Behaviour monitoring and HIV-prevalence among men who have sex with men as a component of second generation surveillance

ICF "International HIV/AIDS Alliance in Ukraine"

Analytical report

«Behaviour monitoring and HIV-prevalence among men who have sex with men as a component of second generation surveillance»

(based on results of the biobehavioral survey of 2011)

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The publication has been prepared according to the results of the bio-behavioural survey among men who have sex with men, which was conducted in 2011. The report contains information on social and demographic characteristics of MSM, key indicators of MSM safe sexual behavior. HIV testing results in the course of the survey are given as well as the analysis of factors of infecting with HIV has been conducted. The publication is useful for managers of social sphere, social workers, sociologists and epidemiologists.

Contents

GLOSSARY

AIDS — acquired immune deficiency syndrome

CI — confidence interval

CSW — commercial sex workers; the concept includes FSW and MSW

FSW — female sex workers

HIV— humanimmunodeficiencyvirus

Homophily — used in RDS as the measure of respondent's belonging to the group (changes from +1 to -1): homophily value of +1 means that all respondent's connections are formed only with group members, value of 0 means that respondent's connections are formed whithout taking into consideration belonging of others to the group, a value of -1 means that the connections are formed only with those not belonging to the group[1].

ICF — international charitable fund

IDU — injecting drug users

MoH — Ministry of Health of Ukraine

MSM — men who have sex with men

MSW — male sex workers

NGO — non-governmental organization; the concept includes civil society organizations and charitable funds

OR – odds ratio

STI — sexually transmitted infections

VCT — voluntary counseling and testing

[1] HECKATHORN D. D. Respondent-Driven Sampling II: Deriving Valid Population Estimates from Chain-Referral Samples of Hidden Populations [Text] / D. D. HECKATHORN // Social Problems. — 2002. — Vol. 49, № 1. — P. 11–34.

INTRODUCTION

MSM belonging to vulnerable groups has been historically connected to the following factors: practices of unprotected anal sex including traumatic one which in its turn is caused by absence of such a mechanism of social control as marriage.Marginal status of homosexuality prevents both gettingof adequate information on homosexual relationships when educating a person and effective cooperation patient-doctor[2], client–social services[3], promotes anonymous rapid sex, supports the necessity of heterosexual marriage as a way of ―not to stand out" etc. The above-mentioned makes the MSM group one of the most vulnerable to HIV-infection, where the epidemic continues to get strength and bisexual practices common in the group expose female partners to risk and predetermine HIV infection prevalence among general population.

The only source of data on the HIV prevalence among MSM inUkraine hasbeen the results of i sentinell surveillance conducted within bio-behavioural surveys since 2007. According to the data of the bio-behavioural surveys, HIV prevalence among MSM remains to be the lowest in Ukraine as compared to the group of injecting drug users and female sex workers:6.4% as compared to 21.5% among IDUand 9.4% among FSW. However, according to experts[4], HIV epidemic among MSM in Ukraine still remains to be hidden. At the same time, in some regions of Ukraine, HIV prevalence among MSM approaches HIV prevalence among IDU (22%). According to the forecasting results, HIV epidemic in Ukraine in the coming years will develop exactly with the help of MSM.

Bio-behavioural survey ―Behaviour Monitoring and HIVprevalence among men who have sex with men as a component of second generation surveillance of 2011 first covered all regions of Ukraine. Accordingly, its results will serve as a kind of starting point for the assessment of situation with prevalence of dangerous practices and HIV among MSM both on national and regional levels that were first included in the geograpgy of the survey. Availability of survey results of 2007 and 2009 in a number of regions gives the opportunity to indicate certain trends. Even though, the use of data of preveious years for comparison has certain limitations, the first attempt to analyze changes of key indicators in time has been made in this publication. The uthors express sincere gratitude to the associate professor of the School of Public Health of Kyiv Mohyla Academy T.I.Andreyeva for the reviewing of this Report and to LGBT and MSM-service organizationsfor the efforts they made to collect source information in the field.

2Human Rights in Health Protection — 2011. — Kharkiv: Human's Rights, 2012. — 208 p.

3Estimation of the needs of MSM in key services on HIV/AIDS prevention, treatment, care and support: Analytical report by the survey results / UNDP. — The survey was carried out by GfK Ukraine. — [K.,] 2011.— 96 p.

