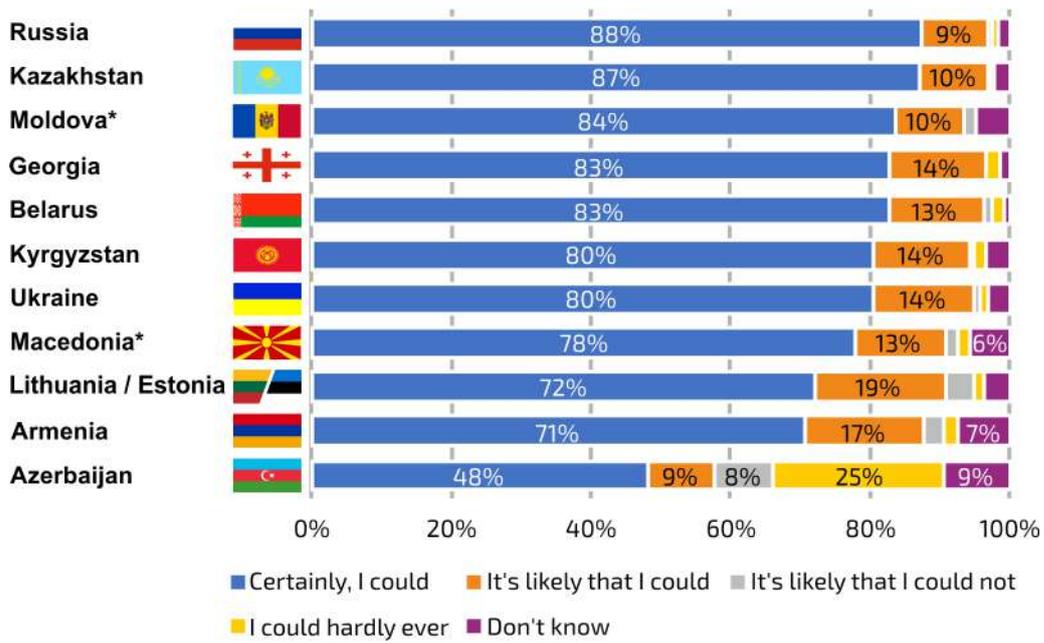
Figure 6.4: Responses to the question "Could you get tested for STIs if you think you need it?" by country, % (*Differences between countries are significant at p < 0.001, * N < 100*)

6.5. Associations between Testing and Internalized Homonegativity

Those who knew where to get a HIV test, had a significantly lower average IH, although the difference was not substantially large (Fig. 6.5). In particular countries, this association was significant in Georgia, Kyrgyzstan, Russia, and Ukraine (Fig. 6.6).
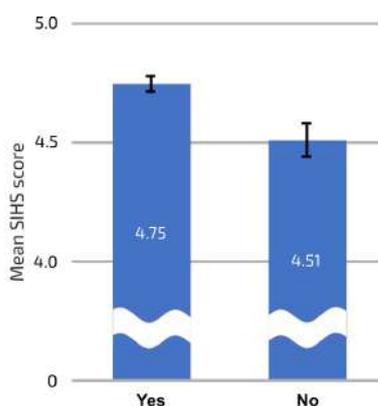
Figure 6.5: Mean SIHS score by knowledge where to get an HIV test (*Difference is significant at $p < 0.001$*)

IH was also significantly lower among respondents who had had an HIV test in the previous 12 months (Fig. 6.7). A significant difference in the average SIHS level was not found between those who had been tested more than 12 months ago, and those who had never been tested for HIV.

At the country level, such a pattern was observed for Russia and Ukraine (Fig. 6.8). In Belarus and Kyrgyzstan, those who had recently had an HIV test had significantly lower homonegativity only in comparison with those who had never been tested. In Kazakhstan,they had a significantly lower IH only in comparison with those who had been tested for HIV more than 12 months ago.

MSM who responded that they were able to take an STI or hepatitis test without a difficulty showed significantly lower average homonegativity (Fig. 6.9).

Significant difference was observed for Belarus, Russia, and Ukraine (Fig. 6.10).

6.6. HIV testing, Internalized Homonegativity, and Additional Factors: Statistical Modeling

We constructed two binary logistic regression models that estimated factors of knowing where to get tested for HIV, and of a HIV test in the last 12 months (Table 6.1).

Figure 6.6: Mean SIHS score by knowledge where to get an HIV test and country (*Significance of differences: * at p = 0.05; ** at p = 0.01; *** at p = 0.001*)

Table 6.1: Odds ratios for knowing where to get an HIV test, and for a recent HIV test. Binary logistic regressions on the SIHS score and other factors

	Knew where to get tested for HIV in one's place of residence, $N = 5767$			Tested for HIV in the last 12 months, $N = 5762$		
	Coef.	OR	95% CI	Coef.	OR	95% CI
SIHS (1–7 point scale)	0.07*	1.07	1^1–1.15	0.08**	1.08	1.03–1.15
Knew where to get an HIV test (Ref. = No)	–	–	–	1.65***	5.21	4.43–6.13
Country of residence (Ref. = Russia)						
Armenia	−1.31***	0.27	0.15–0.48	−0.25	0.78	0.45–1.33
Azerbaijan	−1.95***	0.14	0.08–0.24	−0.43	0.65	0.38–1.12
Belarus	0.17	1.18	0.83–1.7	−0.69***	0.5	0.39–0.65
Lithuania/Estonia	−0.55*	0.58	0.37–0.89	−0.57**	0.56	0.39–0.81
Georgia	−0.3	0.74	0.4–1.36	−0.39	0.68	0.42–1.09
Kazakhstan	0.32	1.37	0.86–2.18	−0.6***	0.55	0.39–0.77
Kyrgyzstan	0.09	1.09	0.59–2.03	0.03	1.03	0.66–1.6
Ukraine	−0.47***	0.63	0.51–0.77	−0.24**	0.79	0.67–0.93
City of residence (Ref. = Capital city)						
Other large city	0.05	1.05	0.88–1.25	−0.35***	0.7	0.61–0.8
Small town/rural area	−0.61***	0.54	0.44–0.67	−0.18	0.84	0.69–1.01
Age, years (Ref. = 30 years)	0.02***	1.02	1.01–1.03	−0.01	0.99	0.99–1
Education (Ref. = Master's degree)						
Higher education below Master's degree	−0.44***	0.65	0.54–0.78	−0.2*	0.82	0.71–0.96
Below higher education	−0.17	0.84	0.7–1.01	−0.01	0.99	0.86–1.14
Sexual orientation (Ref. = Gay)						
Bisexual	−0.08	0.92	0.76–1.11	−0.3***	0.74	0.64–0.86
Heterosexual/other	−0.14	0.87	0.67–1.14	−0.15	0.86	0.68–1.07
Outness: others knew a respondent was MSM (1 = Everyone, 5 = No one)	−0.07	0.93	0.87–1	−0.08**	0.92	0.87–0.98
Cohabitation (Ref. = with others, but not sexual partners)						
Live alone	0.07	1.07	0.89–1.28	0.25***	1.28	1.11–1.48
With wife/female partner	0.2	1.22	0.91–1.64	−0.14	0.87	0.68–1.1
With male partner	0.26*	1.29	1.02–1.64	−0.16	0.85	0.72–1.01
MSM-service NGO around (Ref. = No)						
Yes	1.48***	4.38	3.45–5.58	0.6***	1.83	1.57–2.13
(Intercept)	1.61***	4.99	3.03–8.19	−0.7***	0.5	0.33–0.75

*Significance of parameters: * at p = 0.05; ** at p = 0.01; *** at p = 0.001*
[1] *The actual value of CI lower bound is greater than 1 and less than 1.01*
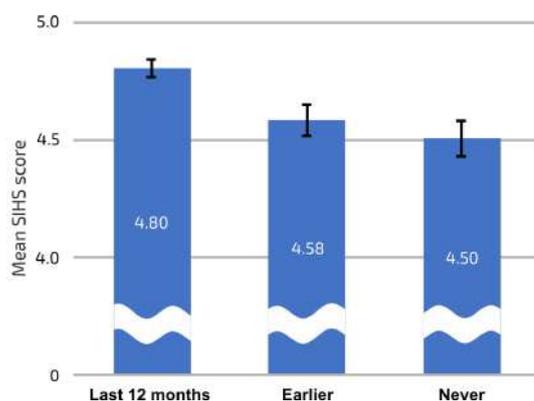
Figure 6.7: Mean SIHS score by recency of HIV test (*Difference is significant at* $p < 0.001$)

Knowledge about where to get tested for HIV in one's place of residence. Even controlling for other variables, the SIHS score had a significant positive association with knowledge about where to get a HIV test (Table 6.1, left model). Increase in homosexuality acceptance by 1 point led on average to 7% increase in knowledge about where to be tested (95% CI: 1 (The actual value of the lower bound of the confidence interval is greater than 1 and less than 1.01) — 1.15).

MSM NGO around significantly increased the chances of knowing where to get tested. (OR: 4.38, 95% CI: 3.45–5.58). In addition, chances increased with an increase in age, and if a respondent lived with a male partner. At the same time, sexual orientation and degree of outness did not have significant associations. On the other hand, odds of knowing where to get HIV test were significantly lower for respondents who had education level below Master's degree, and for those who lived in small towns / rural areas (compared with those who lived in the capital). In addition, respondents from Ukraine, the Baltic countries, and Armenia and Azerbaijan in particular, had less knowledge about a HIV testing place.

Tested for HIV in the past 12 months. The model also displayed a significant positive association between acceptance of one's homosexuality and recent testing for HIV (Table 6.1, right model). All other things being equal, an increase in the SIHS score by one point, increased on average the odds of a recent test by 8% (OR: 1.08, 95% CI: 1.03–1.15).

As one could expect, knowledge about where to get a HIV test had a huge positive effect on recent testing (OR: 5.21, 95% CI: 4.43–6.13). Having an MSM-service organization around also had a significant positive effect. Living alone was significantly associated with higher odds being testing. On the other hand, bisexual orientation, as well as being less out, were significantly associated with a lower probability of a recent HIV test. Respondents who lived outside of capital cities were also less likely to have been tested. The same was true for those who did not complete higher education. Respondents from Ukraine, Belarus, Lithuania/Estonia, and Kazakhstan were less likely to have been recently tested holding all other variables equal.
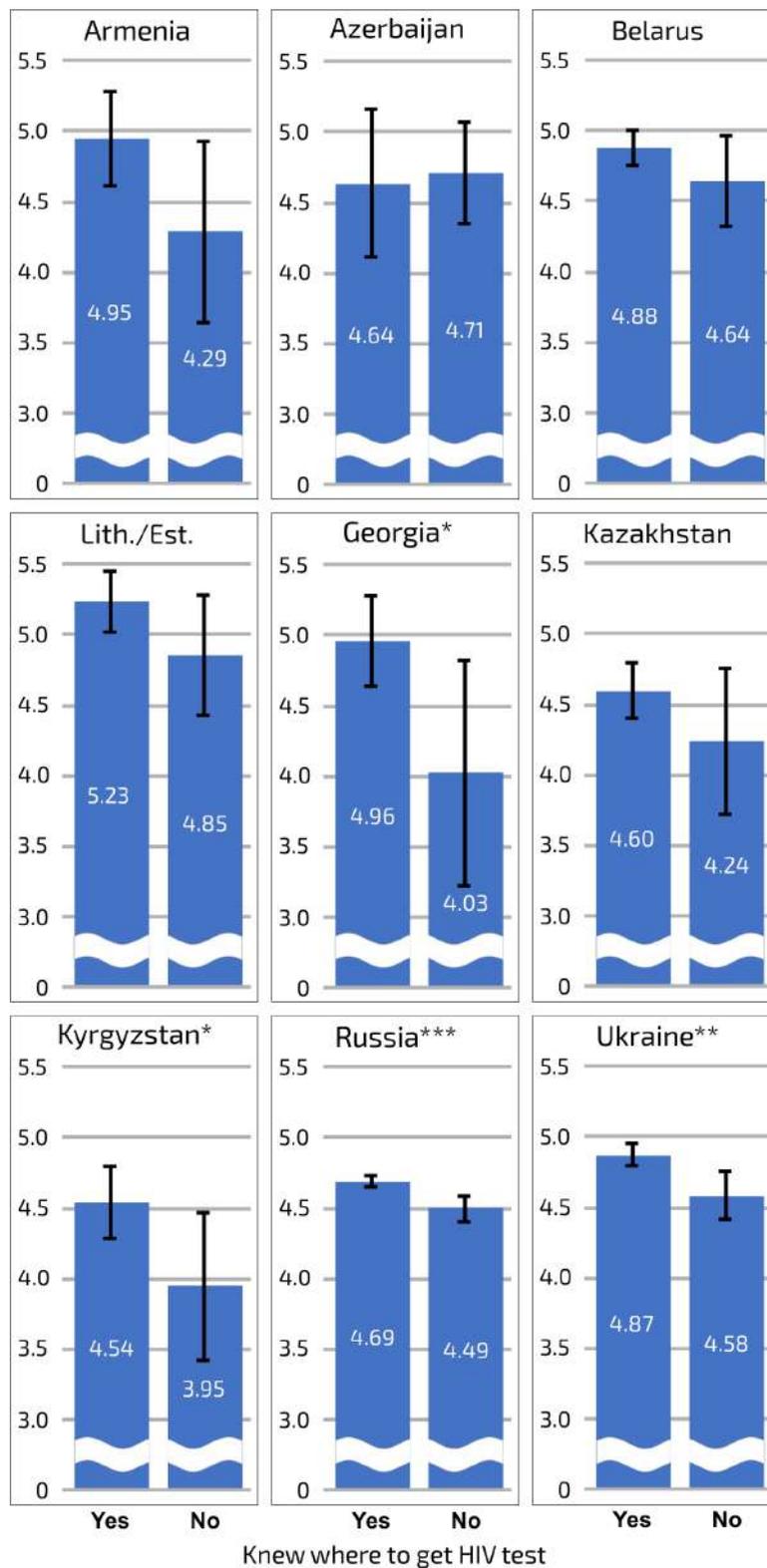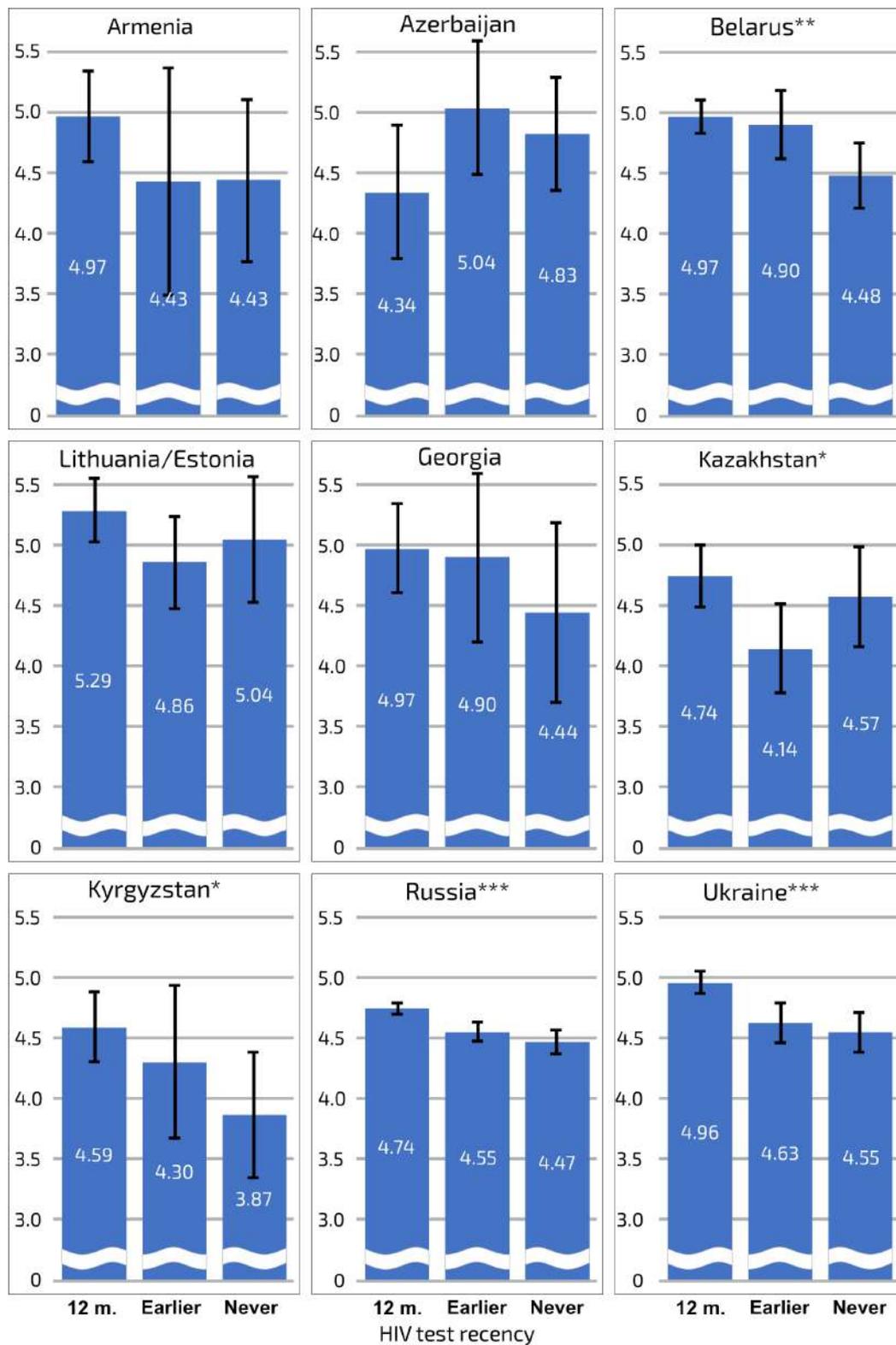
Figure 6.8: Mean SIHS score by recency of HIV test and country (*Significance of differences: * at p = 0.05; ** at p = 0.01; *** at p = 0.001*)
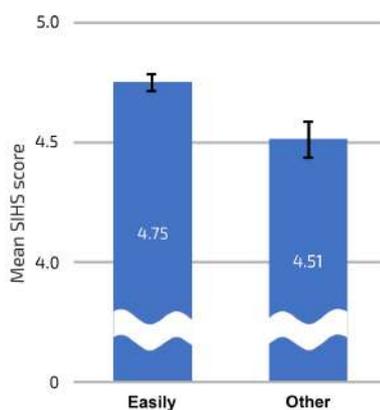
Figure 6.9: Mean SIHS score by readiness to be tested for STIs (*Difference is significant at* $p = 0.001$)

Conclusions

The majority of respondents in almost all countries knew where to be tested for HIV. Far from all of the respondents had been tested for HIV in the past 12 months (from 42 to 66% depending on a country). HIV prevalence among those who had been tested and knew their result ranged from 4 to 12%. Additionally, the overwhelming majority would not have any difficulty with testing for STIs and hepatitis.

Azerbaijan was worth mentioning again. Only the minority of its respondents knew where to get tested for HIV, and had been tested in fact. Also a minority of the surveyed MSM would easily be tested for other STIs without any problems. Together with the most prevalent risky behaviors (see Chapter 5), it must have contributed to the fact that Azerbaijani respondents had the highest HIV-infection prevalence.

An average IH was slightly lower among the following groups: those who knew where to get tested for HIV; those who had been tested for HIV in the past year; and among those who would easily get tested for STIs and hepatitis. This pattern was observed among respondents in Russia, Ukraine, and, for some indicators, in Belarus, Kyrgyzstan, and Georgia.

Modeling demonstrated that decreased IH related to a significant increase in knowing where to get a HIV test, as well as in HIV testing in the last 12 months, even when controlling for other variables.

Other factors that increased the probability of these outcomes were an MSM organization around, and knowing where to get a HIV test (for a recent HIV testing). Living outside of capital cities, and education below Master's were negatively associated with both outcomes.

Other significant predictors included bisexual orientation, being in a closet, cohabitation (alone, or with a male partner), older age. Finally, knowing about the test, and HIV testing varied by county even after controlling for other variables.
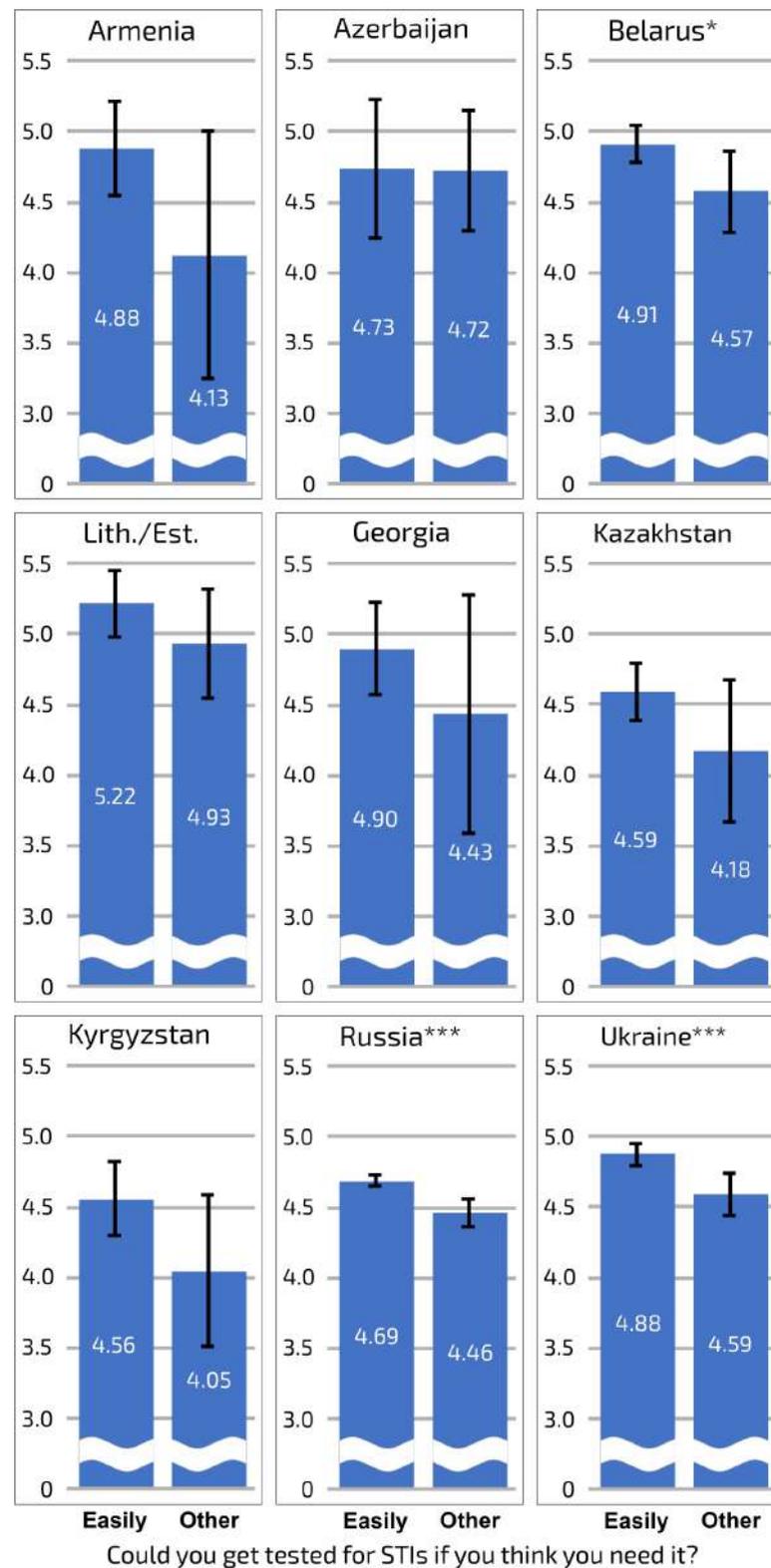
Figure 6.10: Mean SIHS score by readiness to be tested for STIs and country (*Significance of differences: * at p = 0.05; ** at p = 0.01; *** at p = 0.001*)

7. Coverage by Services for MSM

7.1. Having an MSM Organization around

It is reasonable to consider how many respondents had access to organizations that could potentially provide service for MSM before describing coverage by those services. Such access (i. e. having an organization around) was extremely uneven by country (Fig. 7.1). The most of respondents (70%) had MSM organizations not far away in Macedonia. The lowest access to such NGOs was in Azerbaijan, Kazakhstan, and Russia (16–28%).
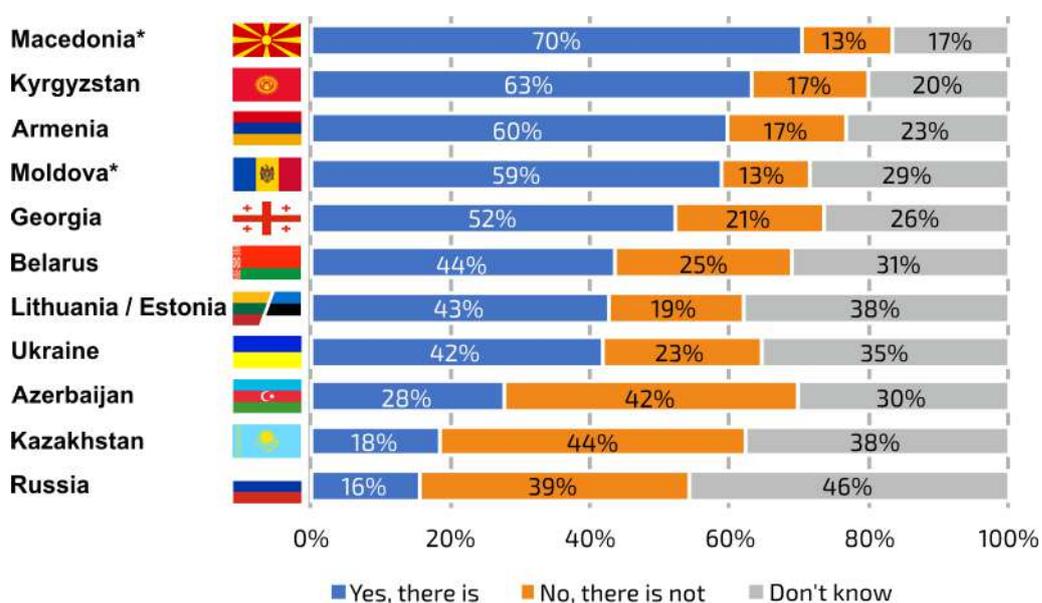
Figure 7.1: Having a non-governmental organization for gays and bisexuals not far away by country, % (*Differences between countries are sign. at p < 0.001, * N < 100*)

Such distribution by countries resulted from at at least two reasons. On the one hand, MSM could have better access to relevant NGOs in the European Union countries. On the other hand, as we've already noted, considerable shares were recruited among NGOs' clients in some countries with small samples. It gave such respondents a greater weight than they actually had in the general MSM population. This may explain why Kyrgyzstan followed Macedonia in terms of wide access to MSM organizations among respondents.