4O. ALEKHIN and others. Men who have sex with men in Eastern Europe: possible consequences of the hidden epidemics: Report on the results of regional analysis / O. ALEKHIN, K. BADALIAN, M. DEBELIUK, A. DOVBAKH, K. RZHAYEV, M. KASIANCHUK, Y. PISEMSKIY, N. TSERETELI, Y. SARANKOV, O. YEREMIN (ICF ―International HIV/AIDS Alliance in Ukraine", Regional Technical Support Hub for Eastern Europe and Central Asia, UNAIDS). — K.: ICF ―International HIV/AIDS Alliance in Ukraine", 2010. — 117 p. — Access mode: http://www.aidsalliance.org.ua/cgi-bin/index.cgi?url=/ru/news/index.htm

METHODOLOGY

The survey was conducted by the Centre for Social Expertise of the Institute of Sociology NAS of Ukraine in cooperation with the Ukrainian AIDS Prevention Center and regional AIDS centres on the request of the ICF "International HIV/AIDS Alliance in Ukraine". The data were collected from 18.06.2011 to 26.10.2011.

Survey aims and methods

Key objectives of the survey included:

- Study of the level of HIV-infection prevalence among MSM;
- Study of the risk factors of HIV-infection among MSM;
- Study of the knowledge, attitude and behaviour trends on the basis of comparison of this survey data to the data of the surveys conducted in 2007 and 2009;
- Study of the connection between the behaviour of MSM and HIV testing results;
- Data collection to study connections or intercrossing between the following groups: MSM and IDU, MSM and women, MSM and CSW;

MSMgroupisclosedandhard-to-reach, thereforespecialmethodologiesareusedinordertostudy it. One of them is RDS (respondent-driven sampling) – sampling which is realized and referred by the respondents themselves. Surveys with the use of RDS among MSM and other groups vulnerable to HIV-infection have been conducted in Ukraine since 2007.

Design:cross-sectional survey (single-step cross-section).

Survey hypotheses

- Level of knowledge about HIV is related to age, educational level, experience of previous VCT and respondent's belonging to the clients of HIV-service NGO;
- Time, during which the respondent has been practicing homosexual relations (respondent's age at the moment of interviewing minus age of the first sexual contact with another man), is related to HIVstatus: the more the period is, the highest is the probability for MSM to have a positive HIV-status;
- Risk factors of HIV infection include the long period of staying in the MSM group, big number of male sexual partners,receptive role during anal sex, frequent and regular use of alcohol and drugs, lower level of knowledge about HIV and STI, presence of STI, irregular condom use;
- MSM less frequently use condoms with permanent sexual partners than with casual ones;
- MSMlessfrequentlyusecondomswhenhavingsexualcontactswithwomenthanwithmen;
- Inthoseregions, where HIV-service organizations work with MSM, there is more stability of condom use during sexual contacts with different partners as compared to other regions;
- In those regions of Ukraine, where HIV prevention programmes are realized, the level of knowledge about places where a person can be HIV-tested, is significantly higher;
- HIV prevalence among MSM reflects epidemic rates for general population of Ukaine: It is the lowest in cities of western Ukraine and the highest in cities of eastern and southern Ukraine.

Geography of the survey

The survey was performed in 27 cities of Ukraine: Vinnytsia, Dnipropetrovsk, Donetsk, Zhytomyr, Zaporizhzhia, Ivano-Frankivsk, Kyiv, Kirovograd, KryvyiRig, Lugansk, Lutsk, Lviv, Mykolaiv, Odesa, Poltava, Rivne, Simferopol, Sevastopol, Sumy, Ternopil, Uzhgorod, Kharkiv, Kherson, Khmelnytskyi, Cherkasy, Chernivtsi, Chernigiv.

It was for the first time when the survey among MSM was conducted in all regions of Ukraine.

Sample

5950 MSM were interviewed in the course of the survey. The Table 1 below shows local sample sizes.

Table1.Number of respondents in each city

City	Sample	City	Sample
Vinnytsia	150	Poltava	200
Dnipropetrovsk	350	Rivne	150
Donetsk	400	Sevastopol	150
Zhytomyr	150	Simferopol	200
Zaporizhzhia	200	Sumy	200
Ivano-Frankivsk	150	Ternopil	150
Kyiv	400	Uzhgorod	150
Kirovograd	150	Kharkiv	300
Kryvyi Rig	150	Kherson	250
Lugansk	200	Khmelnytskyi	150
Lutsk	150	Cherkasy	250
Lviv	250	Chernivtsi	150
Mykolaiv	400	Chernigiv	150
Odesa	400	**Total**	**5950**

Inclusion criteria

Men who met the following criteria were included into the survey:

- had at least one oral or anal sexual contact with a man during the last 6 months before the day of the inquiry;
- were 14 and more years old at the moment of their attraction to the survey;
- lived, worked or studied in the surveyed city;

According to the sample size, from 2 to 4 primary respondents were selected in each city. Criteria, according to which seeds were selected, are listed below:

- bisexual;
- MSM with high or medium finanicial status;
- HIV-negative (according to the respondent);
- Is not a client of HIV-service organization;

- Is from 14 to 25 years old;
- Is from 14 to 18 years old;
- Size of his own network of friends among MSM is not less than 7.

Survey toolkit

The survey was conducted in accordance with the preliminary developed Protocol. A standard questionnaire was used for the interviewing, which has been used since 2007 with minor modifications for monitoring the behaviour of MSM.

The entire survey toolkit underwent examination by the Commission of Professional Ethics from the Sociological Association of Ukraine and by the Committee of Medical Ethics from the Institute of Epidemiology and Infectious Diseases named after L.V. Gromashevskiy of the Academy of Medical Sciences of Ukraine.

Biological component of the survey

Interviewing of the respondents was combined with bloodtesting for HIV, for which rapid tests CITO TEST HIV 1/2/07 were used. HIV testing was used not for individual diagnostics, but for determination of HIV prevalence in the group.

Each testing was accompanied by pre- and post-test counselling of a medical worker of AIDS centres. In case of a positive result of HIV-test, the respondent got the referral to the AIDS centre for the clarifying testing.

Approaches to the anaysis

Main peculiarities of the results of this survey are subject to the survey methodology: recruitment of the respondents was conducted by using RDS method; accordingly, the analysis was made at the regional level with the use of RDSAT software (it gives the possibility to conduct analysis with consideration of weights, built on the base of the size of egocentric social networks of the respondents), and at the national level - with the use of SPSS statistical software with consideration of weights exported from RDSAT.

In the majority of the cities values of national indicators without weighting and calculation in RDSAT differ slightly, with unweighted indicator fall in the limist of a confidence interval of the weighted indicator. It means that appropriate national indicator calculated as an average from the unweighted results, does not contain a significant amount of erros of the size of egocentric social networks of the respondents.

In two-dimensional study of the connections between variables the following analyses were used: chi-square, dispersion analysis and non-parametric tests (according to the character of the distribution of variables), and the connection was considered to be significant at $p \leq 0.05$.

As the risk of HIV-infection and other national indicators are related to many factors, which are synergetic and dependent (thus, level of respondents' knowledge about HIV can be related to their age, occupation, usage of NGO's services, etc;), it is reasonable to use the multivariate regression analysis, which makes it possible to define connections of one or another factor with the problem considered. Selection of independent variables for multivariate analysis was conducted by the results of two-dimensional analysis[5] (potential predictors were selected, if their connection with the considered variable was significant at the level of $p \leq 0.2$). Calculations were carried out in R[6]

[5] It should be also noted that when discussing factors that influence the independent variable in regression analysis, there is a need in taking into account connections between independent variables. Threfore, in Chapter 1, which highlights the general scope of the sample, certain attention will be paid to seeking of such connections.

[6] RDevelopment Core Team.R: A language and environment for statistical computing [Electronic resource] / R

environment by the operators glm(formula, family=binomial) та step(model, direction='both'). Results of multivariate analysis were presented as odds ratio (OR) and their 95% confidence intervals (CI).

Analysis of a number of indicators in the dynamics is performed with the consideration of the data of precious bio-behavioural durveys of 2007 and 2009. As far as the survey of 2007 and 2009 covered less number of regional cenres than in 2011, data interpretation in the dynamics is possible only with certain limitations. Comparison in the dynamics at regional level is carris out only by cities, where the survey was also conducted in previous years.

Survey limitations and factors that could influence its results

Cross-sectional survey design does not allow unambiguously determining the causal relationship between factors. It allows confinetly to note only of inherency a certain pattern of behavior or HIV status to a certain subgroup of respondents, but does not allow getting answers to questions when changes occurred and what was their cause.

Despite the fact that in 2011 the geography of the survey was extended to all regional centers of Ukraine, these data may not be representative of the totality of MSM in Ukraine. Data are representative of the MSM population living in regional centers (they have greater access to information and services on HIV prevention), because MSM from small towns and villages were not involved.

A total sample MSM from different cities are represented almost equally (mostly the city sample makes up 150 respondents), but it does not match the structure of MSM in these cities.