Taking this into account, it is reasonable to assume that in Azerbaijan, Armenia, Kazakhstan, Kyrgyzstan, Macedonia, and Moldova, the availability of MSM-service organizations was lower than this study showed.

7.2. Coverage by MSM Services: Comparison between All Respondents and Those with Access to NGOs

Coverage of all respondents by services for MSM was low in the past 6 months. Particular services can be ranked as follows (Fig. 7.2).

Informing about HIV, STIs, and sexual health, as well as HIV testing and condoms distribution were the services with the broadest coverage (20–28%). Free lubricants, and testing for other infections had less coverage (17%). They were followed by joint events and room for communication with other MSM (12%), and access to doctors (11%). The fewest share of MSM were covered by distribution of free antiseptics and legal and psychological services (4–7%). These indicators might vary by country and access to a nearby NGO (see below), still, a principal ranking of particular services' coverage was more or less the same.

There was a large unsatisfied demand for services (i. e. when a respondent did not receive a certain service, but would like to, Fig. 7.2). It ranged from 55% (information about HIV and STIs) to 74% (psychological and legal services, and free antiseptics).

A slightly different picture emerged if to consider men who had access to an organization for gays and bisexuals, and should have got a better coverage by services (Fig. 7.3). As one might expect, service coverage was better in this group. More than half of respondents were covered by informing about HIV, STIs, and sexual health, and by HIV testing (53–60%), while 47% were covered by condom distribution. Simultaneously, shares of respondents with unmet needs were much lower. As for other services, the difference by coverage and unsatisfied demands between all, and those who had a nearby NGO, was not so huge.

7.3. Availability of Particular Services for MSM by Country

In this section we show service coverage by country. We examined countries with valid samples of at least 100 participants. Therefore, Macedonia and Moldova were not included. Countries, where at least 100 MSM had a nearby NGO for gays and bisexuals, received an extra consideration for that group. They included Belarus, Kyrgyzstan, Russia, and Ukraine.
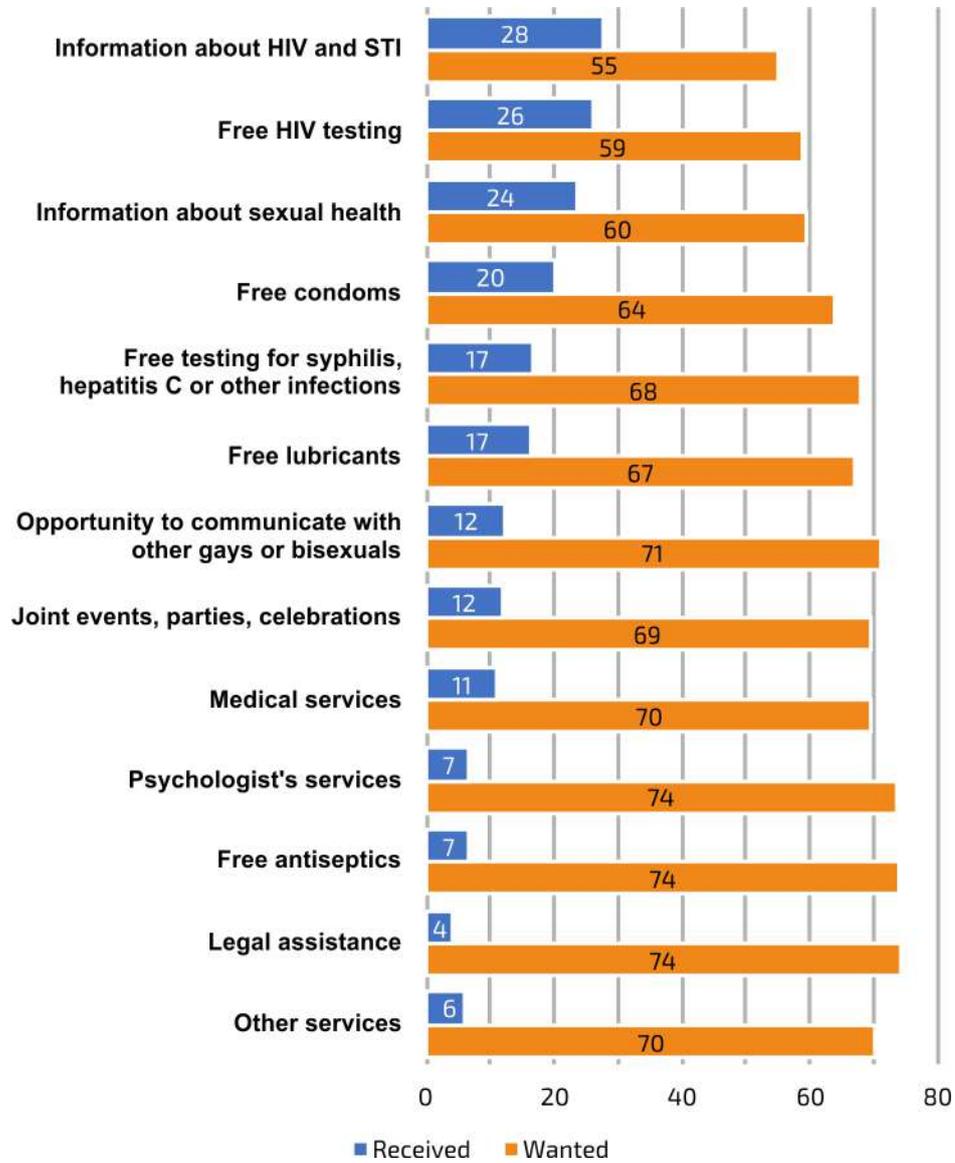
Figure 7.2: Receiving services from MSM-service organizations in the last 6 months among all respondents, %
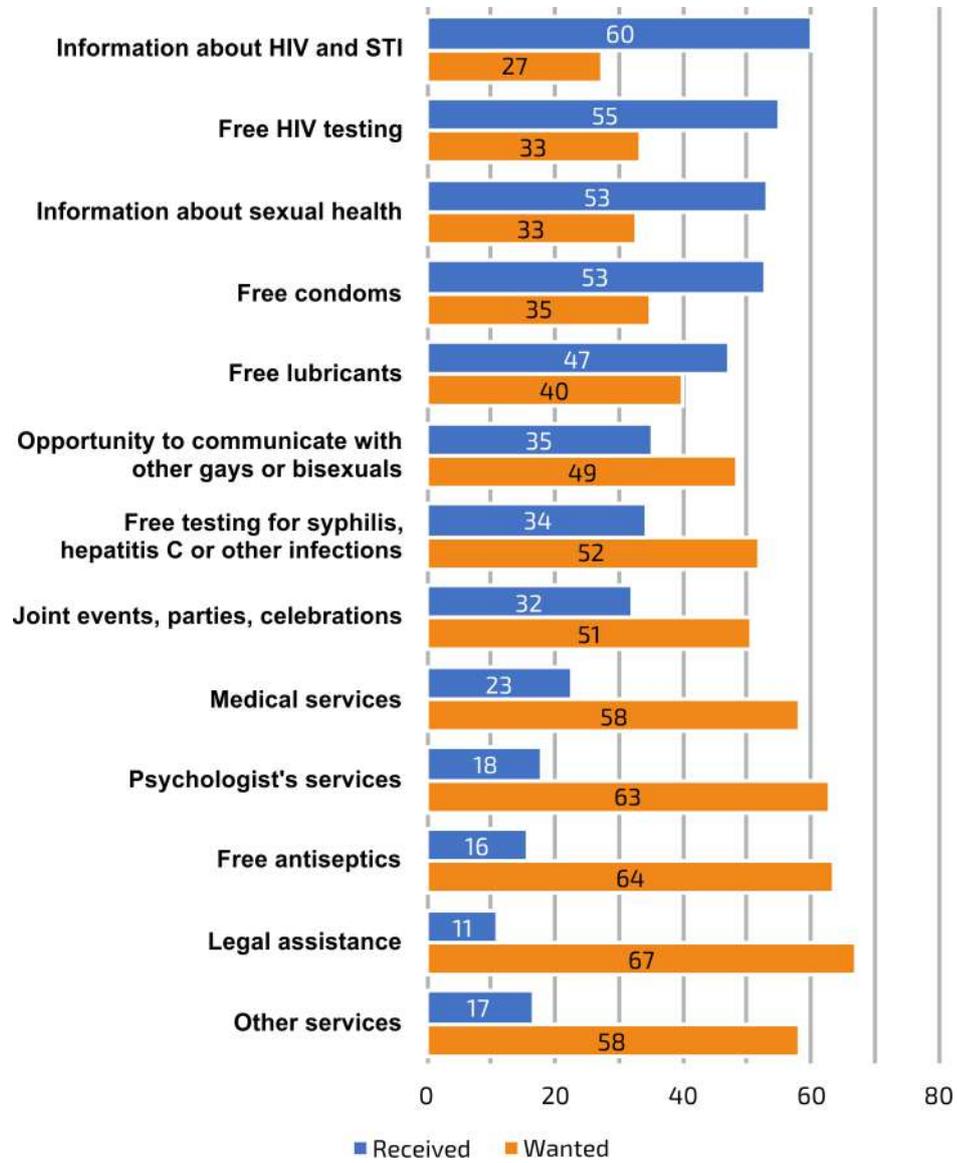
Figure 7.3: Receiving services from MSM-service organizations in the last 6 months among respondents with access to such organizations, %

Azerbaijan

The respondents in Azerbaijan had a poor service coverage (Fig. 7.4). Only 19% received free condoms in the past 6 months, 15–16% received information about HIV/STIs, free lubricants, and were tested for HIV. Coverage by the rest of services ranged from 4–12%. Meanwhile, 60–71% of respondents indicated unmet needs for certain services.

Figure 7.4: Receiving services from MSM-service organizations in the past 6 months in Azerbaijan, all respondents, $N = 119$, %

Armenia

Service coverage was considerably better for all services among Armenian respondents (Fig. 7.5). In particular, 36% of respondents were covered by free condoms distribution, and 35% by HIV testing, and informing about sexual health, HIV, and STIs. A relatively many respondents had met a doctor (29%), and received legal assistance (20%), or psychological services (13%) in NGOs. In addition, 20% received services that had not been listed in the survey.

Figure 7.5: Receiving services from MSM-service organizations in the past 6 months in Armenia, all respondents, $N = 138$, %

Belarus

Coverage by the five most popular services among all respondents was not bad in comparison with the coverage in overall survey sample (Fig. 7.6). They included information about HIV/STIs, testing for HIV, free condoms and lubricants, and information about sexual health. Coverage by other services was significantly lower. Coverage indicators were much higher if to consider respondents who had a nearby NGO for gay and bisexual men (Fig. 7.7).
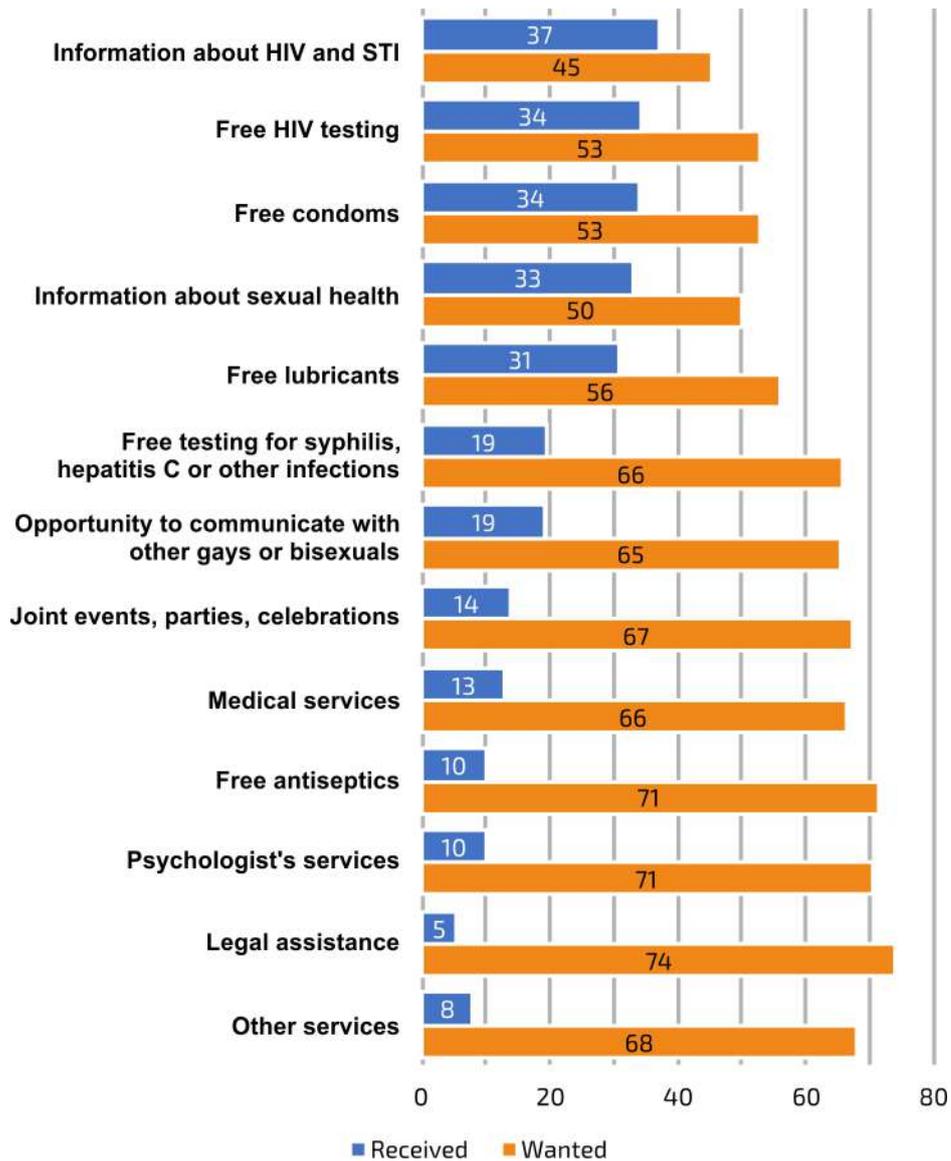
Figure 7.6: Receiving services from MSM-service organizations in the past 6 months in Belarus, all respondents, $N = 495$, %

Figure 7.7: Receiving services from MSM-service organizations in the last 6 months in Belarus, respondents with a nearby MSM-service NGO, $N = 215$, %

Georgia

Service coverage in Georgia was similar to coverage in Armenia (Fig. 7.8).

Figure 7.8: Receiving services from MSM-service organizations in the last 6 months among in Georgia, all respondents, $N = 151$, %

Kazakhstan

Coverage by information about HIV/STIs was 28%, by HIV testing — 24%, and testing for other infections — only 16% (Fig. 7.9). In addition, 16% of respondents from Kazakhstan received free condoms. Coverage by the rest of services ranged from 2% (legal aid) to 13% (medical doctor).
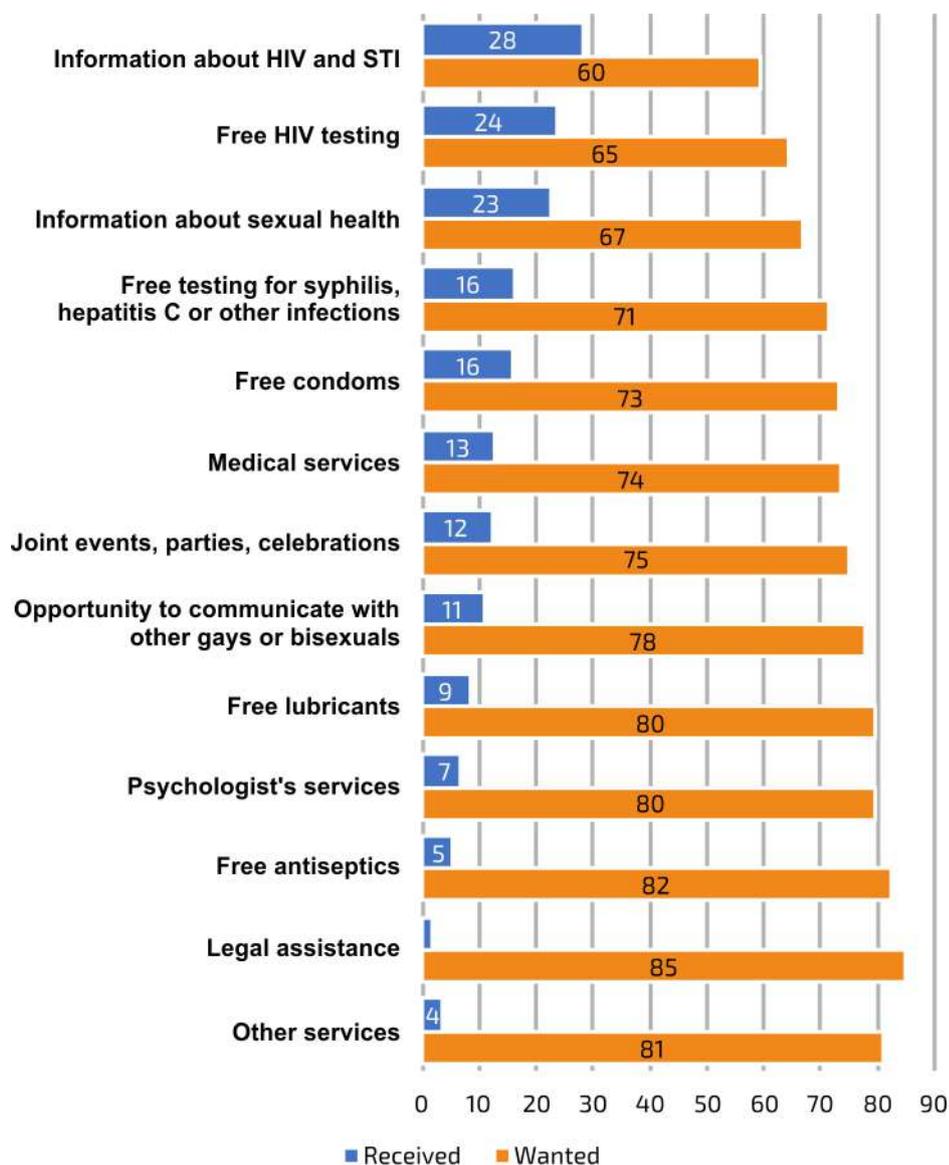
Figure 7.9: Receiving services from MSM-service organizations in the last 6 months in Kazakhstan, all respondents, $N = 223$, %

Kyrgyzstan

Men led the way in relative coverage by services for MSM (Fig. 7.10). If we consider all respondents, half or more were reached by the five most popular services in the last six months. This includes the provision of information about HIV/STIs (55%) and sexual health (50%), HIV testing (53%), and the provision of free condoms (51%) and lubricants (49%). MSM were covered relatively well by other services, including doctor's services (31%), psychological consulting (27%), legal aid (17%), and other unlisted services (24%).

The coverage was even better if we consider only those who had nearby NGOs for gays and bisexuals (Fig. 7.11). For example, 77% of them had received free condoms, and 75% were informed about HIV/STIs in the past 6 months. More than a half of these respondents had the opportunity to communicate with other MSM in NGOs and have joint events together.

Lithuania/Estonia

Respondents from Lithuania and Estonia (Fig. 7.12), were mostly reached by informing about HIV/STIs (32%) and sexual health (29%), and by HIV testing (30%). Only 24% received free condoms.

Russia

Respondents from Russia had almost the worst coverage, if to consider all of them (Fig. 7.13). Only 21% of respondents received information about HIV/STIs, while 17% received information about sexual health. Only 20% received HIV testing services, and 12% received free condoms. Coverage by other services ranged from 3 to 11%.

The figures were significantly higher for respondents that had a nearby NGOs for gays and bisexuals (Fig. 7.14). For example, 54% of such respondents were informed about HIV/STIs, 45% got HIV testing, 43% received free condoms, and 35% received lubricants.

Ukraine

In comparison with the other countries, Ukrainain men received a relatively broad service coverage (Fig. 7.15). Informing about HIV/STIs reached 43%, 41% of respodednts got tested for HIV, and 36% received free condoms from NGOs. In addition, approximately one-third of respondents received free testing services for other infections, as well as lubricants.

The figures were higher for respondents who knew about MSM NGOs not ar away (Fig. 7.16). Among other things, 71% of them were informed about HIV/STIs, 68% were tested for HIV, and 62% got free condoms. Coverage by the remaining services ranged from 12 to 58%.