In some cities (Kyiv, Mykolaiv, Odesa, Krivyi Rig, Chernivtsi) the sample is halfly consisted ofclients of HIV-service organizations. This imposes certain restrictions on the dissemination of findings to the entire population of MSM in the city, as clients have their own peculiarities.

RDS methodology seems to be the best way to study closed groups. However, there is some risk of getting bias indicators as the most reliable type of sample - representative –is not implemented.

The level of institutional development of LGBT-community and MSM-service is not equal in different regions. Thus, in Kyiv, Odesa, Mykolayiv and Donetsk region, which are major economic centers, where people coming from other regions, there are more opportunities for MSM to receive specific services (both preventive and recreational) than in other regions of Ukraine, therefore for these cities larger volumes of samples were established and quality of the samples was the best.

In the course of the field stage of the survey problems occurred which had certain influence on the sample formation. Particularly:

- Supervisor replacement or errors in the work of regional team, which caused latest art of the field stage and its length in time (Ivano-Frankivsk, Uzhgorod, Khmelnytskyi);
- Inability to find a relevant seeds which influenced the reduction of the number of seeds to one, giving rise to the absence of respondents with certain characteristics in the sample (age, financialstatus) and imposed certain limitations on the data analysis in RDSAT (Ivano-Frankivsk, Chernigiv);
- Involvement of clients of MSM-service organization as the seeds (the main seeds' selection criterion was absence of belonging to any MSM-resvice or LGBT organization) which caused the sample distortion to the clients (Mykolaiv);
- Low interest of MSM themselves to participate in the survey (Khmelnytskyi);
- Unauthorized exclusion by the supervisors of certain cities the expression –NGO and informational and educational events" out of the question –Have you bought condoms within the last month (30 days) (for example, in drugstores, NGO, within informational and

educational events ect)? ",which makes the comparisonn of the respondents'answers of the sean do ther cities impossible *(Cherkasy, Lviv, Mykolaiv, Odesa)*.

- Uneven distribution of respondents in the subsamples by city districts. In order to control MSM sample by city districts (to avoid bias in the sample of the district residents where the survey was conducted) the question was included in the questionnaire on the disctric where a respondent lives. Results given in Table 2 indicate that distribution of respondents by city district is rather ueven, though the sample covers the whole city. The most uneven are the respondents' distributions in the districts of Vinnytsia, Zhytomyr, Kirovograd, Rivne and Uzhgorod, which may indicate lack of data representativeness at the city level in these regions.

Table2.Distribution of the respondents by districts of certain cities

«We are not asking your address, but we would like to know the city district you live or spend most time in: name of administrative district?»		**%**
Vinnytsia, N = 150	Zamostianskyi	21
	Leningradskyi	7
	Leninskyi	60
	Staromiskyi	12
Dnipropetrovsk, N = 350	Industrialnyi	9
	Amurnyzhniodniprovskyi	15
	Babuskinskyi	13
	Leninskyi	19
	Zhovtnevyi	14
	Kirovskyi	11
	Chervonogvardiiskyi	6
	Samarskyi	13
Donetsk, N = 400	Budionivskyi	12
	Voroshylivskyi	12
	Gorniatskyi	0
	Kalyninskyi	13
	Kamyanskyi	0
	Kyivskyi	11
	Kirovskyi	11
	Kuibyshevskyi	9
	Leninskyi	10
	Petrovskyi	5
	Proletarskyi	17
Zhytomyr, N = 150	Bogunskyi	57
	Korolivskyi	25
	Korolskyi	17

	Tsentralnyi	1
Zaporizhzhia, N = 200	Zhovtnevyi	23
	Zavodskyi	20
	Komunarskyi	12
	Leninskyi	20
	Ordzhonikidzevskyi	14
	Knortytskyi	6
	Shevchenkivskyi	5
Kyiv, N = 400	Golosiyivskyi	8
	Darnytskyi	15
	Desnianskyi	6
	Dniprovskyi	4
	Obolonskyi	11
	Pecherskyi	8
	Podilskyi	7
	Sviatoshynskyi	17
	Solomyanskyi	12
	Shevchenkivskyi	12
Kirovograd, N = 150	Leninskyi	41
	Kirovskyi	58
	Refused to answer	1
Kryvyi Rig, N = 150	Zhovtnevyi	31
	Saksaganskyi	11
	Tsentralnyi	21
	Inguletskyi	12
	Ternovskyi	10
	Dovgintsevskyi	11
	Dzerzhynskyi	4
Lugansk, N = 200	Artemivskyi	21
	Zhovtnevyi	23
	Kamyanobrodskyi	25
	Leninskyi	31
Lviv, N = 250	Galytskyi	14
	Zaliznychnyi	21
	Shevchenkivskyi	23