Comparative Service Coverage in Different Countries

To make it easier to compare countries, we aggregated percent data of coverage by certain services in countries in two tables: for all respondents (Table 7.1), and for those who had a
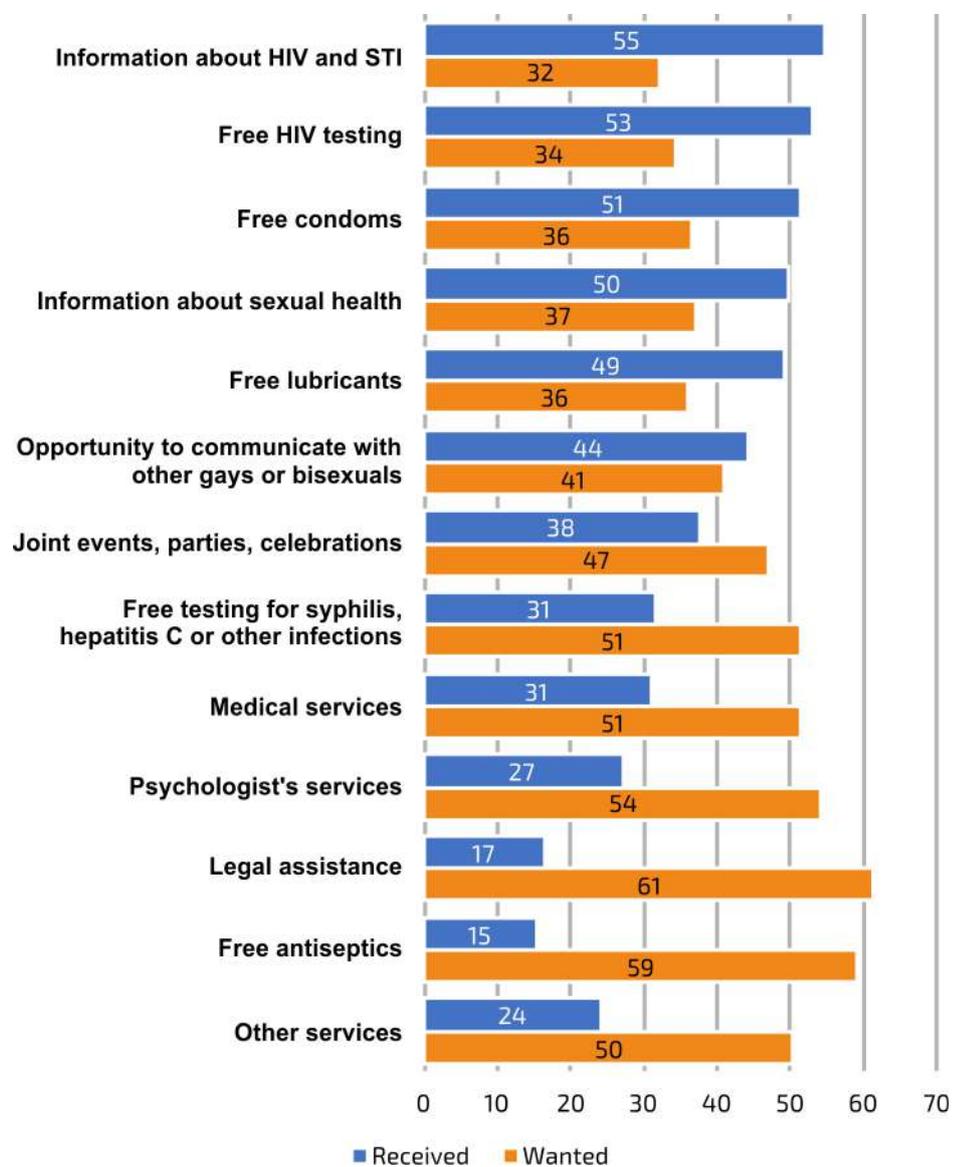
Figure 7.10: Receiving services from MSM-service organizations in the last 6 months in Kyrgyzstan, all respondents, $N = 181$, %
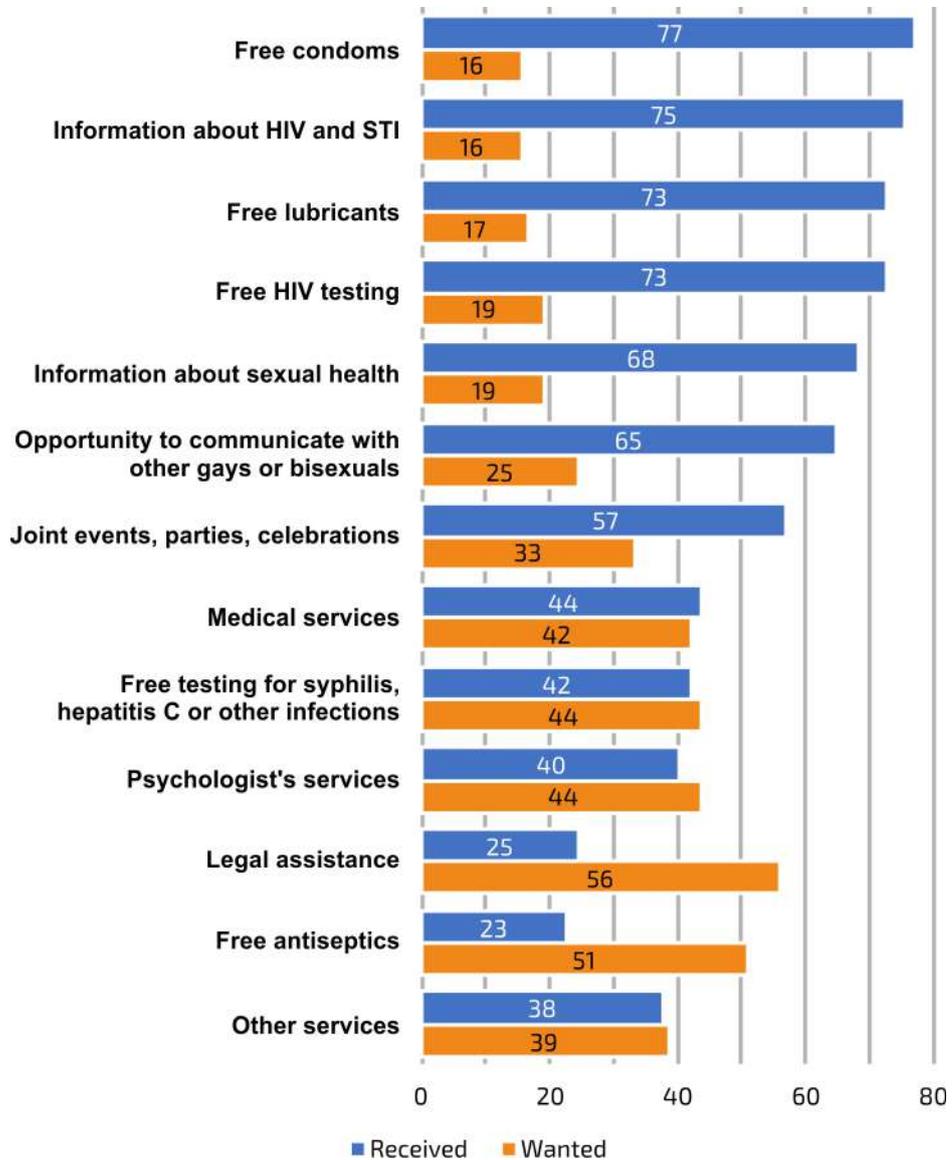
Figure 7.11: Receiving services from MSM-service organizations in the last 6 months in Kyrgyzstan, respondents with a nearby MSM-service NGO, $N = 114$, %
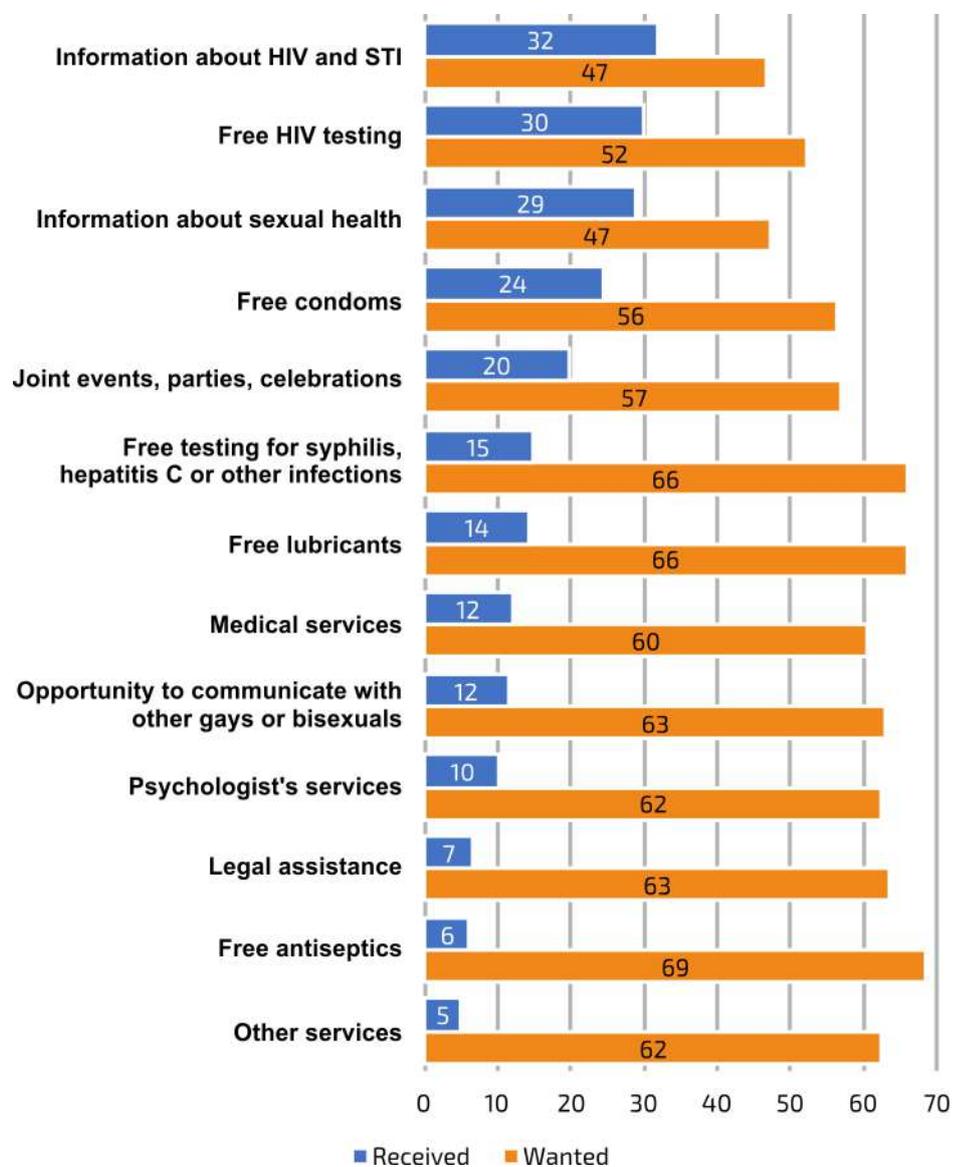
Figure 7.12: Receiving services from MSM-service organizations in the last 6 months in Lithuania/Estonia, all respondents, $N = 197$, %
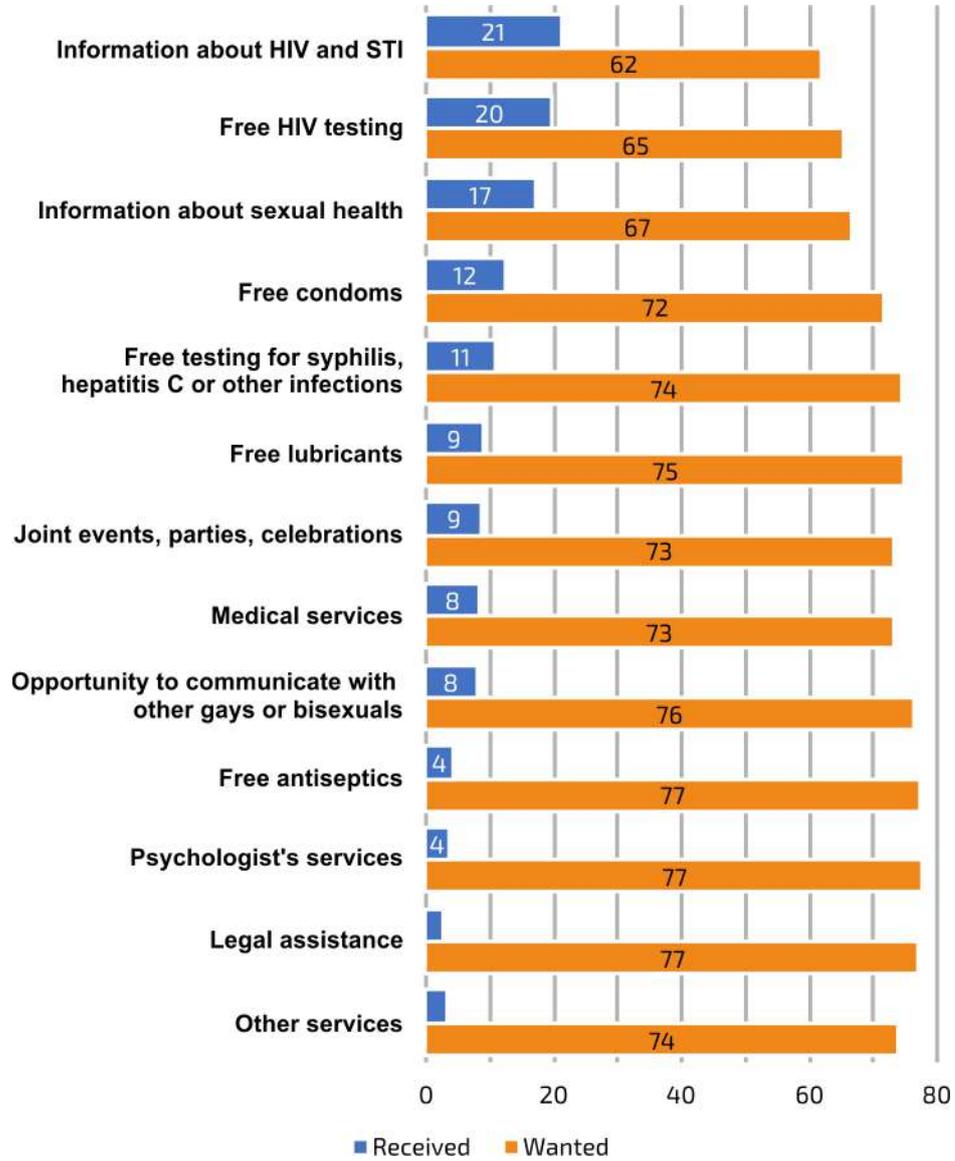
Figure 7.13: Receiving services from MSM-service organizations in the last 6 months in Russia, all respondents, $N = 5252$, %
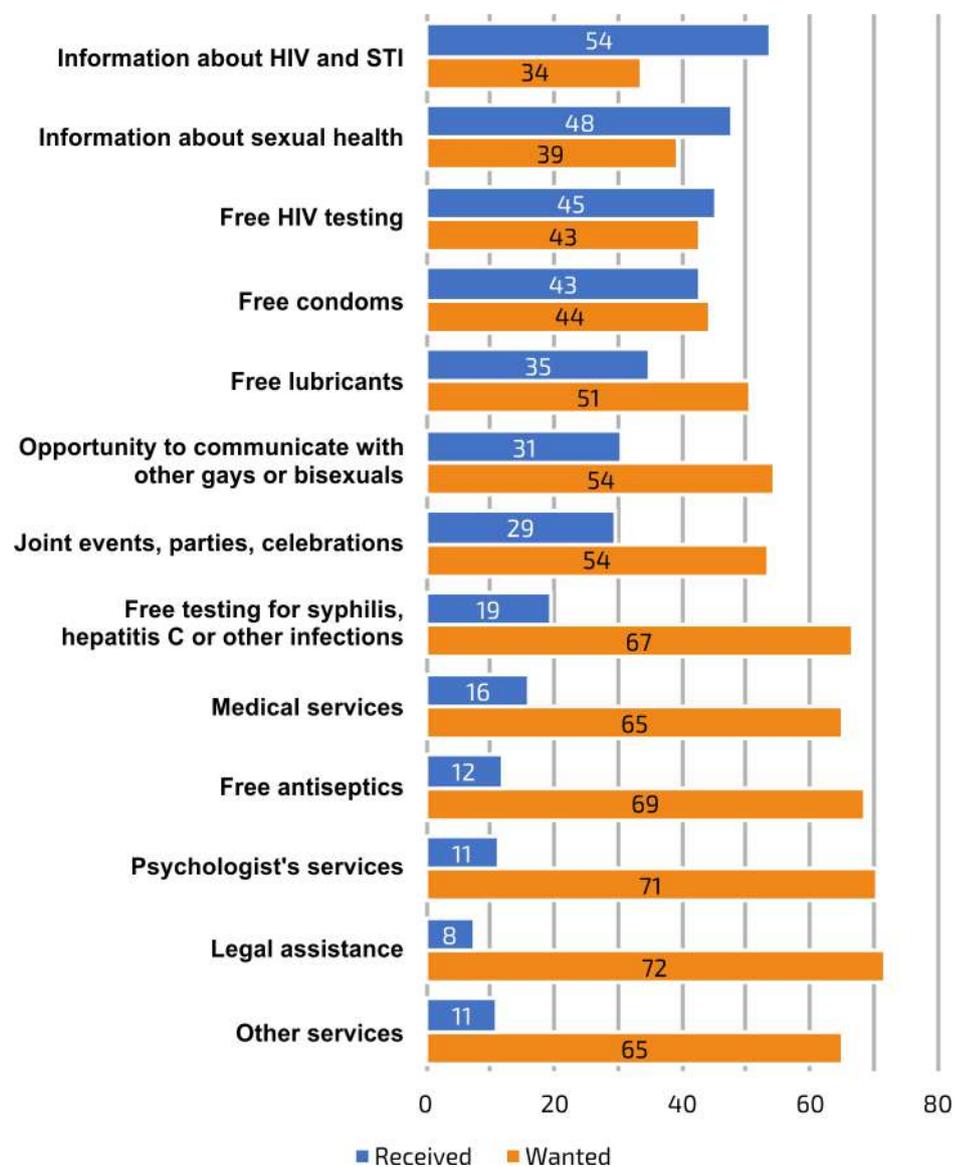
Figure 7.14: Receiving services from MSM-service organizations in the last 6 months in Russia, respondents with a nearby MSM-service NGO, $N = 821$, %
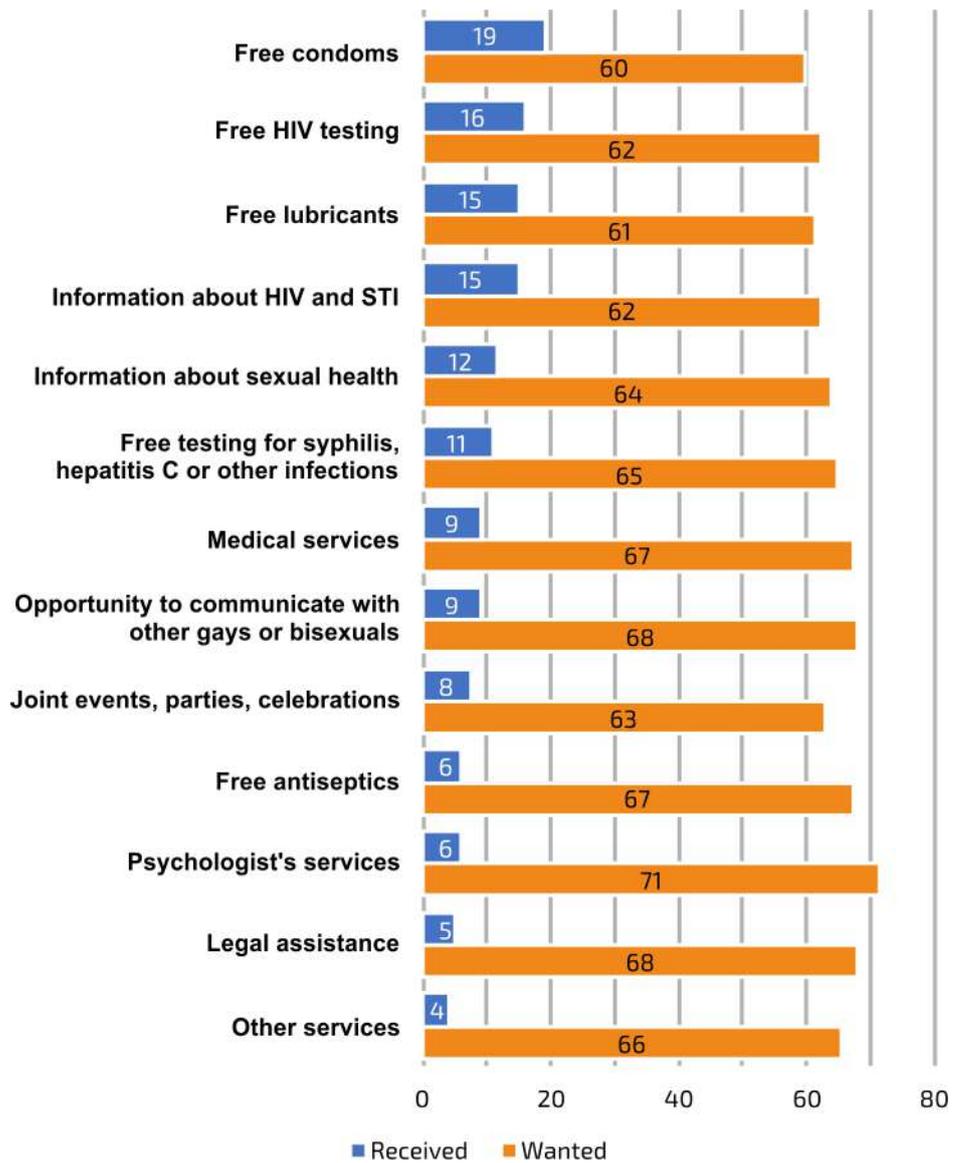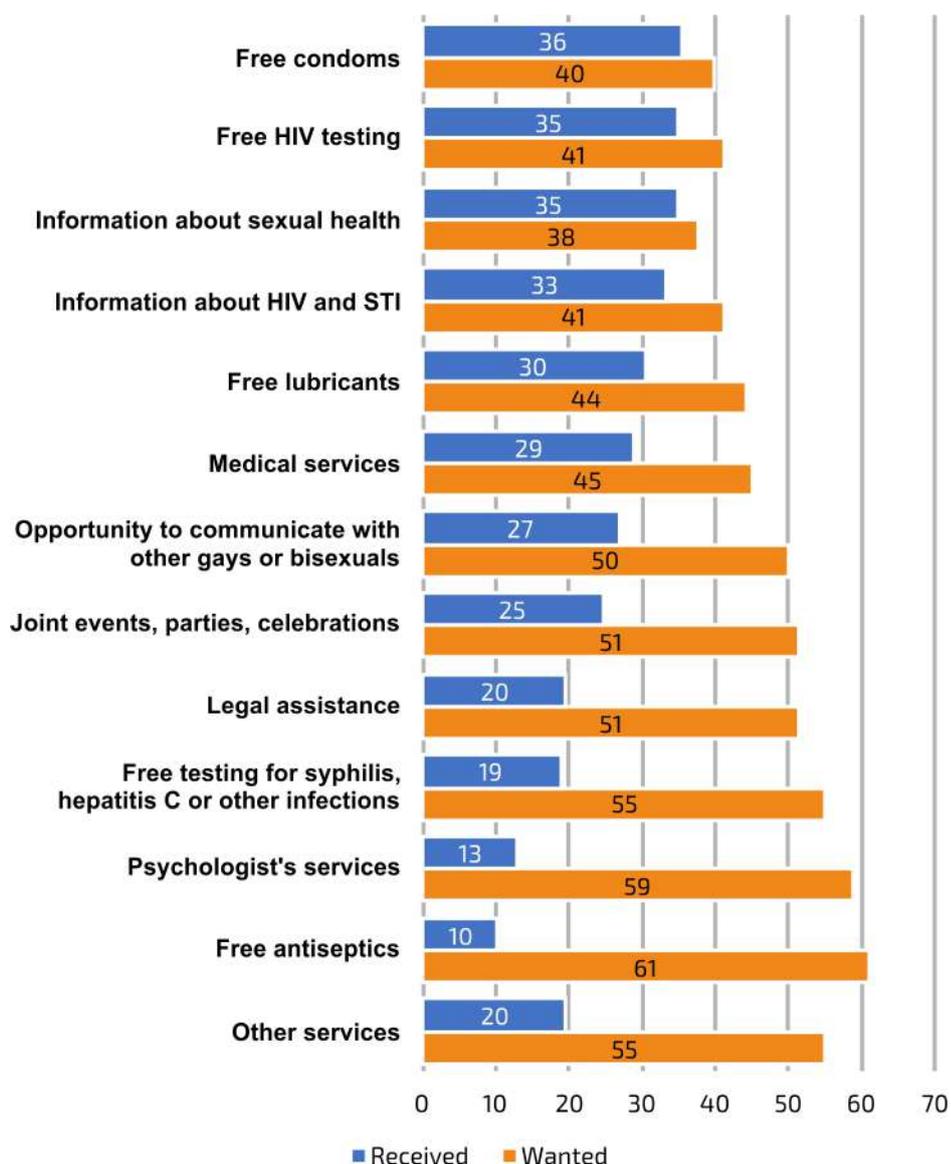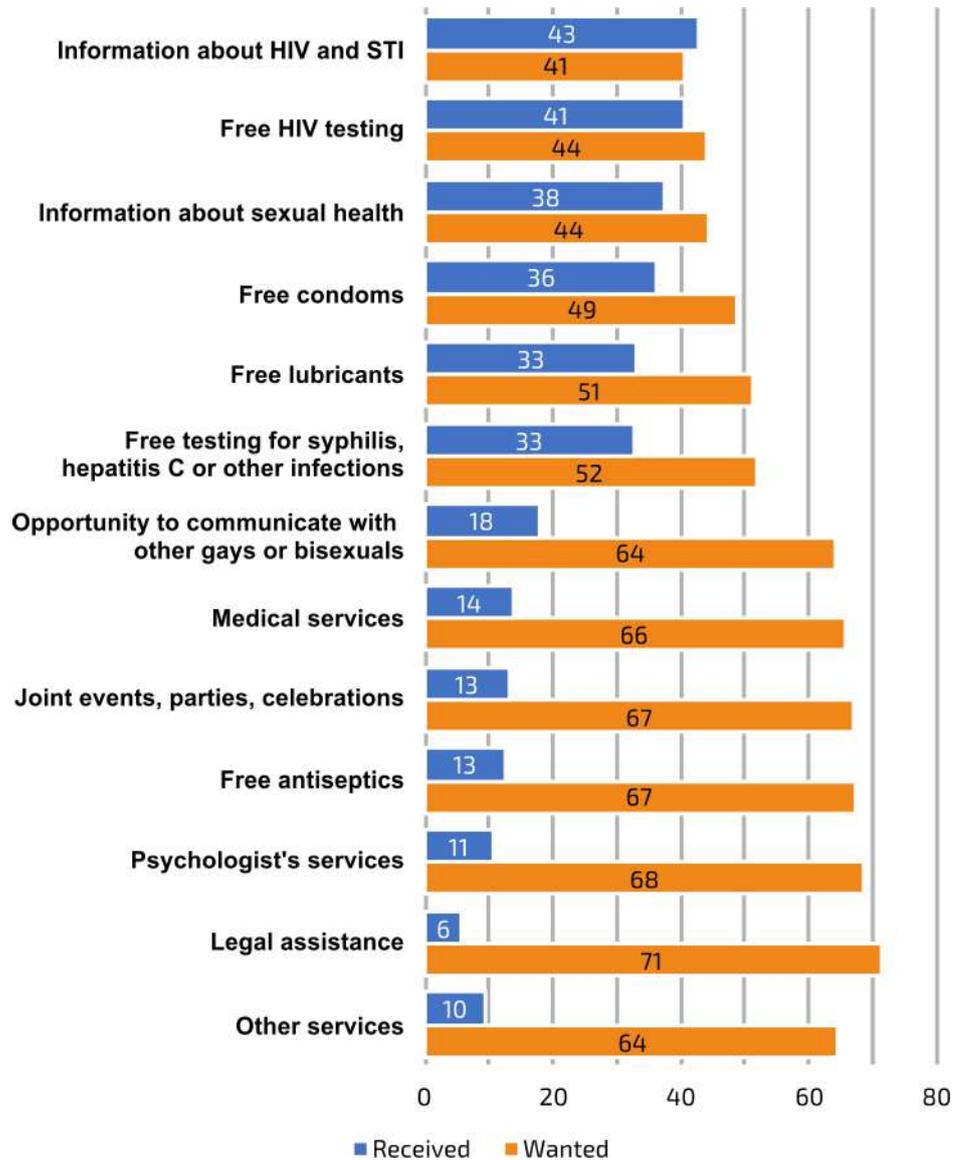
Figure 7.15: Receiving services from MSM-service organizations in the last 6 months in Ukraine, all respondents, $N = 1365$, %
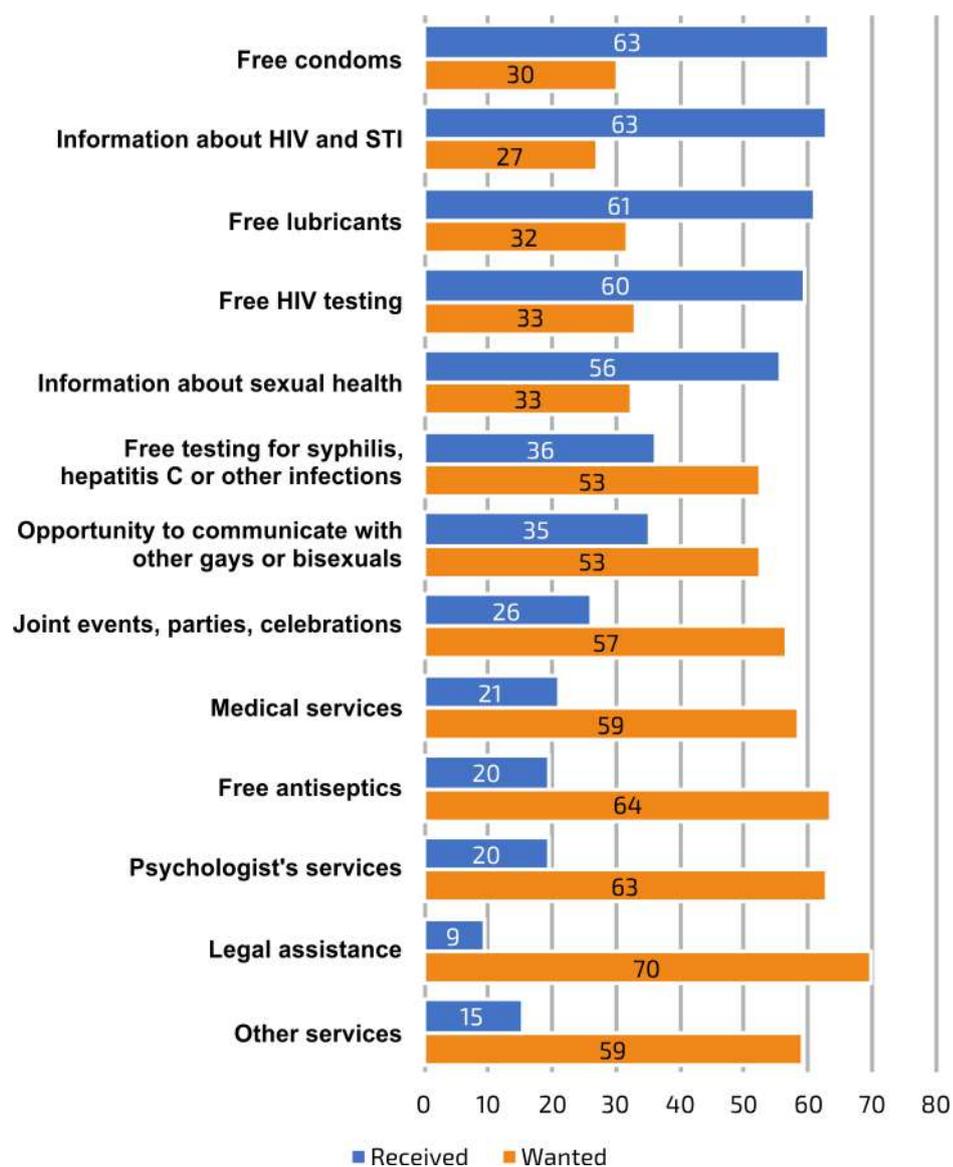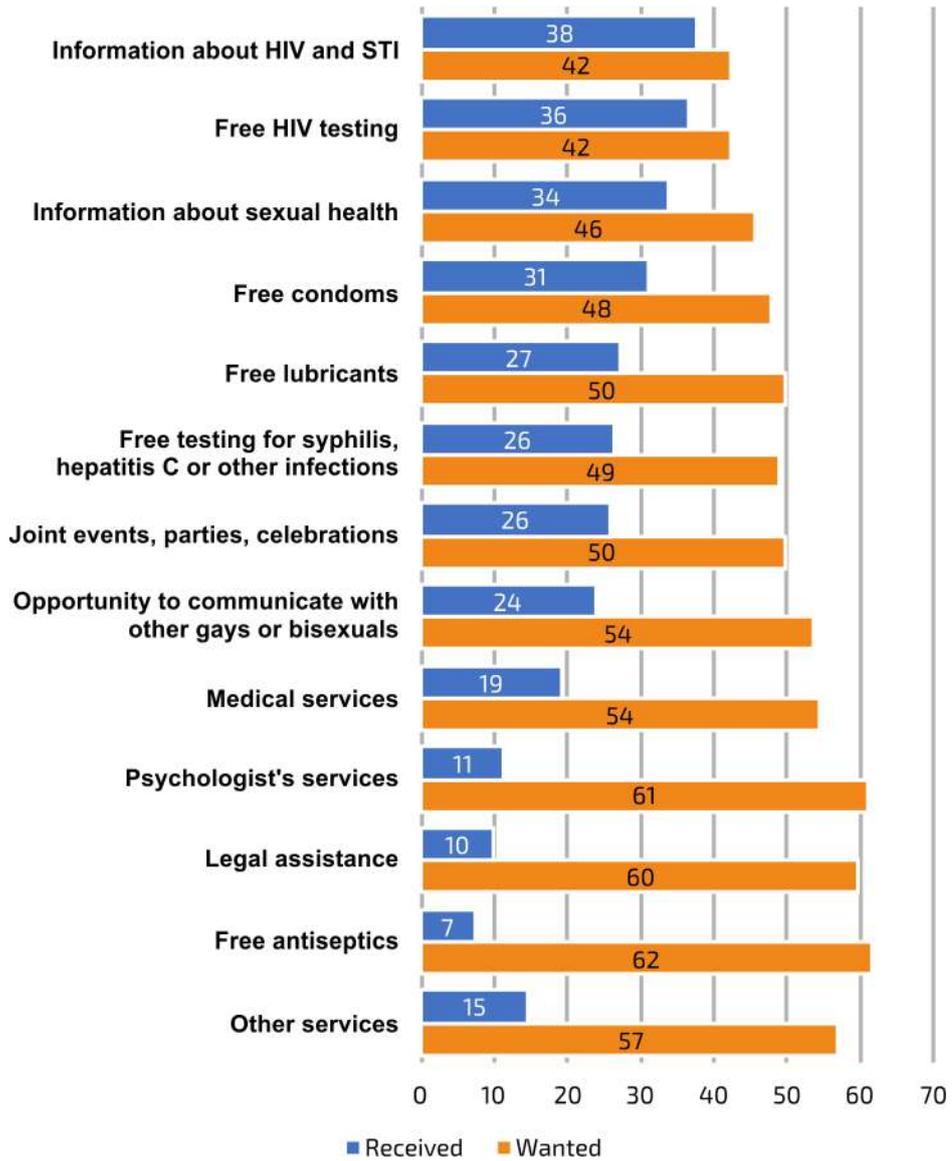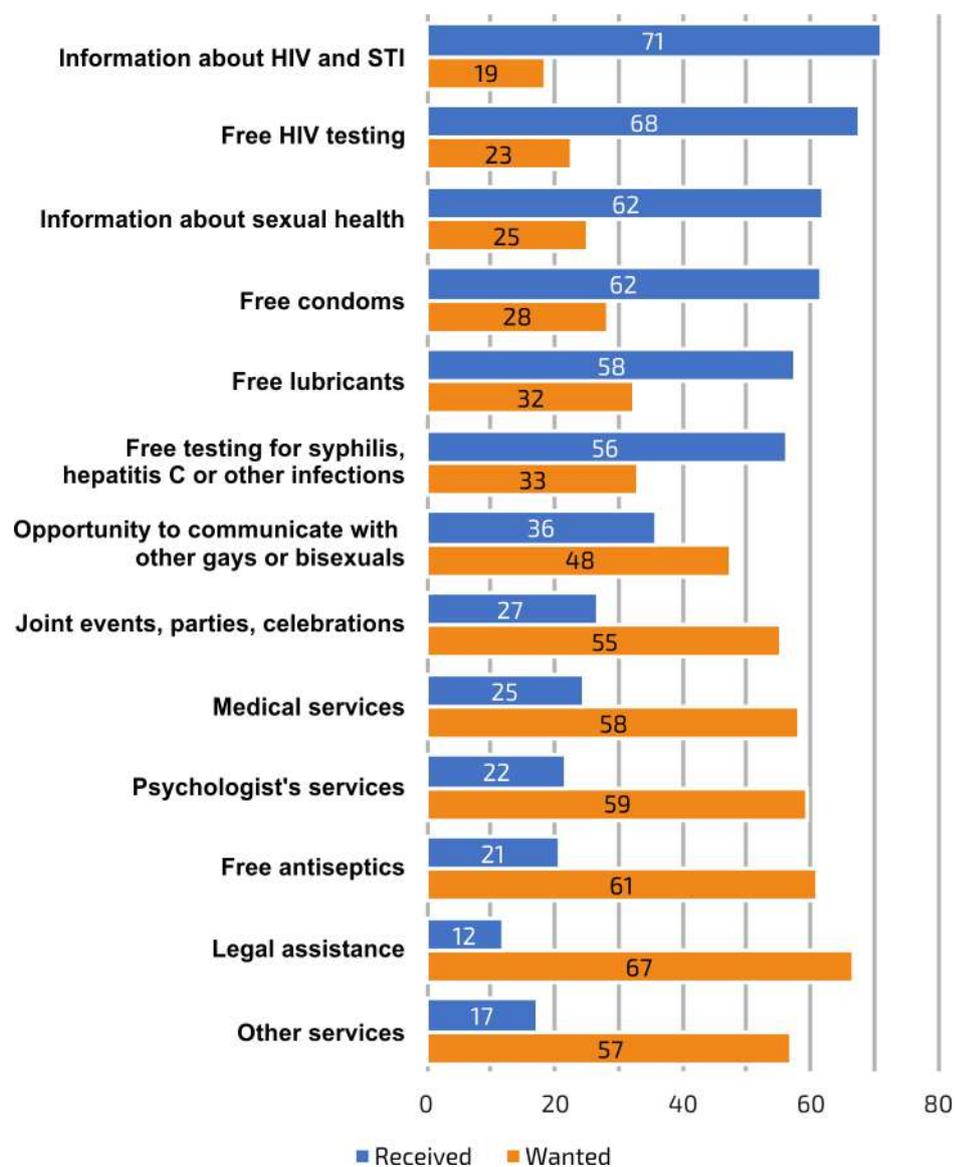
Figure 7.16: Receiving services from MSM-service organizations in the last 6 months in Ukraine, respondents with a nearby MSM-service NGO, $N = 567$, %

MSM NGO not far away (Table 7.2). Services in rows were sorted by coverage, and countries in columns were sorted by a sum of top-5 popular services, both in a descending order[6].

We see that respondents from Kyrgyzstan had the best coverage (Table 7.1). They were followed by respondents from Ukraine, Georgia, Armenia, and Belarus. In Georgia and Armenia, as well as in Kyrgyzstan, a relatively high percentage of respondents were covered by medical doctor services, and psychological and legal consulting. These countries were followed by Kazakhstan, Russia, and Azerbaijan was in the end of the list.

Table 7.1: Comparison of the share of men covered by various services, by country, %

	Kyrgyzstan	Ukraine	Georgia	Armenia	Belarus	Lithuania/Estonia	Kazakhstan	Russia	Azerbaijan	Total Sample
Information about HIV and STIs	55	43	38	33	37	32	28	21	15	28
HIV testing	53	41	36	35	34	30	24	20	16	26
Information about sexual health	50	38	34	35	33	29	23	17	12	24
Free condoms	51	36	31	36	34	24	16	12	19	20
Free testing for syphilis, hepatitis C and other infections	31	33	26	19	19	15	16	11	11	17
Free lubricants	49	33	27	30	31	14	9	9	15	17
Opportunity to communicate with other gays and bisexuals	44	18	24	27	19	12	11	8	9	12
Joint events, parties, celebrations	38	13	26	25	14	20	12	9	8	12
Medical services	31	14	19	29	13	12	13	8	9	11
Psychologist's services	27	11	11	13	10	10	7	4	6	7
Free antiseptics	15	13	7	10	10	6	5	4	6	7
Other services	24	10	15	20	8	5	4	3	4	6
Legal assistance	17	6	10	20	5	7	2	3	5	4
Total % of the top 5 rows	240	191	165	158	157	130	107	81	73	115

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[6]   The services were ordered by the total sample percentage in Table 7.1, and by Russia's percentage in Table 7.2 (as it was a country with the largest sample). The sum of the coverage shares for the 5 most done services was calculated for sorting convenience only, and was not intended for meaningful interpretations

Table 7.2: Comparison of the share of respondents who knew about a nearby MSM-service NGOs, and were covered by various services by country, %

	Kyrgyzstan	Ukraine	Belarus	Russia
Information about HIV and STIs	75	71	63	54
Information about sexual health	68	62	56	48
HIV testing	73	68	60	45
Free condoms	77	**62**	**63**	43
Free lubricants	73	58	**61**	35
Opportunity to communicate with other gays and bisexuals	65	36	35	31
Joint events, parties, celebrations	57	27	26	**29**
Free testing for syphilis, hepatitis C, and other infections	42	**56**	36	19
Medical services	44	25	21	16
Free antiseptics	23	21	20	12
Other services	38	17	15	11
Psychologist's services	40	22	20	11
Legal assistance	25	12	9	8
Total % of the top 5 rows	366	321	303	225

Ranking of countires correlates with the ordering by men's share that were aware about NGO for gays and bisexuals nearby (Fig. 7.1). The more men knew about such NGOs, the better was coverage (Ukraine is exception). An outreach job by Ukrainian MSM organizations that covered clients not coming to an NGO could be an explanation for it. Countries were ranked identically when considering only those who knew of NGO nearby (Table 7.2).

Extrapolating these findings to general MSM populations in the countries, we should note given different sample sizes and specifics of recruitment. Lower coverage for Russia, Belarus, and Ukraine appeared more credible than higher coverage in Kyrgyzstan, Armenia, and Georgia. Comparing Ukraine, Russia, and Belarus with each other, it can be assumed with some caution that coverage by services decreased in the same order in MSM populations.

7.4. Association between Receiving Services and Internalized Homonegativity

Receiving of each considered service was significantly associated with IH (Fig. 7.17). In each case, average homosexuality acceptance was significantly higher among those who received a certain service in the past 6 months. There was usually no significant difference between those who had not received a service, but wanted to; and those who neither received nor wanted it. Joint activities with other MSM, and free lubricants were the exceptions that showed a significant difference between these two groups (those who did not want a service showed even less acceptance of homosexuality).

Figure 7.17: Mean SIHS scores by wishing/receiveing certain services in the last 6 months (*Differences for all services is significant at p < 0.001, * N < 100*)

7.5. Receipt of Services, Homonegativity, and Additional Factors: Statistical Modeling

We fitted separate binary logistic models for each of 12 services from the list (Table 7.3). Models predicted receiving particular services in the previous 6 months before the survey.

Lower internalized homonegativity was significantly associated with greater odds for being covered by 9 out of the 12 services, even when controlling for other variables (Table 7.3). Three exceptions included medical doctor's services, free testing for other STIs, and free antiseptics. In the rest of cases, an increase in the acceptance of homosexuality by one point increased the odds of geting a service by 9 to 30%. Particular odds ratios varied from 1.09 [1.02–1.16] for HIV testing to 1.3 [1.14–1.5] for legal assistance.

As for other predictors, nearby organizations for gays and bisexuals had the most impressive effect, which makes much sense, as they provided those services. Having such an organization not far way related to a several times' increase in odds to receive a certain service. A particular OR's value varied by service.

The more closeted was a respondent, the lower were his odds for getting almost all services except free antiseptics. Sexual orientation and cohabitation with a male or female partner had no significant associations with receiving most of the services.

Education was significantly associated with receiving all services: the lower was educational level, the higher were odds of receiving services. Incomplete higher education, i. e. below Master's degree, and a lack of higher education were associated with significantly higher odds of getting services in the past six months in comparison with respondents who completed higher education.

An increase in age was negatively associated receiving 7 out of the 12 services, namely, associating and joint activities with other MSM, information about HIV, STIs, and sexual health, psychological services, HIV testing, and free condoms.

Living out of capital cities was also associated with lower probability of receiving 7 services. They did not include associating and joint activities with other MSM, psychological and legal services, and free testing for other STIs.

There was a significant between-country variability even controlling for other varaibles. For most of services, respondents from Kyrgyzstan and Ukraine had consistently higher odds to receive them in the past 6 month (in comparison with Russia). Exeptions included joint celebrations and legal assistance (for Ukraine), and free antiseptics (for Kyrgyzstan).

Other countries could have significant associations with one or a few services. For example, residence in Armenia or Azerbaijan related to lower odds to be informed about HIV and STIs. Living in Azerbaijan additionally related to lower odds for a free HIV testing in a NGO. On the other hand, respondents from Belarus had higher odds to receive free condoms.

Table 7.3: Odds ratios for obtaining MSM services. Binary logistic regressions on the SIHS score and other factors

	Associating with other MSM			Joint activities with MSM			Information about HIV		
	Coef.	OR	95% CI	Coef.	OR	95% CI	Coef.	OR	95% CI
SIHS (1-7 point scale)	0.19***	1.21	1.1–1.32	0.24***	1.27	1.17–1.39	0.14***	1.15	1.08–1.23
Country of residence (Ref. = Russia)									
Armenia	0.31	1.37	0.77–2.41	0.36	1.44	0.81–2.54	−0.58*	0.56	0.33–0.95
Azerbaijan	−0.74	0.48	0.19–1.18	−0.78	0.46	0.19–1.13	−1.19***	0.3	0.15–0.62
Belarus	0.26	1.29	0.93–1.79	−0.29	0.74	0.52–1.06	0.06	1.07	0.82–1.39
Lithuania / Estonia	−0.76**	0.47	0.27–0.79	−0.07	0.94	0.6–1.46	−0.37	0.69	0.47–1.02
Georgia	0.26	1.3	0.76–2.22	0.42	1.52	0.9–2.59	−0.12	0.89	0.55–1.43
Kazakhstan	0.2	1.23	0.7–2.16	0.08	1.08	0.63–1.86	0.31	1.37	0.93–2
Kyrgyzstan	1.31***	3.72	2.37–5.82	0.93***	2.54	1.62–3.98	0.64**	1.9	1.24–2.92
Ukraine	0.26*	1.29	1.03–1.62	−0.23	0.8	0.63–1.01	0.61***	1.83	1.55–2.17
City of residence (Ref. = Capital city)									
Other large city	−0.19	0.83	0.68–1.01	−0.13	0.88	0.73–1.07	−0.27***	0.76	0.66–0.88
Small town / rural area	0.03	1.03	0.76–1.4	−0.16	0.85	0.62–1.16	−0.27**	0.76	0.61–0.94
Age, years (Ref. = 30 years)	−0.02**	0.98	0.97–0.99	−0.02***	0.98	0.96–0.99	−0.01**	0.99	0.98–1[1]
Education (Ref. = Master's degree)									
Higher education below Master's degree	0.45***	1.57	1.27–1.95	0.43***	1.53	1.24–1.9	0.18*	1.2	1.03–1.41
Below higher education	0.48***	1.62	1.28–2.06	0.44***	1.56	1.23–1.98	0.23**	1.25	1.06–1.49
Sexual orientation (Ref. = Gay)									
Bisexual	0.21	1.24	0.97–1.58	0.25*	1.29	1.01–1.64	−0.2*	0.82	0.69–0.98
Heterosexual / other	0.04	1.04	0.72–1.51	0.16	1.17	0.82–1.69	−0.22	0.8	0.62–1.04
Outness: others knew respondent was MSM (1 = Everyone, 5 = No one)	−0.19***	0.83	0.76–0.9	−0.23***	0.79	0.73–0.86	−0.11***	0.89	0.84–0.95
Cohabitation (Ref. = with others, but not sexual partners)									
Live alone	−0.04	0.96	0.77–1.2	−0.02	0.98	0.79–1.22	−0.04	0.96	0.82–1.13
With wife/female partner	−0.23	0.79	0.5–1.27	−0.91**	0.4	0.22–0.72	−0.25	0.78	0.58–1.06
With male partner	−0.14	0.87	0.67–1.12	−0.04	0.96	0.75–1.22	−0.26**	0.77	0.64–0.93
MSM-service NGO around (Ref. = No)									
Yes	2.26***	9.55	7.8–11.68	1.89***	6.6	5.43–8.01	1.78***	5.95	5.16–6.86
(Intercept)	−3.57***	0.03	0.01–0.05	−3.4***	0.03	0.02–0.06	−1.67***	0.19	0.12–0.3

N = 5774–5776 depending on the model. Statistical significance of the parameters: * at p = 0.05; ** at p = 0.01; *** at p = 0.001
[1] The actual value of the upper bound of the confidence interval is greater than 0.99 and less than 1