	Sykhivskyi	16
	Lychakivskyi	7
	Frankivskyi	19
Mykolaiv, N = 400	Refused to answer	13
	Tsentralnyi	39
	Korabelnyi	12
	Zavodskyi	18
	Leninskyi	18
	Tsentralnyi	0
Odesa, N = 400	Malynovskyi	14
	Kyivskyi	29
	Prymorskyi	30
	Suvorovskyi	27
Poltava, N = 200	Zhovtnevyi	44
	Kyivskyi	26
	Leninskyi	26
	Tsentralnyi	4
Rivne, N = 150	Pivnichnyi	11
	Lionokombinat	2
	Yuvileinyi	4
	Boiarka	8
	Zaliznychnyi	8
	Tsentralnyi	45
	Vokzalnyi	15
	Tsentralnyi	2
	12 school	5
Simferopol, N = 200	Refused to answer	0
	Tsentralnyi	27
	Zh/d	35
	Kyivskyi	38
Sevastopol, N = 150	Refused to answer	5
	Leninskyi	27
	Nakhimovskyi	18
	Balaklavskyi	10
	Gagarinskyi	40

Sumy, N = 200	Zarichnyi	47
	Kovpakovskyi	53
Ternopil, N = 150	Refused to answer	7
	BAM	25
	Skhidnyi	16
	Tsentralnyi	28
	Druzhba	24
Uzhgorod, N = 150	Shakhta	15
	Novyi	7
	Chervynytsia	0
	Dravtsi	5
	Onokivtsi	6
	Tala	7
	Pidshypnyky	3
	Radvanka	8
	Tsentr	41
	Bam	2
	Prospekt	4
	Vokzal	0
	108-yi	1
	Dastor	1
Kharkiv, N = 300	Dzerzhynskyi	22
	Kyivskyi	18
	Moskovskyi	20
	Leninskyi	12
	Ordzhonikidzevskyi	7
	Zhovtnevyi	2
	Chervonozavodskyi	5
	Kominternivskyi	9
	Frunze	5
Kherson, N = 250	Refused to answer	1
	Suvorovskyi	37
	Komsomolskyi	40
	Dniprovskyi	22
Cherkasy,	Prydniprovskyi	48

N = 250	Sosnivskyi	52
Chernivtsi, N = 150	Pershotravnevyi	38
	Shevchenkivskyi	51
	Sadgirskyi	11
Chernigiv, N = 150	Novozavodskyi	54
	Desnianskyi	46

CHAPTER 1.GENERAL CHARACTERISTICS OF THE SAMPLE

Key social and demographic characteristics of MSM interviewed in 2011 are presented in this chapter as well as data on social group membership in dynamics as compared to 2007 and 2009.