Table 7.3 continued from previous page

	Information about sexual health			Psychological service			Legal aid		
	Coef.	OR	95% CI	Coef.	OR	95% CI	Coef.	OR	95% CI
SIHS (1-7 point scale)	0.19***	1.21	1.1–1.32	0.24***	1.27	1.17–1.39	0.14***	1.15	1.08–1.23
Country of residence (Ref. = Russia)									
Armenia	0.31	1.37	0.77–2.41	0.36	1.44	0.81–2.54	−0.58*	0.56	0.33–0.95
Azerbaijan	−0.74	0.48	0.19–1.18	−0.78	0.46	0.19–1.13	−1.19***	0.3	0.15–0.62
Belarus	0.26	1.29	0.93–1.79	−0.29	0.74	0.52–1.06	0.06	1.07	0.82–1.39
Lithuania / Estonia	−0.76**	0.47	0.27–0.79	−0.07	0.94	0.6–1.46	−0.37	0.69	0.47–1.02
Georgia	0.26	1.3	0.76–2.22	0.42	1.52	0.9–2.59	−0.12	0.89	0.55–1.43
Kazakhstan	0.2	1.23	0.7–2.16	0.08	1.08	0.63–1.86	0.31	1.37	0.93–2
Kyrgyzstan	1.31***	3.72	2.37–5.82	0.93***	2.54	1.62–3.98	0.64**	1.9	1.24–2.92
Ukraine	0.26*	1.29	1.03–1.62	−0.23	0.8	0.63–1.01	0.61***	1.83	1.55–2.17
City of residence (Ref. = Capital city)									
Other large city	−0.19	0.83	0.68–1.01	−0.13	0.88	0.73–1.07	−0.27***	0.76	0.66–0.88
Small town / rural area	0.03	1.03	0.76–1.4	−0.16	0.85	0.62–1.16	−0.27***	0.76	0.61–0.94
Age, years (Ref. = 30 years)	−0.02**	0.98	0.97–0.99	−0.02***	0.98	0.96–0.99	−0.01**	0.99	0.98–1[1]
Education (Ref. = Master's degree)									
Higher education below Master's degree	0.45***	1.57	1.27–1.95	0.43***	1.53	1.24–1.9	0.18*	1.2	1.03–1.41
Below higher education	0.48***	1.62	1.28–2.06	0.44***	1.56	1.23–1.98	0.23**	1.25	1.06–1.49
Sexual orientation (Ref. = Gay)									
Bisexual	0.21	1.24	0.97–1.58	0.25*	1.29	1.01–1.64	−0.2*	0.82	0.69–0.98
Heterosexual / other	0.04	1.04	0.72–1.51	0.16	1.17	0.82–1.69	−0.22	0.8	0.62–1.04
Outness: others knew respondent was MSM (1 = Everyone, 5 = No one)	−0.19***	0.83	0.76–0.9	−0.23***	0.79	0.73–0.86	−0.11***	0.89	0.84–0.95
Cohabitation (Ref. = with others, but not sexual partners)									
Live alone	−0.04	0.96	0.77–1.2	−0.02	0.98	0.79–1.22	−0.04	0.96	0.82–1.13
With wife/female partner	−0.23	0.79	0.5–1.27	−0.91**	0.4	0.22–0.72	−0.25	0.78	0.58–1.06
With male partner	−0.14	0.87	0.67–1.12	−0.04	0.96	0.75–1.22	−0.26**	0.77	0.64–0.93
MSM-service NGO around (Ref. = No)									
Yes	2.26***	9.55	7.8–11.68	1.89***	6.6	5.43–8.01	1.78***	5.95	5.16–6.86
(Intercept)	−3.57***	0.03	0.01–0.05	−3.4***	0.03	0.02–0.06	−1.67***	0.19	0.12–0.3

N = 5774–5776 depending on the model. Statistical significance of the parameters: * at p = 0.05; ** at p = 0.01; *** at p = 0.001

[1] The actual value of the upper bound of the confidence interval is greater than 0.99 and less than 1

Table 7.3 continued from previous page

	Medical doctor			Free HIV testing			Free testing for other STIs		
	Coef.	OR	95% CI	Coef.	OR	95% CI	Coef.	OR	95% CI
SIHS (1-7 point scale)	0.07	1.08	0.99–1.17	0.09**	1.09	1.02–1.16	0.07	1.08	1–1.16
Country of residence (Ref. = Russia)									
Armenia	0.9***	2.45	1.42–4.24	0.01	1.01	0.6–1.69	−0.29	0.74	0.39–1.43
Azerbaijan	−0.2	0.82	0.36–1.86	−0.77*	0.46	0.24–0.91	−0.31	0.73	0.34–1.58
Belarus	0.05	1.05	0.74–1.49	0.15	1.17	0.89–1.52	0.22	1.25	0.92–1.7
Lithuania / Estonia	−0.38	0.68	0.4–1.16	−0.26	0.77	0.52–1.13	−0.31	0.74	0.46–1.19
Georgia	0.3	1.35	0.77–2.35	0.02	1.02	0.63–1.64	0.43	1.53	0.92–2.54
Kazakhstan	0.41	1.51	0.92–2.5	0.12	1.13	0.75–1.68	0.44	1.55	0.98–2.44
Kyrgyzstan	0.88***	2.4	1.55–3.71	0.76***	2.13	1.4–3.23	0.65***	1.92	1.25–2.93
Ukraine	0.35**	1.42	1.13–1.78	0.77***	2.17	1.83–2.57	1.28***	3.61	3.01–4.33
City of residence (Ref. = Capital city)									
Other large city	−0.2*	0.82	0.67–1[1]	−0.18*	0.84	0.72–0.97	−0.16	0.85	0.72–1.01
Small town / rural area	0.1	1.11	0.84–1.46	−0.28*	0.75	0.6–0.94	−0.21	0.81	0.63–1.05
Age, years (Ref. = 30 years)	0	1	0.99–1.01	−0.01**	0.99	0.98–1[1]	0	1	0.99–1.01
Education (Ref. = Master's degree)									
Higher education below Master's degree	0.55***	1.74	1.4–2.17	0.38***	1.46	1.25–1.72	0.35***	1.41	1.17–1.71
Below higher education	0.86***	2.35	1.86–2.97	0.53***	1.7	1.43–2.02	0.61***	1.83	1.5–2.25
Sexual orientation (Ref. = Gay)									
Bisexual	0.21	1.23	0.97–1.55	−0.07	0.93	0.78–1.12	0.09	1.09	0.89–1.34
Heterosexual / other	−0.09	0.91	0.63–1.32	−0.02	0.98	0.76–1.28	−0.01	0.99	0.73–1.35
Outness: others knew respondent was	−0.14***	0.87	0.81–0.94	−0.14***	0.87	0.82–0.92	−0.09**	0.91	0.85–0.98
MSM (1 = Everyone, 5 = No one)									
Cohabitation (Ref. = with others, but not sexual partners)									
Live alone	−0.06	0.94	0.75–1.17	0.08	1.08	0.92–1.27	−0.03	0.97	0.8–1.17
With wife/female partner	−0.4	0.67	0.43–1.04	−0.22	0.8	0.59–1.09	−0.2	0.82	0.57–1.17
With male partner	−0.09	0.91	0.71–1.18	−0.02	0.98	0.81–1.18	−0.13	0.88	0.7–1.1
MSM-service NGO around (Ref. = No)									
Yes	1.23***	3.42	2.82–4.17	1.62***	5.06	4.38–5.84	1.27***	3.58	3.03–4.23
(Intercept)	−2.94***	0.05	0.03–0.1	−1.75***	0.17	0.11–0.27	−2.64***	0.07	0.04–0.12

$N = 5774$–5776 depending on the model. Statistical significance of the parameters: * at $p = 0.05$; ** at $p = 0.01$; *** at $p = 0.001$
[1] The actual value of the upper bound of the confidence interval is greater than 0.99 and less than 1

Table 7.3 continued from previous page

	Free antiseptics			Free condoms			Free lubricants		
	Coef.	OR	95% CI	Coef.	OR	95% CI	Coef.	OR	95% CI
SIHS (1-7 point scale)	0.07	1.07	0.96–1.19	0.1**	1.11	1.03–1.19	0.1*	1.11	1.02–1.2
Country of residence (Ref. = Russia)									
Armenia	0.1	1.11	0.51–2.42	0.53	1.71	1–2.91	0.61*	1.84	1.07–3.19
Azerbaijan	−0.51	0.6	0.18–1.99	−0.13	0.88	0.45–1.73	−0.02	0.98	0.47–2.05
Belarus	0.38	1.46	0.98–2.19	0.61***	1.84	1.39–2.44	0.86***	2.36	1.76–3.18
Lithuania / Estonia	−0.59	0.55	0.26–1.18	−0.24	0.79	0.52–1.2	−0.75**	0.47	0.29–0.77
Georgia	−0.15	0.86	0.4–1.87	0.23	1.26	0.76–2.07	0.28	1.33	0.79–2.24
Kazakhstan	0.22	1.25	0.62–2.54	0.15	1.16	0.72–1.88	−0.3	0.74	0.4–1.39
Kyrgyzstan	0.38	1.46	0.83–2.58	1.08***	2.94	1.89–4.57	1.41***	4.11	2.63–6.43
Ukraine	0.79***	2.21	1.7–2.88	0.94***	2.55	2.12–3.07	1.18***	3.24	2.66–3.95
City of residence (Ref. = Capital city)									
Other large city	−0.25*	0.78	0.61–1	−0.3***	0.74	0.63–0.88	−0.4***	0.67	0.56–0.8
Small town / rural area	−0.08	0.92	0.64–1.33	−0.28*	0.76	0.58–0.98	−0.31*	0.73	0.55–0.98
Age, years (Ref. = 30 years)	−0.01	0.99	0.98–1.01	−0.01**	0.99	0.98–1	< 0.01	1	0.99–1.01
Education (Ref. = Master's degree)									
Higher education below Master's degree	0.4**	1.5	1.14–1.98	0.27**	1.31	1.09–1.56	0.21*	1.23	1.01–1.5
Below higher education	0.77***	2.16	1.61–2.9	0.26*	1.3	1.06–1.59	0.21	1.24	0.99–1.55
Sexual orientation (Ref. = Gay)									
Bisexual	0.07	1.07	0.79–1.44	−0.11	0.89	0.73–1.1	−0.14	0.87	0.69–1.1
Heterosexual / other	−0.2	0.82	0.5–1.33	−0.32*	0.73	0.53–1[1]	−0.35	0.71	0.5–1.01
Outness: others knew respondent was	−0.06	0.94	0.85–1.04	−0.14***	0.87	0.81–0.93	−0.16***	0.85	0.79–0.92
MSM (1 = Everyone, 5 = No one)									
Cohabitation (Ref. = with others, but not sexual partners)									
Live alone	0.03	1.03	0.78–1.35	0.11	1.12	0.93–1.34	0.17	1.19	0.97–1.45
With wife/female partner	−0.33	0.72	0.4–1.3	−0.66**	0.52	0.34–0.78	−0.68**	0.51	0.32–0.81
With male partner	−0.07	0.93	0.68–1.28	0.09	1.09	0.88–1.35	0.11	1.12	0.89–1.41
MSM-service NGO around (Ref. = No)									
Yes	1.48***	4.38	3.41–5.61	2.06***	7.83	6.7–9.16	2.21***	9.07	7.62–10.8
(Intercept)	−3.86***	0.02	0.01–0.05	−2.35***	0.1	0.06–0.16	−2.73***	0.07	0.04–0.12

$N = 5774$–5776 depending on the model. Statistical significance of the parameters: * at $p = 0.05$; ** at $p = 0.01$; *** at $p = 0.001$
[1] The actual value of the upper bound of the confidence interval is greater than 0.99 and less than 1

Conclusions

Access to of MSM-service oragnizations was very uneven between countries, and generally inadequate. Access to NGOs was probably overestimated in countries with small sample sizes, because a significant share of respondents there was recruited through such NGOs.

Services for MSM could be grouped into three categories. The most provided services included informating about HIV/STIs and sexual health, HIV testing, distribution of free condoms and lubricants. Less popular services included organizing space for associating and joint events, activities for MSM, as well as free testing for other STIs. Services by a medical doctor, a psychologist, or lawer, as weel as free antiseptics were the least provided services.

Overall service coverage was rather low, but it varied considerably between countries. This was not surprising, given a similar variation in access to NGOs for MSM. Respondents with access to a relevant organization, coverage indicators were significantly higher. For example, if we consider three services, namely, informing about HIV and STIs, HIV testing, and free condoms, coverage for all respondents was 28%, 26%, and 20% respectively. For those with access to an NGO, the coverage was 60%, 55%, and 53%.

It looks like there was a highly unsatisfied demand for all not-so-commonly provided services from joint evens to legal assistance. The majority of respondents indicated that they did not received them, but would like to get.

If we compare individual countries, the MSM from Kyrgyzstan had the highest service coverage. They were followed by respondents form Ukraine, Georgia, Armenia, Belarus, and the Baltic countries. Respondents from Kazakhstan, Russia, and Azerbaijan had the lowest service coverage. Trying to extrapolate the findings to general MSM populations, one should take into account the aforementioned specifics of sample design in certain countries. We believe that coverage by services for MSM might be overestimated in Kyrgyzstan, Georgia, and Armenia. Rates for Ukraine, Belarus, and Russia might be more credible.

Receiving all 12 services had a significant association with IH. Those who received a service in the past six months had lower average IH than those who did not receive it. The associations remained significant for the most of services in statistical models with other controlling variables related to social demographics or sexual orientation. Only associations between IH and doctor's services, free testing for STIs, and free antiseptics turned insignificant.

In other words, higher IH looked like a barrier to receiving prevention services. We also assume that some services could have inverse relationship, i. e. taking a service could decrease own IH. Such services might include joint activities, events and celebrations with other MSM, legal and psychological consultations. Given that such services were rarely provided, and highly demanded, Increase in their provision would possibly reduce average IH.

Having nearby NGOs for MSM was apparently the most important factor that affected receiving services. Having such organization around increased odds for receiving services by several times. Being in a closet and living outside capital cities reduced receiving all or most of services. Respondents who had a Master's degree educational level or who were older had usually lower probability to receive services. We assume that older and more affluent MSM generally considered it less necessary to go to a NGO to receive some kind of service. Service coverage also varied by countries even controlling for other variables.

8. Human Rights for LGBT and Activism

LGBT activism and participation in organizations for the common good of gays and bisexuals might not directly relate to personal health MSM, but it matters in a long-term perspective.

The more people are inclined to participate in such activities, the more easily and efficiently MSM can mobilize the community, and, in particular, advocate expanding access to HIV and other health services. In turn, it can improve average sexual health of MSM in a particular country or region. Besides that, if a gay or a bisexual is open to cooperation with a relevant NGO or defends his rights, then it should be easier to engage him in HIV prevention programs.

In addition to it, support for LGBT rights, and their legislative recognition eventually decrease homophobia in a society, and, consequently, IH among MSM.

Therefore, we considered it advisable to study how much MSM in CEECA countries would like to participate in MSM organizations, to support LGBT rights publicly, and to be LGBT rights' activists.

8.1. Willingness to Participate in NGOs for Gays and Bisexuals

Variability by Country. In part, we have already discussed participation in MSM-service organizations in section 4.8. In particular, the share of participants was rather high in some countries, up to 17% in Macedonia and Kyrgyzstan. Now we consider those who wanted to participate in such organizations, and those who did not. The share of those willing to participate in organizations for gays and bisexuals ranged from 26 to 40% by country, while the share of those unwilling to participate ranged from 28 to 35% (Fig.8.1).

Association with Homonegativity. Willingness to participate in the organizations for gays and bisexuals significantly correlated with homonegativity (Fig. 8.2). The highest average homosexuality acceptance was observed among those who had already participated in NGOs. It was slightly lower among those who did not participate in NGOs, but would like to. Those with a "don't-know" response had even lower SIHS score, while those who did not wish to participate had the lowest average homosexuality acceptance. Mean SIHS scores were significantly different for all categories.

Similar significant differences in average IH were observed in all countries, except Azerbaijan (Fig. 8.3). It generally followed the pattern that was revealed for overall sample, or at least displayed difference between participants/wannabes, and the undecided/refused.

8.2. Support for LGBT Rights

Variability by Country. We asked whether respondents considerd it necessary to publicly advocate rights for LGBT, and counteract their violation. Positive responses varied from 53% for Russia to 81% for Macedonia (Fig. 8.4). The rest responses were split between
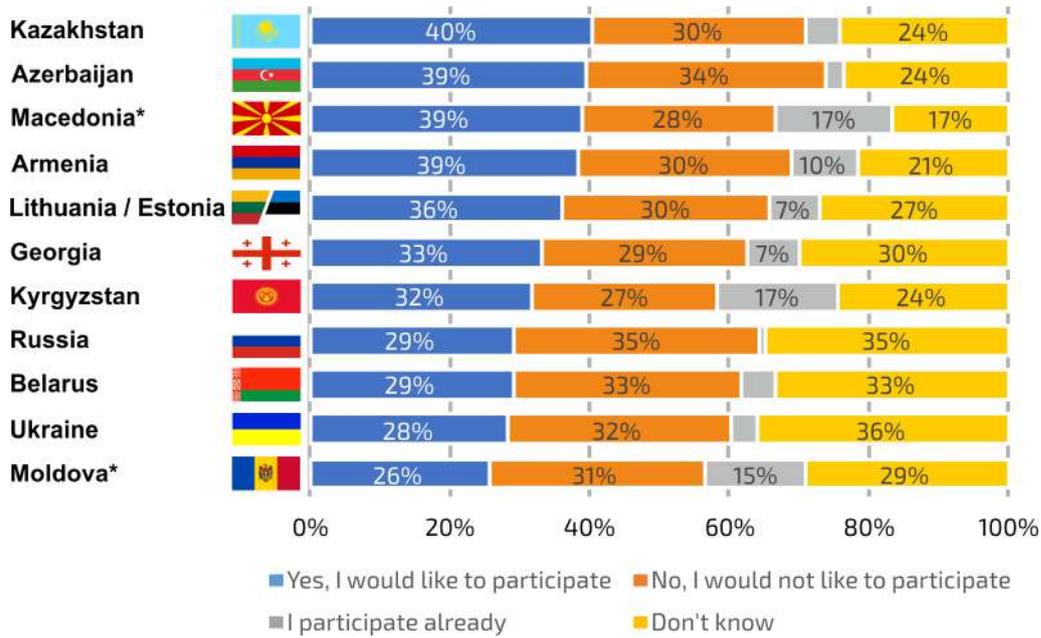
Figure 8.1: Responses to the question "Would you like to participate in an organization for gays and bisexuals?" by country, % (*Differences between countries are significant at $p < 0.001$, * $N < 100$*)
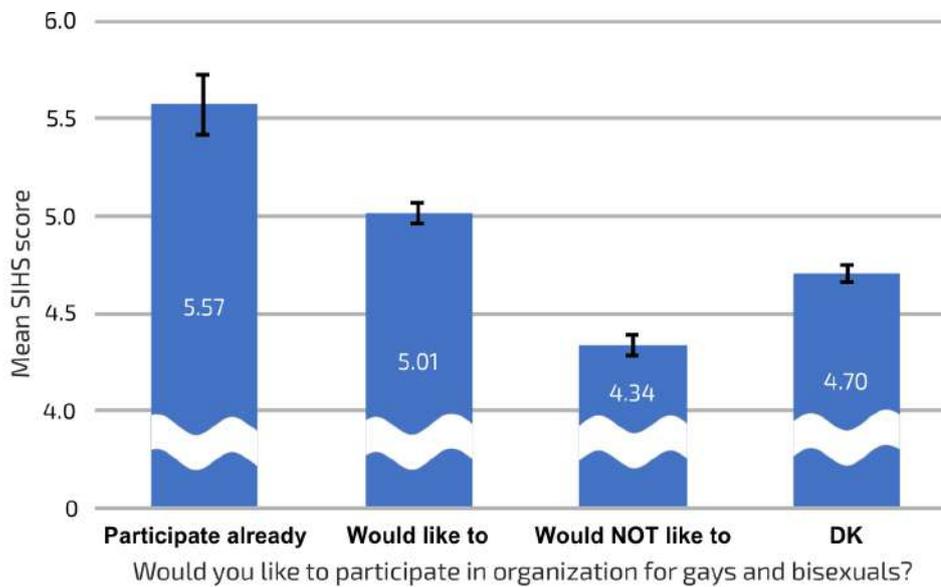
Figure 8.2: Mean SIHS score by willingness to participate in NGOs (*The differences are significant at $p = 0.001$*)

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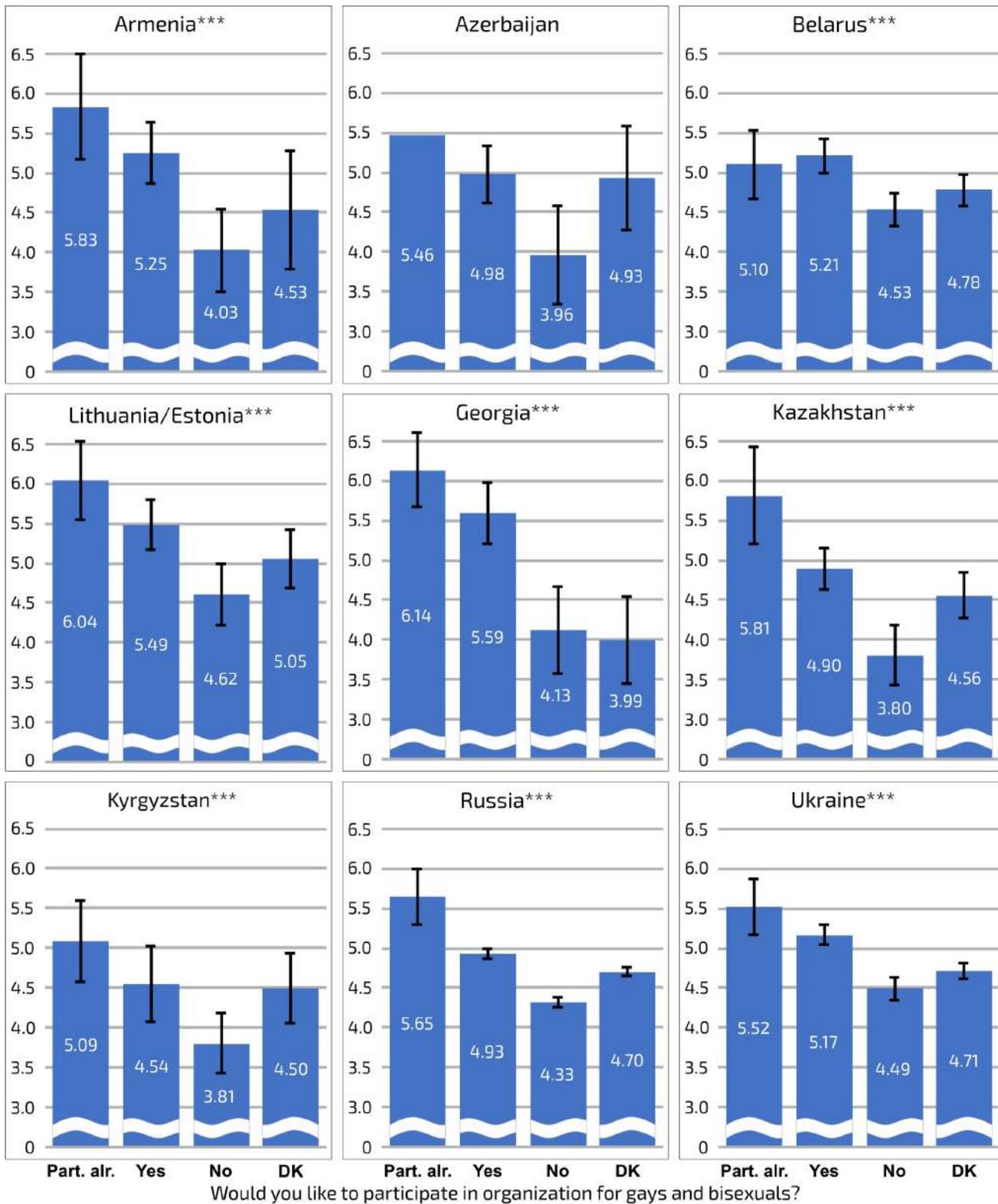
Figure 8.3: Mean SIHS score by country and willingness to participate in NGOs (*** *the differences are significant at p $\leq$ 0.001*)

negative (9–23%) and undecided (9–32%) responses. In other words, most of respondents, but far from everyone supported public advocacy of rights for LGBT.

The greatest support for the public advocation of LGBT rights was in Macedonia, and to a lesser extent, in Georgia (78%), and the Baltic countries (72%). Then the South Caucasus countries, Ukraine, and Belarus followed (support from 65 to 69%). Kazakhstan, Kyrgyzstan, Moldova, and Russia showed the lowest support (53–57%).
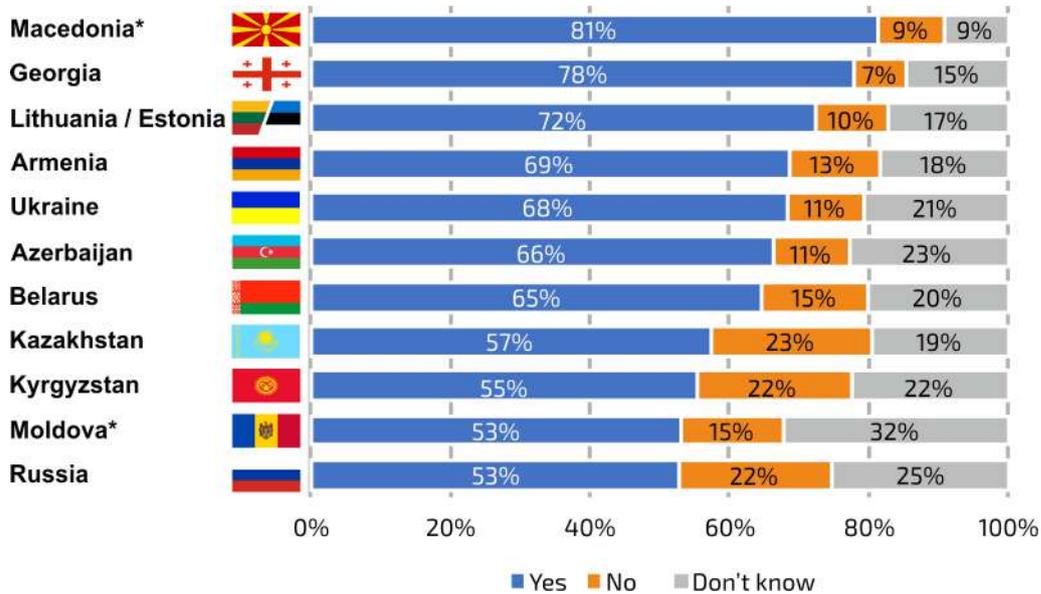
Figure 8.4: Responses to the question "Do you consider it necessary to advocate publicly rights of LGBT and to oppose their violation?" by country, % (*Differences between countries are significant at p < 0.001, * N < 100*)

Association with Homonegativity.   As might be expected, support for the public advocacy of LGBT rights was significantly associated with acceptance of homosexuality. Respondents who supported LGBT rights had the highest average SIHS score (Fig. 8.5). Those who were uncertain had a significantly lower average score. Those who did not support rights advocacy had an even lower homosexuality acceptance. Differences were significant between each other. A similar significant pattern was observed in all countries, again, except Azerbaijan (Fig. 8.6). In particular countries, difference between some categories could be insignificant due to sample size considerations.

There are no significant differences in Belarus and Lithuania/Estonia between those who do not support the protection of rights and those who are undecided. Those who support the protection of rights have a significantly higher level of acceptance of themselves.

In Kyrgyzstan, there are no differences between those who support the protection of rights and those who are undecided. Those who do not support the protection of rights have a significantly lower level of acceptance of themselves.
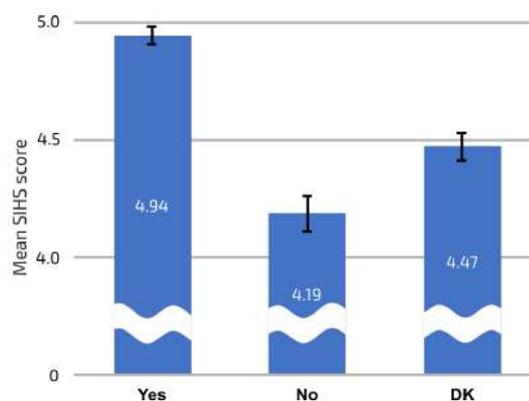
Figure 8.5: Mean SIHS score by support the protection of rights for LGBT people (*The differences are significant at p < 0.001*)

In Armenia and Kazakhstan, there are no significant differences between undecided respondents and the two other categories. Only the differences between those who support the protection of rights and those who do not are significant: the first group has a higher level of acceptance of themselves.

In Georgia, due to the wide confidence interval, those who do not support the protection of rights do not differ in terms of their level of IH from those who do support the protection of rights or from those who are undecided. There is only a significant difference between those who support the protection of rights and those who do not.

8.3. Manifestations of LGBT Activism

Prevalence of Individual Manifestations of LGBT Activism. We suggested a number of actions that could be considered as manifestations of LGBT activism, and asked respondents how often they had been involved in such actions in the last 12 months: never, once, or more than once.

Answers of All Respondents. Signing petitions and help to victims of discrimination or violence were the most widespread activities in the overall sample (Fig. 8.7). 7% and 6% of respondents respectively had been involved in those activities more than once in the past year. Together with those who had engaged just once, the rates made up 19% and 14% respectively. Additionally, 2 to 7% of respondents participated in other activities to support LGBT once or more in the last year.

Azerbaijan

Help to victims of discrimination and violence was relatively widespread In Azerbaijan (Fig. 8.8), with 18% done this more than once in the last 12 months. A total of 27% of respondents
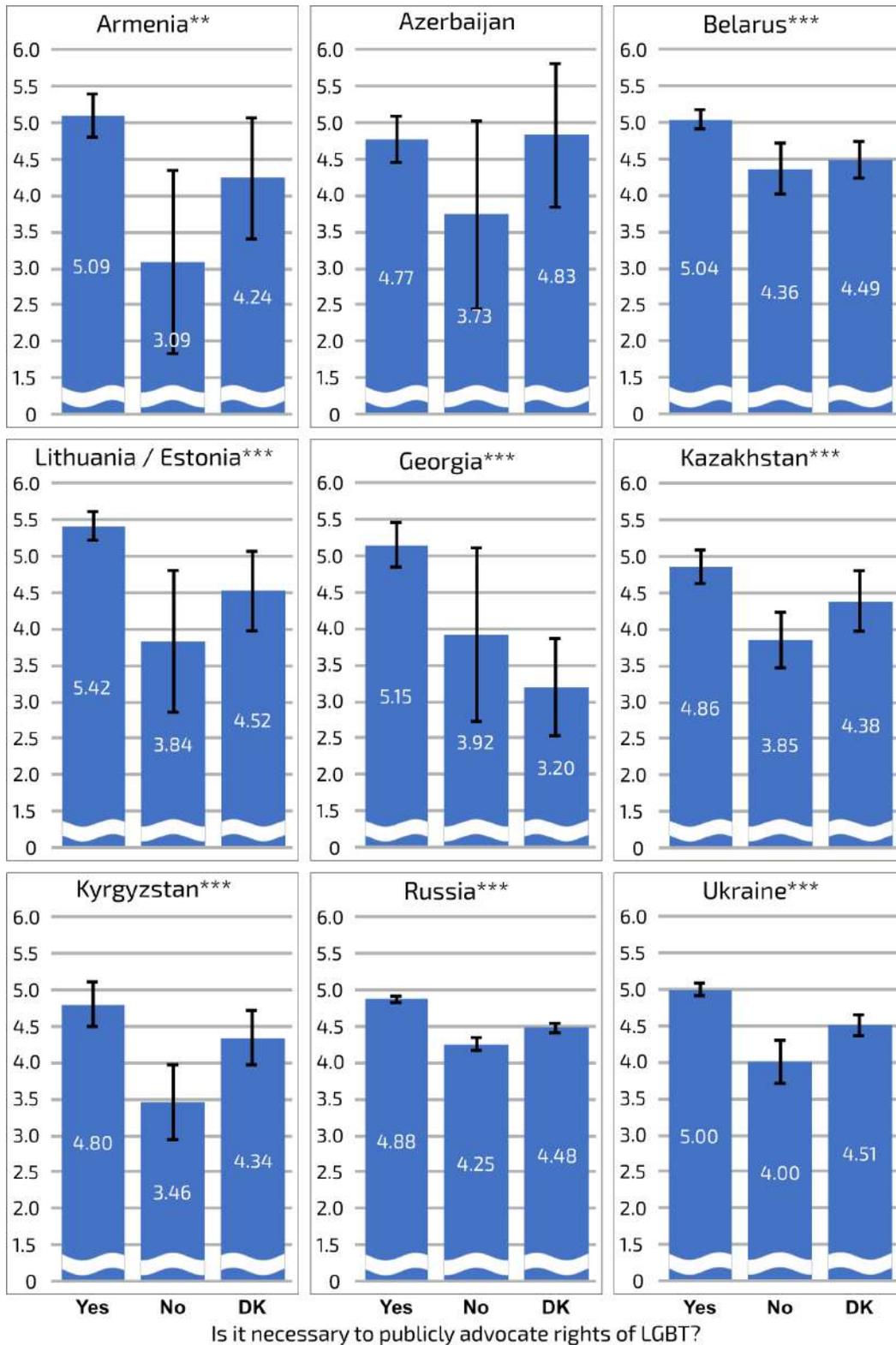
Figure 8.6: Mean SIHS score by support the protection of rights for LGBT people by country (*Statistical significance of differences: ** at p = 0.01; *** at p ≤ 0.001*)   119

Figure 8.7: Activities to protect LGBT rights in the last 12 months among all respondents, % (*N ranges from 7,938 to 8,041 for particular activities*)

indicated that they had helped at least once. The surveyed MSM also signed petitions relatively often: 18% did this at least once or more. Popularity of those actions could have been related ot massive police raids for gays and transgender people in September, 2017, when dozens of them were detained[7]. Also, 13% wrote in the media, and 11% prepared materials about LGBT issues.

Armenia

Helping victims from LGBT community was even more common here. In particular, 42% of respondents was engaged, while 27% did this more than once in the past 12 months (Fig. 8.9). Signing petitions (23% in total) and preparation of analytical/educationl materials (22% in total) were also relatively widespread.

Belarus

LGBT activism was less popular among respondents from Belarus (Fig. 8.10). In total, 17% had helped victims (7% for more than once) in the last year, 13% had signed petitions, and 11% had participated in preparation of analytical/educational materials.

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[7]   See Рзаев К. (2017). Информационный Бюллетень "Стигма и дискриминация по отношению к ЛГБТ сообществу в Азербайджане 2017–2018". Requested from "Gender and Development" Social Union

Figure 8.8: Activities to protect LGBT rights in the last 12 months in Azerbaijan, % (*N ranges from 111 to 115 for particular activities*)

Figure 8.9: Activities to protect LGBT rights in the last 12 months in Armenia, % (*N ranges from 130 to 135 for particular activities*)
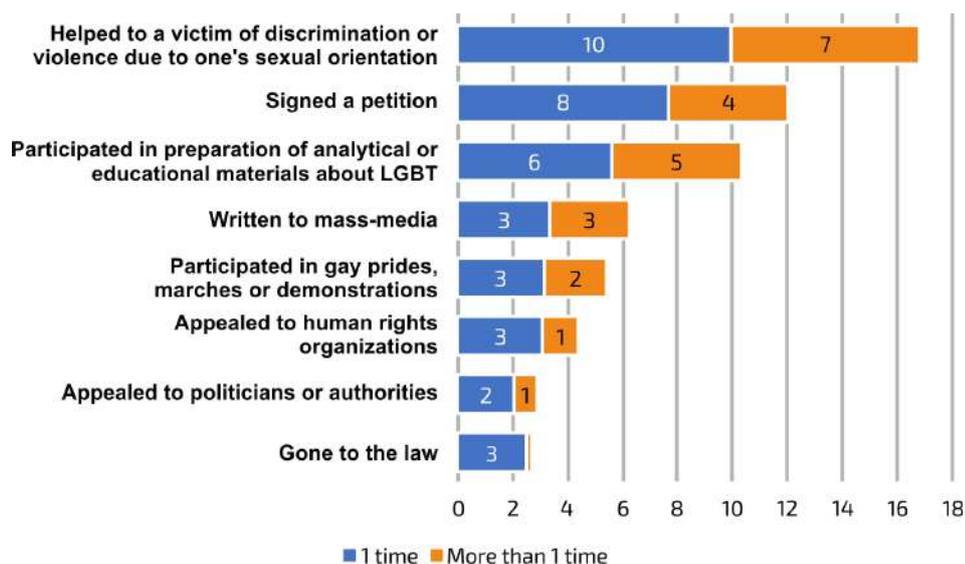
Figure 8.10: Activities to protect LGBT rights in the last 12 months in Belarus, % (*N ranges from 479 to 483 for particular activities*)

Georgia

Activism was rather widespread among respondents form here (Fig. 8.11) with 42% of them having helped victims (24% for more than once). Also, 31% signed petitions, 26% developed analytical and educational materials. Writing texts for the media, participating in gay pride and marches, and appeals to human rights organizations were also relatively common.

Kazakhstan

Activism was less widespread in Kazakhstan (Fig. 8.12). In particular, only 19% of respondents had signed petitions at least once, while 17% had helped victims of discrimination or violence at least once. These were the most widespread manifestations of activism in the previuos 12 months.

Kyrgyzstan

In Kyrgyzstan, particular activities were slightly more widespread than in Kazakhstan (Fig. 8.13). 25% of respondents had helped victims, 20% developed analytics or educational materials, while 17% signed petitions at least once in the last year.

Lithuania/Estonia

The MSM surveyed in Lithuania/Estonia were relatively active in the past 12 months (Fig. 8.14). In particular, 32% had signed petitions, with 16% doing so more than once. Notable 27% of
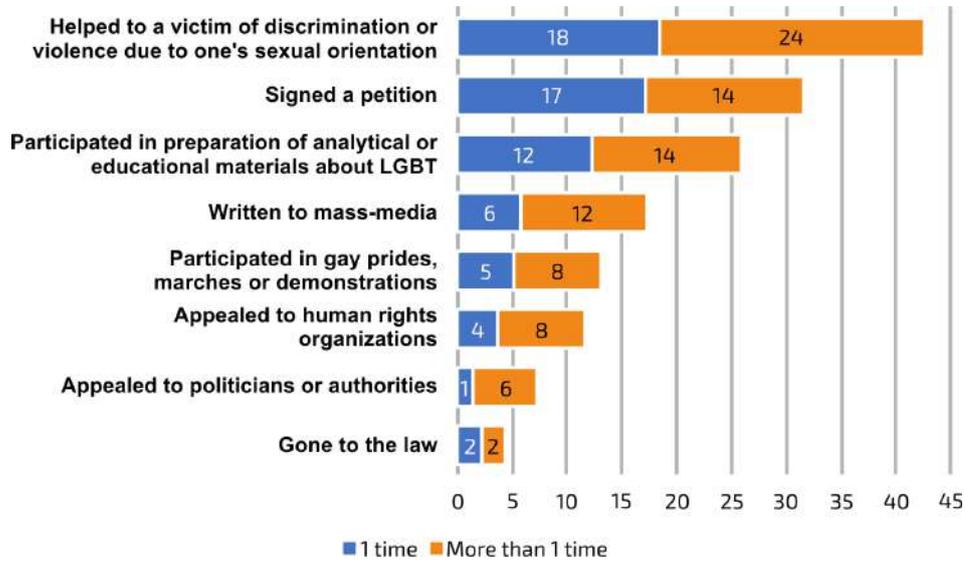
Figure 8.11: Activities to protect LGBT rights in the last 12 months in Georgia, % (*N ranges from 137 to 146 for particular activities*)
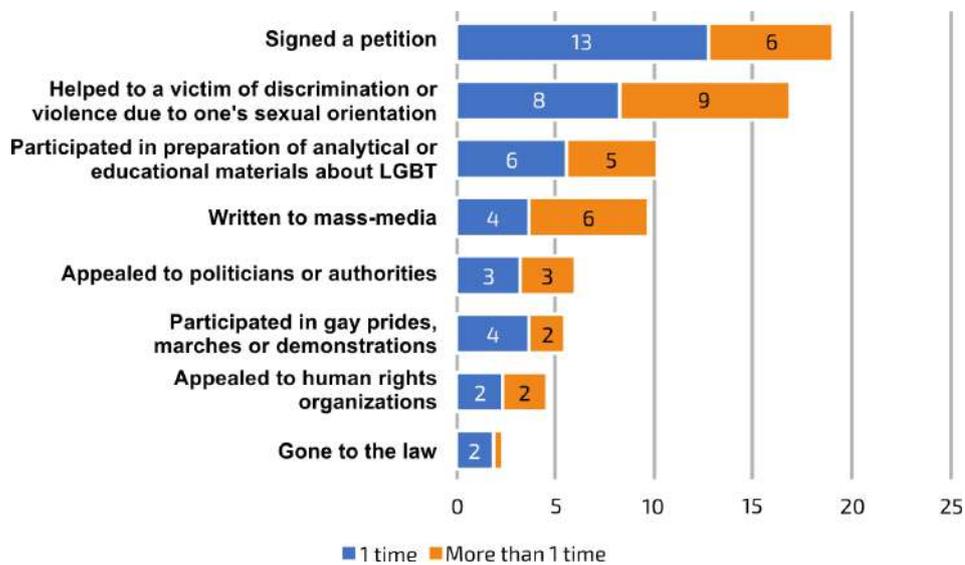
Figure 8.12: Activities to protect LGBT rights in the last 12 months in Kazakhstan, % (*N ranges from 216 to 220 for particular activities*)
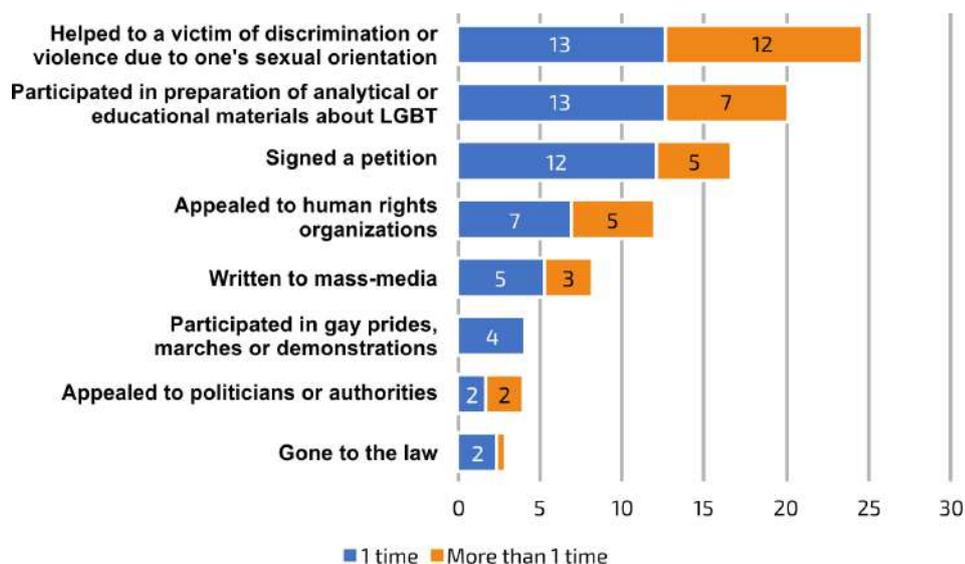
Figure 8.13: Activities to protect LGBT rights in the last 12 months in Kyrgyzstan, % (*N ranges from 172 to 175 for particular activities*)

respondents participated in gay prides and demonstrations, as this was the region that was more liberal towards LGBT people, at least from a legislative standpoint. Besides that, 24% helped victims, and 14% developed analytical or educational materials.
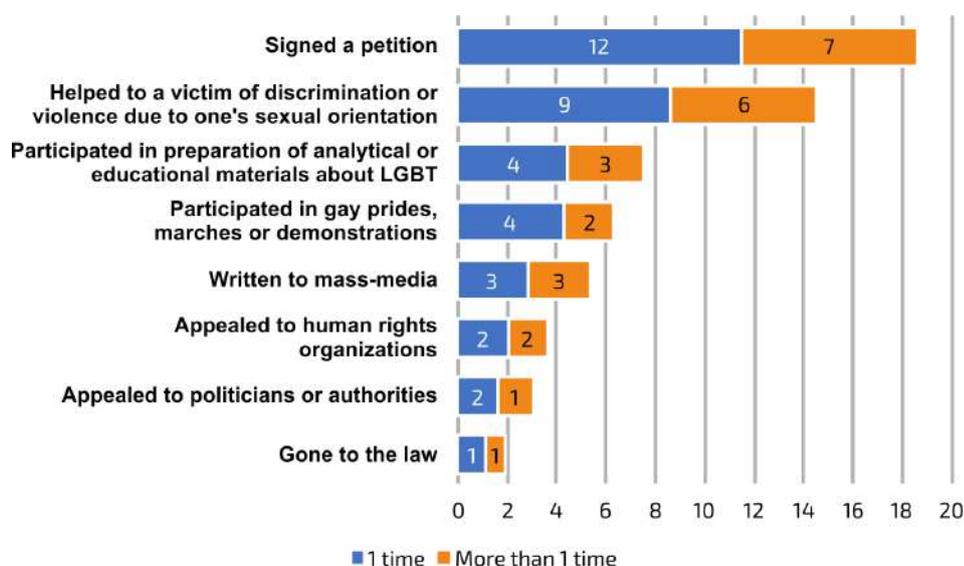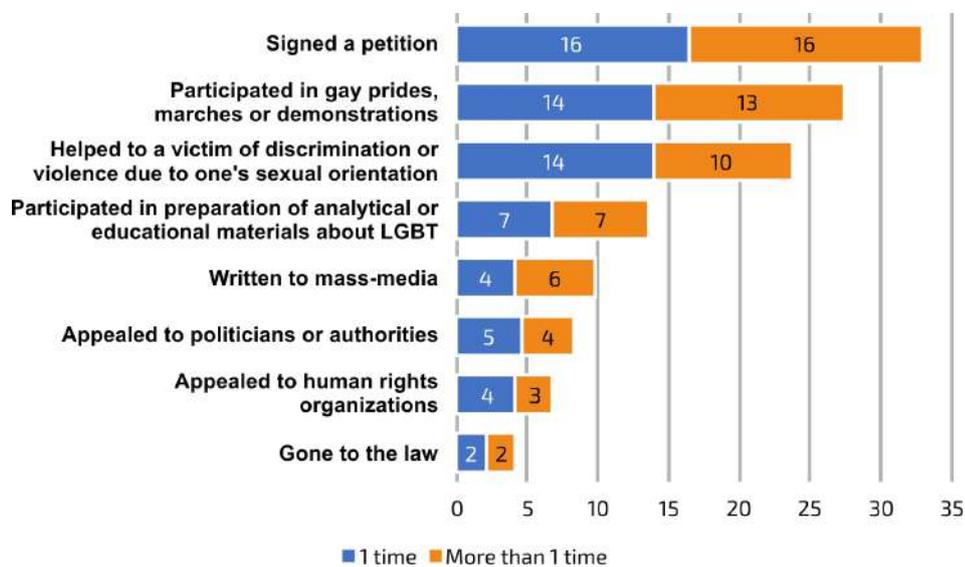

Figure 8.14: Activities to protect LGBT rights in the last 12 months in Lithuania/Estonia, % (*N ranges from 191 to 194 for particular activities*)

Russia

Signing petitions (19%), and helping victims of discrimination and violence (12%) were the most widespread manifestations of activism in the previuos 12 months (Fig. 8.15). Other activities had been performed by 2–4% of respondents.
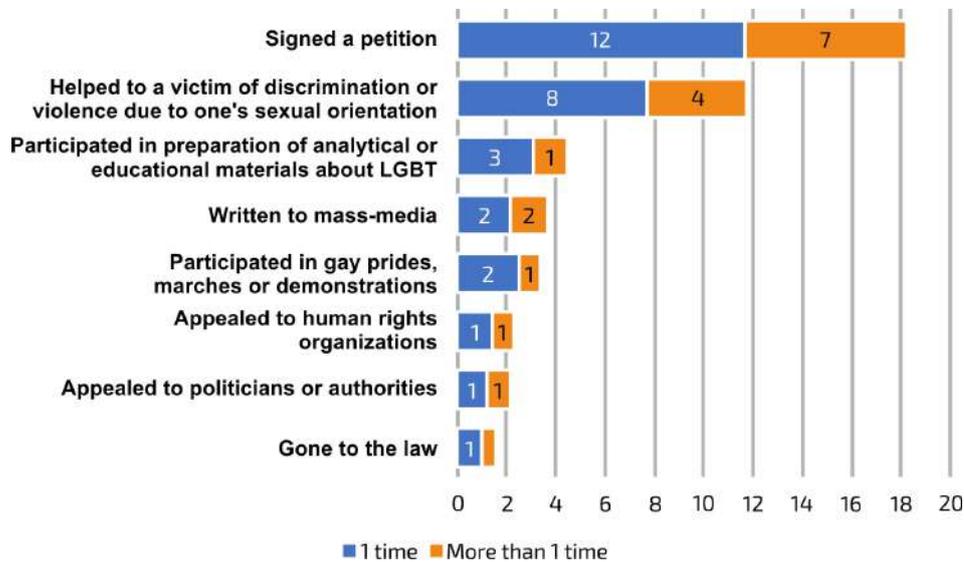
Figure 8.15: Activities to protect LGBT rights in the last 12 months in Russia, % (*N ranges from 5079 to 5134 for particular activities*)

Ukraine

In Ukraine LGBT activism was modestly widespread (Fig. 8.16). Signing petitions (18% in total) and helping victims (14% in total) were the most common activities. At the same time, 12% of respondents participated in gay prides, for gay prides had occurred in Ukraine for several years. Also, 10% of respondents developed analytical or educational materials.

Comparison of LGBT Activism Manifestations by Country

In general, LGBT activism was most widespread among respondents from Georgia and Armenia. It was true almost for all surveyed manifestations of activism.

Respondents from the Baltic countries, Kyrgyzstan, and Azerbaijan were engaged into LGBT activism in a lesser degree. However, respondents from Lithuania/Estonia had the highest rate of participation in gay prides and demonstrations. It could be explained by the European Union membership and the legislative and political situation there. They were followed by Kazakhstan, Ukraine, and Belarus. Respondents from Russia were the least engaged in various manifestations of LGBT activism.
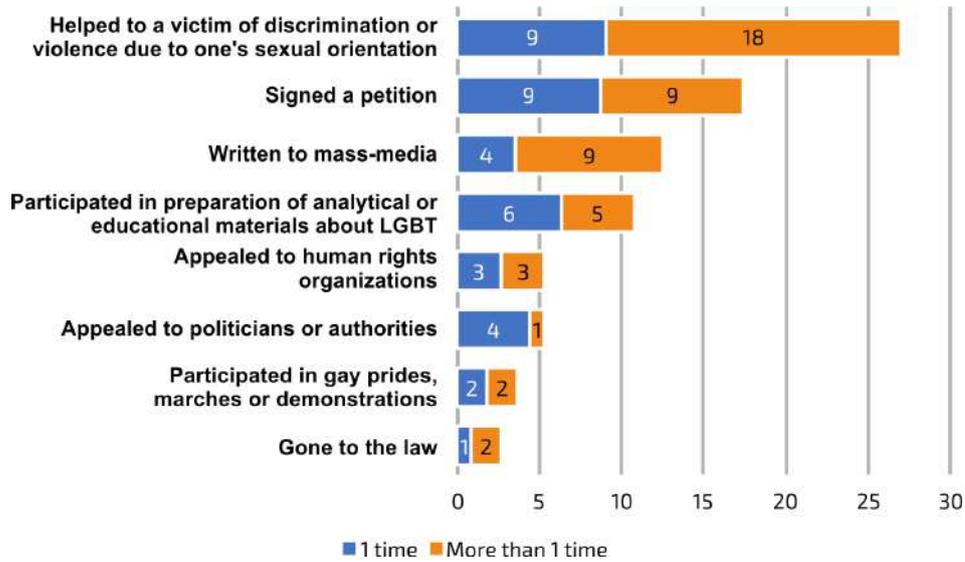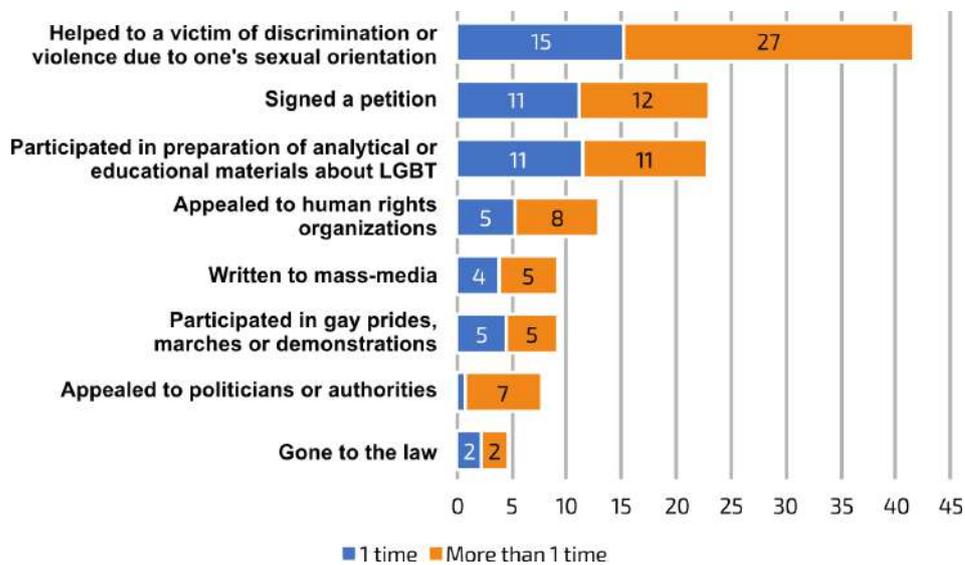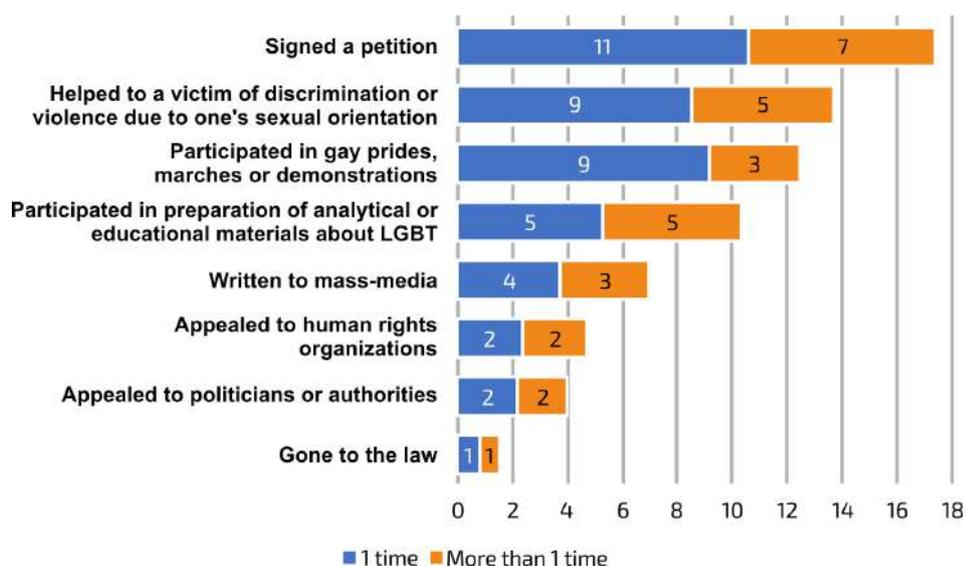
Figure 8.16: Activities to protect LGBT rights in the last 12 months in Ukraine, % (*N ranges from 1308 to 1328 for particular activities*)

Again, the lowest rates of LGBT activism were found in countries with the largest sample sizes. Interestingly enough, appeals to politicians or going to the law as forms of LGBT activism were uncommon in all countries.

LGBT Activism Index

Let us assign one point for a one-time participation in one activityin the last year, and two points for each instance of multiple participation. Then we can construct an additive LGBT activism index. It varies from 0 (a respondent did not participate in any activity in the previous 12 months) to 16 (a respondent participated more than once in each activity). The resulting scale has a satisfactory consistency (Cronbach's α is 0.75 for the entire sample)[8].

Average LGBT activism index score for total sample was low: only 0.8, which was significantly lower than 1. In other words, anything but every MSM representative took part at least once in one activity in the last year.

The average index score significantly varied by country (Fig. 8.17). Nine countries could be roughly divided into three groups: those with relatively low activism scores (Russia, Belarus), those with relatively high scores (Georgia, Armenia, Lithuania/Estonia), and those with intermediate scores (Azerbaijan, Kazakhstan, Kyrgyzstan, Ukraine).

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[8] Strictly speaking, response options were not measured on a metric scale. However, we made this assumption for the sake of parsimony. Moreover, CFA that was performed for the scale without this assumption revealed a single latent factor beyond all items of LGBT activism. CFA was conducted using WLSMV estimator, the scale items were treated as categorical. Goodness of fit statistics were $\chi^2 = 184.32$ (*df* = 20, *p* < 0.001, scaling factor 0.5368), *CFI* = 0.992, *TLI* = 0.989, *RMSEA* = 0.032
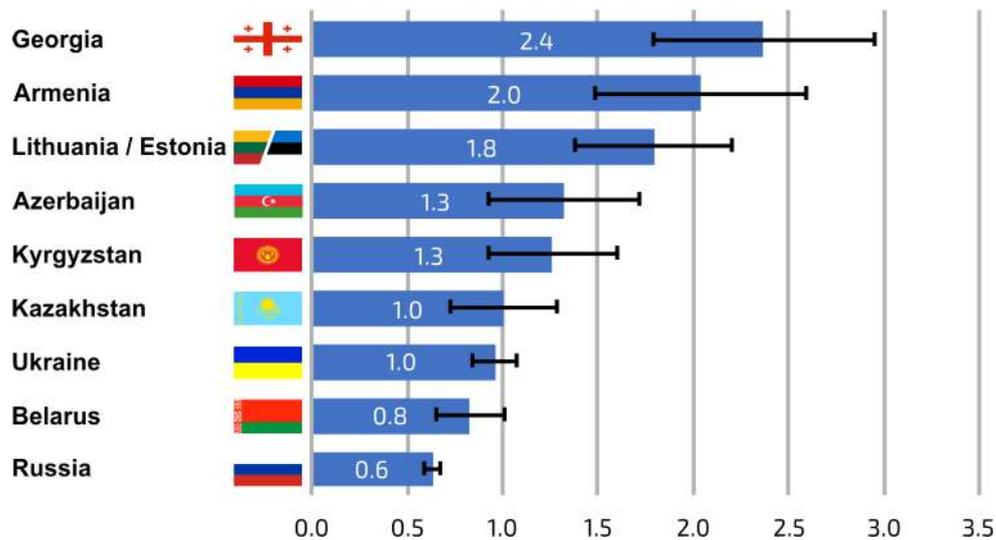
Figure 8.17: Mean LGBT activism index score by country (*Difference is significant at p <
0.001*)

Association between LGBT Activism and Internalized Homonegativity

There were significant differences in average IH by degree of participation for all manifestations of LGBT activism (Fig. 8.18). Those who were engaged in a particular activity, ususally had higher SIHS score. This was true as well if to compare those who were engaged only once with those who were engaged more than once.

The scatter plot (Fig. 8.19) shows a weak association between lower internalized homophobia and greater overall LGBT activism. However, the effect of IH was not very considerable. Besides that, the association seemed to strengthen when SIHS scores were rather high, higher than approximately 5.5. This pattern was generally observed within countries as well.

There could be two possible interpretations.The first one is that homosexuality acceptance affected willingness to stand up for LGBT rights only when it became strong enough.

For the second interpretation, we note that most of respondents did not participate in LGBT activism. Thus there could be two different mechanisms. First, homonegativity determined the probability of whether a person would be an activist. If he became an activist, IH (or, rather, homosexuality acceptance) influenced how much he engaged in the activism, which was yet another mecanism.

Conclusions

A minority of the surveyed MSM, albeit a considerable one, wanted to participate in organizations for gays and bisexuals. The largest relative numbers of potential participants were in Kazakhstan, Azerbaijan, Macedonia, and Armenia. The smallest relative numbers were
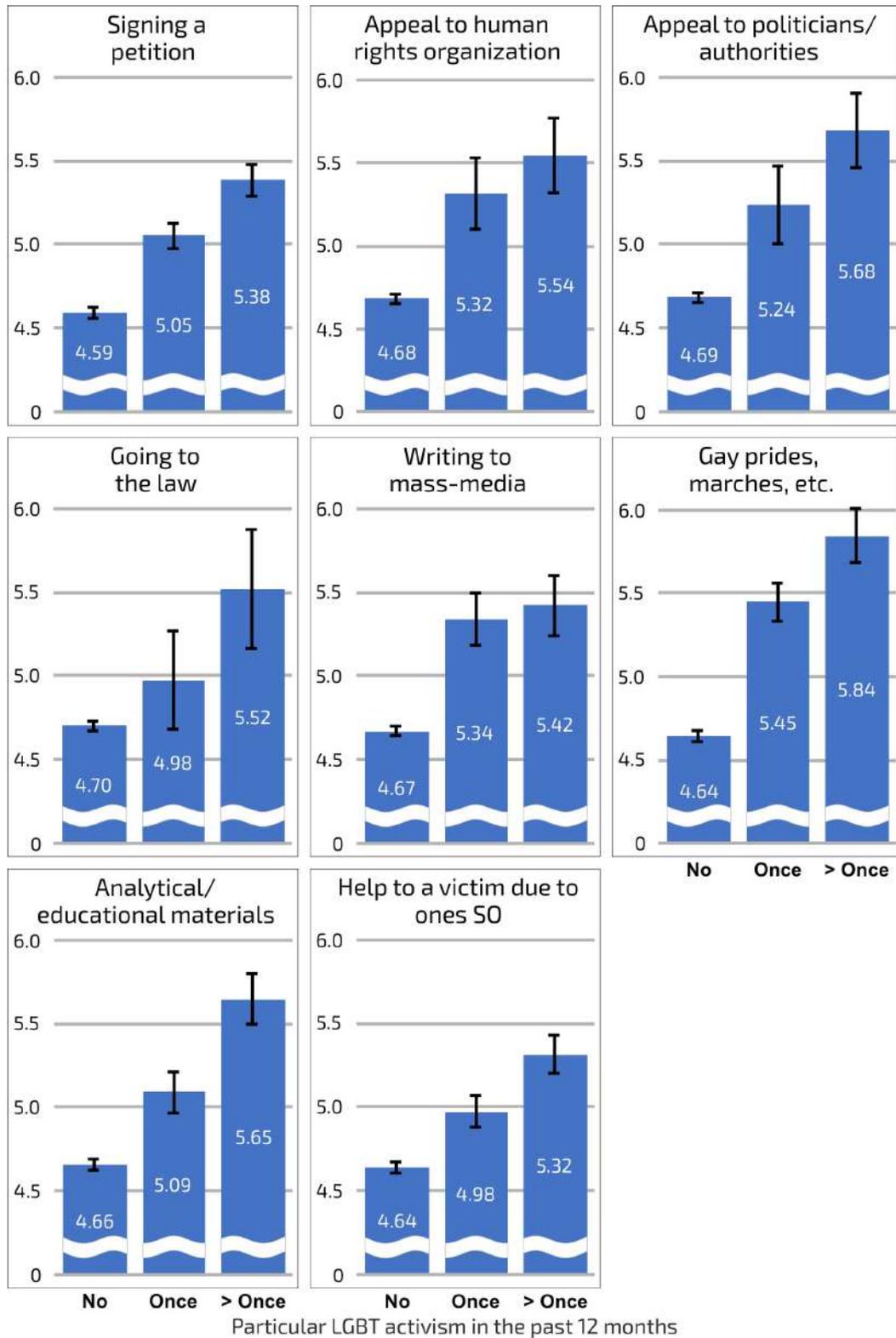
Figure 8.18: Mean SIHS score by participation in particular activities for LGBT rights protection (*All differences are significant at $p < 0.001$*)
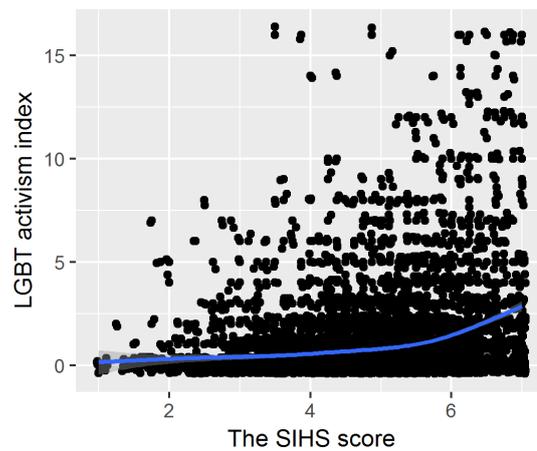
Figure 8.19: Scatter plot with smoothing curve of LGBT activism index on the SIHS score

in Russia, Belarus, and Ukraine. It is important to keep in mind that some respondents had already participated in such organizations.

Most of respondents supported public advocacy of LGBT rights, although far from everyone. Support for LGBT rights varied significantly between countries. Respondents in Macedonia, Georgia, and the Baltic countries expressed the highest support, while respondents from Russia, Moldova, and the countries of Central Asia expressed the lowest support.

We also assessed the prevalence of LGBT activism practices: signing petitions, appeals to human rights organizations, politicians and authorities, the courts, writing to media, prides and demonstrations, development of analytical and educational materials, and helping to LGBT vicitms of violence or discrimination. These practices were the most widespread in Georgia, Armenia, and the Baltic countries (we did not consider Macedonia and Moldova due to small sample sizes). On average, respondents in these countries were involved in at least one of these actions at least once a year. Engagement in LGBT activism was the lowest in Russia, Belarus, Ukraine, and Kazakhstan.

Help to LGBT victims of violence and discrimination (more than 40% in some countries) and signing petitions were the most common activism manifestations. On the other hand appeals to politicians/authorities and going to the law were the lest prevalent in all countries.

Support of public advocating LGBT rights and activism practice were significantly associated with internalized homophobia in almost all countries, except for Azerbaijan (not tested in Macedonia and Moldova). The general trend was unequivocal in all cases. Average internalized homonegativity gradually decreased as we moved from respondents who refused to participate or support the rights to the respondents with the highest participation or support.

Besides that, there was a clear pattern that the association between homosexuality acceptance and LGBT activism was stronger when the former was already quite strong.

9. Study Limitations

The sample was not statistically representative (i. e. quasi-stochastic) by design. One should avoid extrapolating survey results onto general MSM populations of the countries, or extrapolate very cautiously.

Sample sizes in particular countries exept Russia, Ukraine, and Belarus were quite small, which makes it more difficult to reveal associations between the examined variables.

Taking into account the share of the respondents that filled in the questionnaire in Russian, MSM of titular ethnic groups or certain within-country regions may have been underrepresented in Kazakhstan, Kyrgyzstan, Moldova, Ukraine and Estonia.

Small country samples were notably biased towards participants of MSM-service NGOs, with the possible exception of Azerbaijan. More informed and active, and less homonegative MSM may have been overrepresented in those countries.

The majority of respondents in all countries were young, highly educated, employed, and irreligious, they liveed in big cities, and had never been married. Similar biases are common for convenience samples of MSM in online surveys [29, 84, 85]). Therefore, study findings should be cautiously applied to MSM who are older than 40, live in small towns, etc.

It could be that men who are uncomfortable with being homosexual are less likely to meet other men on the Internet, participate in NGOs, and take part in such surveys [29]. Therefore, the study may underestimate internalized homonegativity. This may explain the fact that most of the respondents, even in homophobic countries, demonstrate acceptance of their homosexuality.

At the same time, relations between variables are more resistant to sample biases than unidimentional response distributions. Results of our statistical models must be robust enough. However, due a modest number of respondents with pronounced IH (that is, those with SIHS scores between 1 and 3), the significance and magnitude of its associations with other variables may be underestimated.

Since we were severely limited by the length of the questionnaire, we did not study some potentially important variables in detail (e. g., having steady sexual partners, alcohol consumtion, and religiosity), or did not consider them at (regional residence within countries, substance use, chemsex, compulsive sexual behavior, and anxiety and depression symptoms).

Given that we received self-reporting information from respondents, our results are subject to a cognitive response cognitive bias.

The cross-sectional design prevents us from definitive conclusions causal relationships. However, the established associations and their theoretical explanations may serve as a basis for further experimental and longitudinal studies.

10. General Conclusions and Recommendations

Internalized homonegativity is among the key issues related to the health of MSM. It arises when prevalent homosexuality stigma is internalized and shared by MSM themselves. As a result, they harbor negative or mixed attitudes towards their own sexual attractions and sociating with gays and bisexuals.

The previous studies clearly indicate that high IH hampers counteraction to HIV epidemics among MSM. It makes a barrier to HIV testing and prevention coverage among MSM, and limits contacts with organizations for gays and bisexuals. There is also mixed evidence that IH can be directly or indirectly associated with less condom use and the abuse of alcohol and other substances.

Given the extremely poor knowledge about IH and its consequences for the health of MSM in the CEECA region, we conducted this online survey in 2017 among MSM from Azerbaijan, Armenia, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Lithuania, Macedonia, Moldova, Russia, and Ukraine, which provided us with responses from 8,239 respondents. Unfortunately, only in Russia, Ukraine, and Belarus, did we obtain large samples. We also analyzed the other countries, but to a more limited extent.

It is the first consistent assessment of average IH and its associations with HIV-related factors of MSM health in the countries of the region. In addition, countries' data on risky behavior, HIV testing and its prevalence, prevention services coverage, and involvement in NGOs and LGBT rights protection may be useful for monitoring and advocacy activities.

10.1. Internalized Homonegativity and MSM Health

Average IH among the surveyed MSM was low in all countries. Most of them accepted homosexuality and oneself as an MSM. However, one should not extrapolate this finding onto all MSM from those countries due to the reasons we stated above. There was a significant difference between some countries, although not substantial.

A higher IH was observed among the respondents, who identified own sexual orientation other than gay/homosexual, as well as among those whose sexual orientation was more closeted. Religiosity was significantly associated with a higher IH in about a half of the countries. Associations between IH and age and education were significant in a minority of countries, and did not always correspond to the theoretically predicted.

Our particular result is that the Short Internalized Homonegativity Scale, which is among the most popular techniques for measuring IH today, was validated for most of the languages spoken in the surveyed countries. All language versions of the SIHS from our survey (exept Tajik one) could be recommended for measuring IH in other studies.

We could not establish a significant direct association between IH and condom use during the last anal sex. Although there are possible indirect, both negative and positive associations that should be studied in more detail. A lower IH can be indirectly associated with a lower

risk of HIV-infection due to a more probabile having a steady partner, and, in this case, having fewer casual partners. In addition, lower IH is associated with being more out about one's SO, which is associated with more frequent condom use.

On the other hand, higher IH is observed among those who refrain from regular or any sex men, which lowers the risk of infection. In addition, a lower level of IH may be indirectly associated with a greater risk of HIV-infection. It is associated with a larger number of casual partners when a respondent does not have a steady one, at least in Russia and Georgia. At the same time, the more non-steady partners a respondent has, the more frequently he uses condoms during sex with them. Condoms are still not always used though. In Ukraine and Kyrgyzstan, a weak association between lower IH and the regular alcohol use during sex was observed, which is accompanied by more seldom condom use.

In contrast to condom use, IH is unambiguously associated with worse coverage by HIV prevention. IH reduces the likelihood to know where to get tested for HIV, and to be tested in the previous 12 months. It also decreases the likelihood to receive services for MSM. The latter include free condoms and lubricants, information about HIV, STIs, and sexual health, HIV testing in an organization, communication and joint activities with other MSM, and psychological and legal consultations. Associations between IH and all the abovementioned outcomes is significant, even if to control for other variables such as access for organizations for gays and bisexuals, type of domicile etc.

Besides that, a higher IH decreases the likelihood and willingness to participate in organizations for MSM, as well as support for LGBT rights and participate in LGBT-activism.

In other words, IH is a barrier indeed for being covered with prevention services, and community mobilization. Simultaneously, there may be a reverse link for some services. They may include the joint activities with other MSM, and psychological and legal consultations. Considering that these services are provided rather rarely, and that they are in great demand, an increase in their supply may lower average IH.

10.2. Risky Behavior, HIV Prevention, and LGBT Activism

A steady sexual partner can reduce the risk of HIV infection. Only the minority of respondents had them. In all countries (except Macedonia and Moldova), most of MSM had the last anal sex with a casual partner. Most of respondents had from 0 to 3 casual partners in the last year. If there was a steady partner, an average number of casual partners was much lower. Commercial sex was also relatively common.

In general, condom use rates during the last anal sex remained insufficient. It varied considerably between countries, from 50 to 82% for all partners, and 52 to 87% for non-steady partners. As for condom use during anal sex with non-steady partners in general, only half of respective respondents always used condoms. Although regularity of condom use, on average, increases with an increase in the number of casual partners.

There are still issues with access to condoms. Depending on a country, only 60–70% of respondents always had a condom handy when they needed it, exept for Macedonia, where less than a half of respondents had a condom always whtn necessary.

Average alcohol use during sex can be considered infrequent. Usually, more than a half of respondents in a country either had not consumed or had consumed it very rarely alcohol during sex in the last six months.

Not all, but most of respondents knew where to get tested for HIV. Only 42 to 66%, depending on a country, were tested in the past six months HIV prevalence among those who had been tested for HIV and knew the result ranged from 4% (In Armenia) to 12% (in Azerbaijan). Additionally, the absolute majority of the surveyed would not find it difficult to get tested for other STIs and hepatitis.

There is an inequal and inadequate access to NGOs for MSM in different countries. From 16% in Russia to 70% in Macedonia knew about a relevant organization not far from them.

Coverage by MSM services was also varying and insufficient. The coverage was certainly better for those who knew about relevant organizations around. The most provided services included information about HIV, STIs, and sexual health, HIV testing, and the distribution of free condoms and lubricants. Joint communication, activities, and celebrations for gays and bisexuals were less popular services. Access to a medical doctor, psychological and legal consultations were the rarest services. There seems to be a high unsatisfied demands for the less provided services.

There is a notable, untapped potential for participation in organizations for gays and bisexuals, and for LGBT rights advocation and activism. As for manifestations of LGBT-activism, petitions and help to LGBT victims of violence and discrimination were the the most widespread. The participation and activism potential varied between the countries.

Azerbaijan deserves an additional mention. It had the most unfavorable epidemiological situation in comparison to the other countries. MSM from Azerbaijan had the highest share of casual partners in the last anal sex, and the most widespread commercial sex experience. More than that, issues with access to condoms were relatively widespread; there was the lowest condom use rate, including with casual partners. Azerbaijan was among the countries with the lowest MSM service coverage. Finally, only the minority of respondents knew where to get tested for HIV, and have been tested. Also a minority felt they were able to get tested for other STIs without any difficulty. As a result, perhaps, Azerbaijani respondents had the highest HIV prevalence. The sample for Azerbaijan was small (119 people). However, it was quite compact, as three-quarters of the sample lived in the capital. Thus, at least in Baku, the situation requires prompt HIV prevention measures. In part, it could be a consequence of a massive and farfetched police raid for gays and trans people that happened in Azerbaijan in the end of September, 2017, and dozens of LGBT people were detained[9]. Given a relative willingness to participate in LGBT organizations, it would be worthwhile to develop them, as well as MSM-HIV services.

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[9]   Рзаев К. (2017). Информационный Бюллетень "Стигма и дискриминация по отношению к ЛГБТ сообществу в Азербайджане 2017–2018". Requested from "Gender and Development" Social Union

10.3. Other Factors of Risky Behavior, HIV Testing, and MSM Services Coverage

Besides associations with IH, there are other factors related to condom use, HIV testing, and services coverage.

An accessible organization for gays and other MSM had huge significant positive effect at all those outcomes for obvious reasons. Living outside of the capital had a negative effect. No completed higher education (below Master's degree) was associated with a lower *likelihood* of condom use and HIV test, but, somewhat paradoxically, with a higher likelihood of getting almost all services. There was also a variation of those outcomes between countries, even controlling for other factors mentioned here.

Using a condom during the last anal sex was less likely with a steady partner. Other significant factors related to regular or constant alcohol use during sex, and to lack of condoms, i. e. when a condom was not at hand when necessary, and when respondents did not get condoms from NGOs. These factors decreased a probability of condom use.

HIV test within the previous 12 month was on average more likely when respondents knew where to be tested, and lived alone. However, being bisexual and concealing one's SO decreased the likelihood to be tested.

Respondents who were less out had lower probability of receiving most of MSM services. The same was true for older respondents. Given the associations with education level, it is possible that older and more affluent MSM were less inclined to turn to NGOs for services.

10.4. Recommendations

Internalized homonegativity obviously decreases prevention programs effectiveness. There is a need to develop and implement a number of interventions which could reduce IH.

It is necessary to pursue legal prohibition of discrimination by SO in all domains, where it is not prohibited yet, and to ensure its implementation in practice. In the longer term, it is necessary to work under legalization of same-sex unions. This should be supported by campaigns to reduce sexual prejudice in society.

HIV service and LGBT human rights movement should consolidate their efforts and resources for joint advocacy actions against homonegativity and heterosexism. Response to HIV epidemics in one of the key groups lost efficiency in homonegative societies. LGBT movement can obtain a strong argument that society is literally healthier without heterosexism. Both parties have unique resources and competencies, and need special capacity building for subsequent campaigns.

For IH reduction at individual level, widespread psychological consulting for acceptance of own sexuality is necessary. There is a need for short-term psychotherapeutic intervention programs that might be easily implemented in different organizations.

NGOs should expand range of their services by those ones that could potentially diminish IH. Besides psychological consulting, they can include joint events and communication with other MSM, and legal consultations. All the more, there is high demand and low supply for such service. Clearly their effect needs additional researches.

Coverage by prevention services should be improved in general, including the most standard services. Insufficient access remains a problem irrespectively of IH.

A large enough share of MSM would like to participate in organizations for gays and bisexuals, and to be involved in LGBT rights protection. This potential should be used in organizational development.

Special attention should be given to MSM population in Azerbaijan. Urgent measures are needed to combat the outbreak of the HIV epidemic and low prevention.

There are also recommendations regarding further studies.

There is extra analytical potential of these data. For instance, they can be used to analyze of indirect associations between IH and risky practices, factors affecting the provision and demand for services, factors of and LGBT activism and rights support. In particular, this applies to Belarus, Russia, and Ukraine whicha are countries with relatively large samples.

Some phenomena deserve additional studies as possible factors, consequences, and mediators of IH, e. g., numbers of both casual and steady partners, substance use, chemsex, and compulsive sexual behavior. Besides that, surveys with longitudinal design and/or link to HIV and STI testing would allow more informed conclusions about causal relations between IH and health outcomes for MSM.

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Appendix A. Reliability and the Construct Validity of the Short Internalized Homonegativity Scale

Reliability According to Cronbach's α

Assessing the reliability of the SIHS using Cronbach's α is less demading of the sample size, therefore we were able assess it for all 11 countries. Unfortunately, responses of many respondents fell into missing values (28% of the entire sample).

The SIHS as an additive scale had sufficient (> 0.7) to good (> 0.8) reliability in every country (Table A.1). The average Cronbach's α was 0.75. In other words, the SIHS has sufficient reliability to be used in all of the surveyed countries if to regard possible differences in latent structure and measurement equivalence to be negligible.

Table A.1: Cronbach's α for the SIHS by country

	N	Cronbach's α
Russia	3830	0.71
Belarus	348	0.71
Azerbaijan	74	0.71
Ukraine	1001	0.71
Kazakhstan	165	0.72
Armenia	76	0.74
Moldova	39	0.77
Kyrgyzstan	130	0.79
Macedonia	39	0.79
Estonia/Lithuania	168	0.81
Georgia	96	0.83

Multi-group CFA for Different Language Versions of the SIHS in Separate Countries

However, when we apply a certain scale in different societies and cultures, worded in different languages, it may work differently. In particular, it may reflect a latent concept (e. g., homonegativity) differently, and measurement error could vary. We employ confirmatory factor analysis to test a possible non-invariant performance of the SIHS in different languages and countries.

We begin with invariance testing between separate groups by both language and country, rather than by country only. We singled out language-country groups with at least 95 respondents (Table A.2, Column 3).

For each group, a CFA model was constructed according to Fig. 4.1. Three first-order factors made up a second-order factor, which reflected latent IH (homosexuality acceptance, to be exact).

In every countriy except Armenia, the hypothetical three-factor structure of the SIHS was confirmed by satisfactory goodness-of-fit statistics (Table A.2, Model 3–11). Although the model for Russia had acceptable fit already, we added a covariance between items "Femininity" and "In public with gay", as it notably improved the model quality (Model 9).

The three-factor structure of the SIHS was not confirmed for Armenia (Tabl A.2, Model 1). Goodness-of-fit indices were acceptable, but two first-order factors had a correlation above 1. At the same time, the single-factor model, in which IH directly affected each of the 8 statements (Table A.2, Model 2), fitted the data well. We excluded Armenian-language responses from further CFA, because they had a different structure. This model showed that the SIHS is applicable in Armenia, but its comparisons with other countries remain more problematic.

Table A.2: Goodness-of-fit statistics for one-group CFA models of the SIHS for language-country groups

#	Language (country)	N	MLR χ^2 (df)	χ^2 p-value	RMSEA	CFI	TLI	SRMR
1	Armenian (Armenia)[1]	96	21.959 (17)	0.186	0.055	0.946	0.911	0.064
2	Armenian (Armenia) — single-factor model[2]	96	21.752 (20)	0.354	0.03	0.981	0.973	0.064
3	Georgian (Georgia)[3]	121	16.475 (18)	0.559	<0.001	1.000	1.015	0.045
4	Lithuanian (Lithuania)	95	16.635 (17)	0.479	<0.001	1.000	1.004	0.041
5	Russian (Belarus)	489	39.062 (17)	0.002	0.052	0.951	0.920	0.039
6	Russian (Kazakhstan)	201	25.240 (17)	0.090	0.049	0.961	0.935	0.044
7	Russian (Kyrgyzstan)	142	25.766 (17)	0.079	0.060	0.957	0.929	0.047
8	Russian (Russia)	5175	220.185 (17)	<0.001	0.048	0.959	0.933	0.027
9	Russian (Russia) — additional model[4]	5175	131.077 (16)	<0.001	0.037	0.977	0.959	0.020
10	Russian (Ukraine)	865	25.910 (17)	0.076	0.025	0.989	0.981	0.023
11	Ukrainian (Ukraine)	475	39.078 (17)	0.002	0.052	0.957	0.928	0.036

[1] *The correlation between latent variables exceeded 1*
[2] *A single first-order factor model without three SIHS sub-scales*
[3] *The variance of the factor "Public identification" was fixed at zero*
[4] *Covariance was added between "Femininity" and "In public with gay" items*

So far, we established configurational invariance for all language-country groups except the Armenian. Metric and scalar invariance testing results (which are stricter levels of measurement invariance) are in Table A.3. We first conducted MGCFA without the large Russian sample to make sure that it did not obscure differences in the other groups. Then

we repeated invariance testing with parameters restrictions (e.g., for factor loadings or intercepts) that had been established in the 7 language-country groups, and with included Russian sample.

For all 8 groups (i. e. 4 languages in 7 countries), the scale was metrically invariant (Table A.3, Model 11). To be exact, Georgian language group had partial metric invariance with the other groups, while the latter had complete metric invariance between each other. This means that effects between the SIHS and other variables (e.g., in regression models) were quite comparable across different language versions in surveyed countries.

Scalar invariance is necessary to compare the SIHS scores across the groups. This degree of equivalence was harder to establish. The SIHS in Russian language had full scalar invariance in Russia, Ukraine, Belarus, and Kazakhstan. Their mean scores could be compared without reservations. A Russian language group in Kyrgyzstan, and Ukrainian language group (in Ukraine) showed partial scalar invariance with the previous groups (for 7 out of 8 items). Between each other, these two groups had two scalarly non-equivalent items, but both their SIHS score and sub-scales' scores were comparable.

Lithuanian and Georgian versions of the scale had even less scalar invariance. Only 2 out of 8 items were invariant between these two version. In comparison with other groups, the number of invariant items varied from 4 to 5. In practice, comparing the SIHS mean scores could be done with reservations only if to include Lithuanian and Georgian responses.

Multi-group CFA for Countries

Testing the SIHS invariance across separate countries followed the same algorithm as in the case of the language-country groups. We 10 countries with sample sizes of at least 100 respondents. I.e., we took a merged Lithuania/Estonia sample, but omitted Macedonia and Moldova. Goodness-of-fit statistics of the SIHS one-group models are in Table A.4.

The three-factor model did not fit Armenia. An alternative two-factor model fitted to the data well. A second-order IH factor is technically impossible in in such cases. The sample form Armenia was excluded from the following analysis. In addition, a covariance between "Femininity" and "In public with gay" items was added for Russia and Ukraine, with a weak negative correlation. It was also necessary to make similar amendments to a model for Azerbaijan to get acceptable goodness-of-fit statistics.

The final multi-group model had partial scalar invariance (Table A.5, Model 14). Factor loadings and intercepts of the final model are provided in Table A.6. Full scalar invariance of the SIHS was observed across Ukraine, Belarus, and Azerbaijan, while Russia had partial scalar invariance with these groups for 7 out of 8 items. With other countries, partial scalar invariance varied from 3 out of 8 items (between Georgia and Lithuania/Estonia) to 6 out of 8 items.

Thus, the SIHS mean scores could be comparable across the countries with certain reservations (see Section 4.7).

Table A.3: Goodness-of-fit statistics of the SIHS MGCFA models with different invariance structure, 8 language-country groups

#	Invariance model[1]	CFI	ΔCFI	TLI	RMSEA	MLR χ^2 (df, sf)	Adjusted MLR $\Delta\chi^2$ (p-value)
7 language versions in individual countries (without the Russian version in Russia)						
1	Configurational	0.972	—	0.954	0.041	188.197 (120, 1.0992)	—
2	Metric	0.965	0.007[5]	0.954	0.041	235.877 (150, 1.116)	47.644 (0.022)
3	Partial metric[2]	0.969	0.003[5]	0.959	0.039	224.647 (149, 1.1147)	36.941 (0.148)
4	Second-order metric	0.969	0.003[5]	0.963	0.037	235.859 (161, 1.1074)	48.015 (0.210)
5	Scalar	0.928	0.041[6]	0.927	0.052	365.602 (191, 1.0936)	135.975 (<0.001)
6	Partial scalar[3]	0.961	0.008[6]	0.958	0.039	282.245 (186, 1.0914)	47.404 (0.004)
7	Second-order scalar	0.932	0.037[6]	0.932	0.050	364.971 (198, 1.0839)	136.915128 (<0.001)
8	Partial second-order scalar[4]	0.959	0.01[6]	0.959	0.039	292.751 (194, 1.0867)	57.768 (0.005)
8 language versions in individual countries (including the Russian version in Russia)						
9	Configurational	0.963	—	0.939	0.046	409.998 (137, 1.1003)	—
10	Partial metric[2]	0.961	0.002[7]	0.949	0.042	455.868 (171, 1.1181)	49.239 (0.044)
11	Second-order metric	0.961	0.002[7]	0.953	0.040	470.633 (185, 1.1117)	62.996 (0.072)
12	Partial scalar[3]	0.954	0.007[8]	0.952	0.041	551.981 (215, 1.0914)	82.000 (<0.001)
13	Partial second-order scalar[4]	0.953	0.008[8]	0.953	0.040	569.472 (225, 1.0868)	98.493 (<0.001)

[1] Parameter constraints that were released in models with a lower invariance were retained in subsequent models. For example, Model #4 retained the partial invariance parameters of Model #3

[2] Releasing equality constraint for "Social with gays" factor loading (Georgian language)

[3] Releasing equality constraints for the following intercepts: "Social with gays" (Ukrainian and Georgian languages); "Gay bars" (Georgian language); "Being gay" and "Discussion" (Lithuanian language)

[4] Releasing equality constraints for "Social comfort with gays" sub-scale intercept (Georgian language), "In public with gay", and "Gay bars" intercepts (Lithuanian language), and "Morality" intercept (Russian language in Kyrgyzstan)

[5] Comparison with CFI for Model # 1

[6] Comparison with CFI for Model # 4

[7] Comparison with CFI for Model # 9

[8] Comparison with CFI for Model # 11

Table A.4: Goodness-of-fit statistics for one-group CFA models of the SIHS for countries

#	Language (country)	N	MLR χ^2 (df)	χ^2 p-value	RMSEA	CFI	TLI	SRMR
1	Azerbaijan	117	34.845 (17)	0.007	0.095	0.875	0.793	0.070
2	Azerbaijan — additional model[1]	117	21.904 (16)	0.146	0.056	0.958	0.927	0.061
3	Armenia	137	33.572 (17)	0.010	0.084	0.878	0.800	0.067
4	Armenia — single-factor model[2]	137	36.128 (20)	0.015	0.077	0.882	0.834	0.069
5	Armenia — two-factor model[3]	137	25.314 (19)	0.151	0.049	0.954	0.932	0.056
6	Belarus	492	39.574 (17)	0.002	0.052	0.950	0.918	0.039
7	Georgia[4]	148	20.560 (18)	0.302	0.031	0.987	0.979	0.047
8	Kazakhstan	222	26.571 (17)	0.065	0.050	0.955	0.927	0.046
9	Kyrgyzstan	181	22.613 (17)	0.162	0.043	0.978	0.963	0.044
10	Lithuania/Estonia	197	22.503 (17)	0.166	0.041	0.982	0.970	0.034
11	Russia[5]	5212	130.678 (16)	<0.001	0.037	0.977	0.960	0.019
12	Ukraine[5]	1350	31.954 (16)	0.01	0.027	0.987	0.978	0.020

[1] *Variance of "Personal comfort with gay identity" factor is fixed at zero. Two residual covariances are added, namely, between "Discussion" and "Femininity" items (moderate negative correlation) and between "Being gay" and "In public with gay" items (weak positive correlation)*
[2] *A single first-order factor model without separating three SIHS sub-scales*
[3] *Two first-order factors model, both factors are different from hypothetical ones*
[4] *Variance of "Public identification as gay" factor is fixed at zero*
[5] *Residual covariance between "Femininity" and "In public with gay" items was added (very weak negative correlation)*

Table A.5: Goodness-of-fit statistics of the SIHS MGCFA models with different invariance structure, 8 countries

#	Invariance model[1]	CFI	ΔCFI	TLI	RMSEA	MLR χ^2 (df, sf)	Adjusted MLR $\Delta\chi^2$ (p-value)
6 countries (without Russia and Ukraine)							
1	Configurational	0.967	—	0.946	0.047	153.658 (102, 1.0895)	—
2	Metric	0.941	0.026[7]	0.922	0.057	153.658 (127, 1.1013)	65.049 ($<$0.001)
3	Partial metric[2]	0.957	0.010[7]	0.941	0.049	192.539 (124, 1.1057)	38.516 (0.016)
4	Second-order metric	0.953	0.014[7]	0.941	0.049	208.023 (134, 1.0986)	54.207 (0.008)
5	Partial second-order metric[3]	0.958	0.009[7]	0.948	0.047	198.504 (133, 1.0956)	44.879 (0.051)
6	Scalar	0.921	0.037[8]	0.916	0.059	282.409 (158, 1.0777)	88.421 ($<$0.001)
7	Partial scalar[4]	0.951	0.007[8]	0.947	0.047	233.618 (156, 1.08)	35.186 (0.050)
8	Second-order scalar	0.906	0.052[8]	0.905	0.063	314.382 (166, 1.0751)	121.424 ($<$0.001)
9	Partial second-order scalar[5]	0.950	0.008[8]	0.948	0.046	241.939 (163, 1.0764)	43.320 (0.055)
8 countries (including Russia and Ukraine)							
10	Configurational	0.976	—	0.961	0.037	318.210 (134, 1.0974)	—
11	Partial metric[2]	0.973	0.003[9]	0.964	0.036	377.647 (166, 1.1138)	60.398 (0.002)
12	Partial second-order metric[3]	0973	0.003[9]	0.966	0.035	391.82 (179, 1.1058)	74.346 (0.004)
13	Partial scalar[4]	0.963	0.010[10]	0.961	0.037	502.426 (212, 1.0833)	115.478 ($<$0.001)
14	Partial second-order scalar[6]	0.966	0.007[10]	0.966	0.035	487.881 (222, 1.0819)	96.257 ($<$0.001)

[1] *Parameter constraints that were released in models with a lower invariance were retained in subsequent models. For example, Model #4 retained the partial invariance parameters of Model #3*

[2] *Releasing equality constraints for "Social with gays" factor loading (Georgia and Kyrgyzstan), and "Morality" factor loading (Kyrgyzstan)*

[3] *Releasing equality constraint for "Morality" factor loading (Azerbaijan)*

[4] *Releasing equality constraints for "Gay bars" intercept (Georgia) and "Discussion" intercept (Lithuania/Estonia)*

[5] *Releasing equality constraints for "Social comfort with gay men" sub-scale intercept (Georgia), "In public with gay" intercept (Lithuania/Estonia), and "Femininity" intercept (Azerbaijan)*

[6] *Releasing equality constraints for "Social comfort with gay men" sub-scale intercept (Georgia), "In public with gay" intercept (Lithuania/Estonia), and "Femininity" intercept (Azerbaijan,* **and Russia***)*

[7] *Comparison with CFI for Model # 1*

[8] *Comparison with CFI for Model # 5*

[9] *Comparison with CFI for Model # 10*

[10] *Comparison with CFI for Model # 12*

Table A.6: Individual parameters of the final multi-group CFA model of the SIHS in 9 countries (Invariant parameters are shown. Non-invariant ones are in the notes to the table)

	Unstandardized factor loadings	Intercept
First-order factors		
Personal comfort with gay identity		
Being gay	1.00	4.90
Morality	0.62[1]	5.96
Wouldn't change SO	0.78	4.98
Public identification as gay		
In public with gay	1.00	3.80[2]
Discussion	1.02	4.56[3]
Social comfort with gay men		
Gay bars	1.00	4.85[4]
Femininity	−0.49	4.96[5]
Social with gays	−0.91[6]	2.72
Second-order factor		
Internalized homonegativity		
Personal comfort with gay identity	1.00	0.00
Open self-identification as gay	0.83	0.00
Comfort interacting with gays	0.64	0.00[7]

All parameters are significant at p < 0.001 except fixed ones (i. e. unstandardized loadings fixed to 1, and intercepts fixed to 0)
[1] *For Azerbaijan — 1.08; for Kyrgyzstan — 1.00*
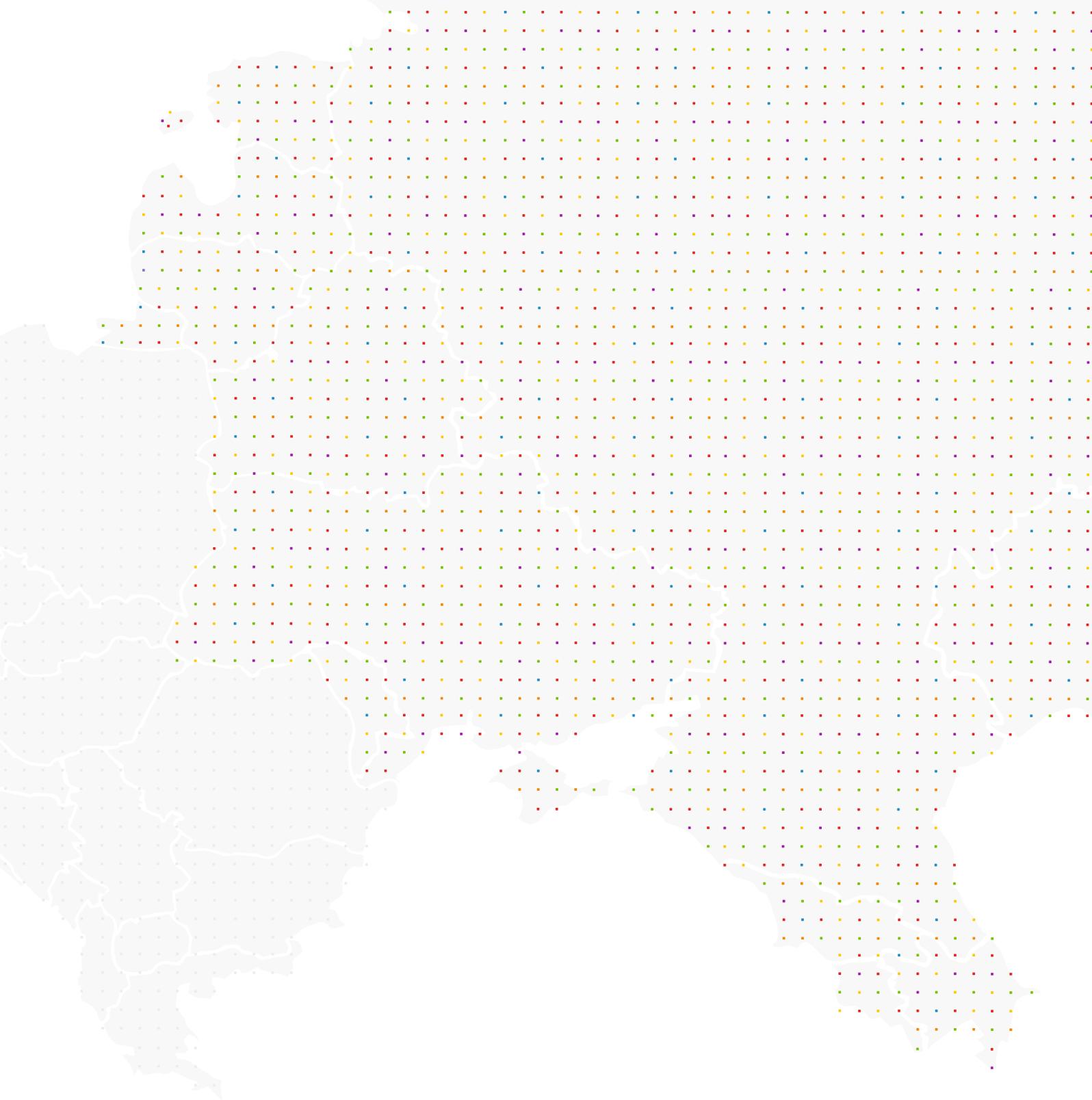[2] *For Lithuania/Estonia — 4.37*
[3] *For Lithuania/Estonia — 4.46*
[4] *For Georgia — 2.47*
[5] *For Azerbaijan — 4.26; for Russia — 5.25*
[6] *For Georgia — −0.32; for Kyrgyzstan — −0.50*
[7] *For Georgia — 2.51*

Eurasian Coalition on Male Health

Eurasian Coalition on Male Health (ECOM)

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