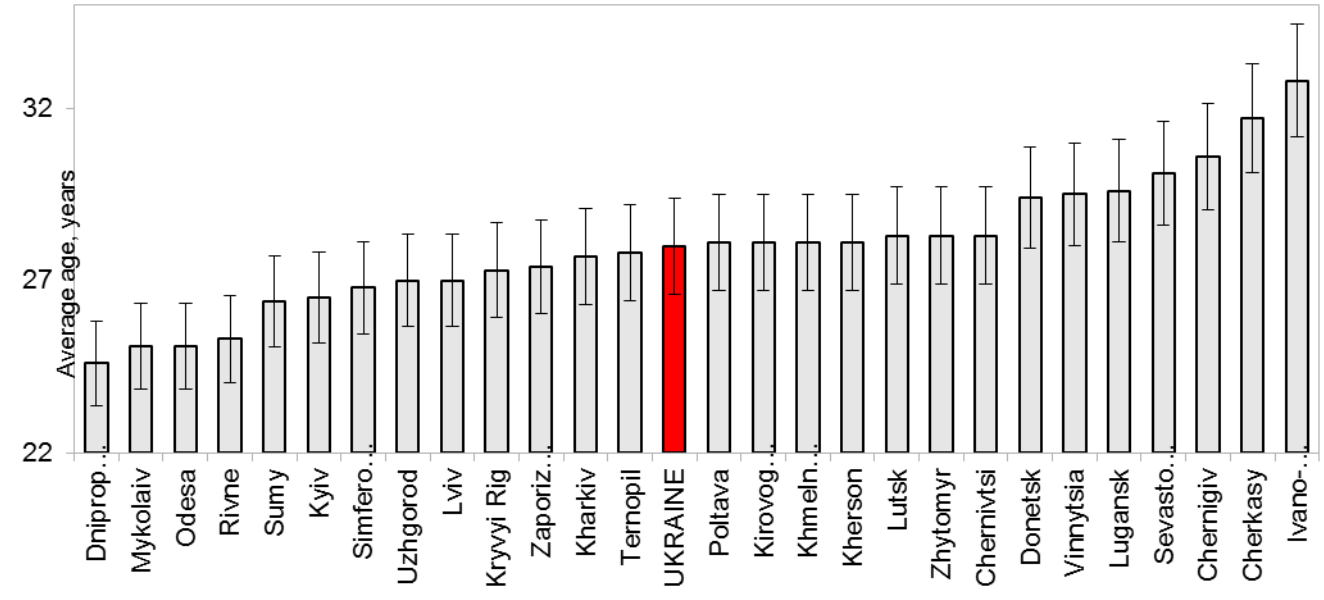
1.1. Age and marital status

Respondents at the age of 14-78 years got into the sample. Average age is 28 ± 7 years. Table 3 presents distribution by age groups. The data obtained can be compared to results of the monitoring of Ukrainian society[7]: 21% of the interviewed belonged to the age group ~~"u~~nder 30 years of age" in 2010,while there are three times as many respondents in this group among MSM. Average age of the interviewed from different cities is different (see Fig. 1) – MSM from Dnipropetrovsk are the youngest, MSM from Ivano-Frankivsk are the oldest.

Table3.Distribution of respondents by age groups

Age group, years	**%, N = 5950**
14–19	10
20–29	56
30–39	27
40–49	6
50+	1

Figure1. Average age of MSM in the surveyed cities



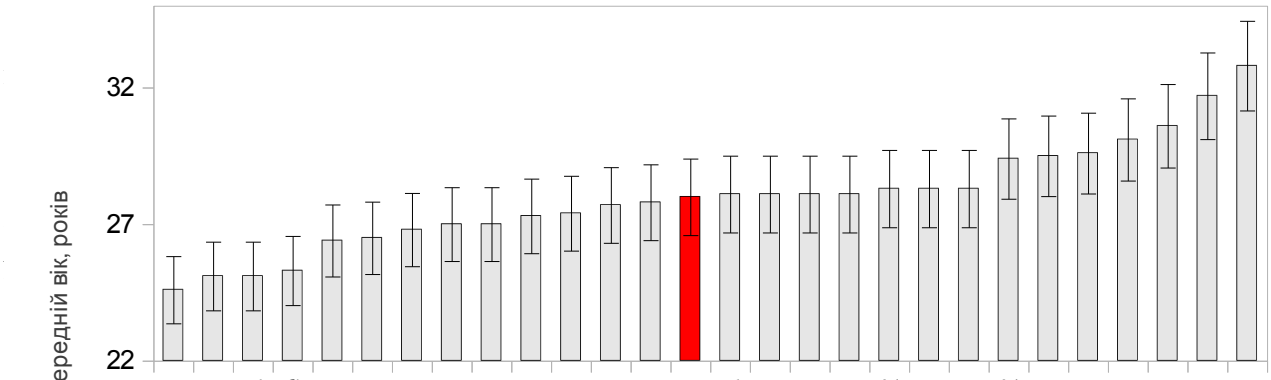


Table4.Distribution of respondents by official marital status and average age of each subgroup

Official marital status	**%, N = 5950**	**Average age (95% CI), years**
Have never been married	83	25.9 (25.8–26.2)
Officially married	5	35.0 (34.1–35.8)
Divorced	11	35.3 (34.7–35.8)
Widowed	1	39.3 (36.2–42.4)

Statistically significant ($p \leq 0.001$) are the differences between average age of the respondents who are officially married, widowed or have never been married.

Distribution by actual marital status is given in Table 5.

Table5.Distribution of respondents by actual marital status and average age of each subgroup

Actual marital status	**%, N = 5950**	**Average age (95% CI), years**
Lives alone	35	29.5 (29.2–29.8)
Lives with parents or relatives	43	24.6 (24.3–24.8)
Lives with a female partner	6	34.2 (33.4–35.0)
Lives with a male partner	17	29.4 (29.0–29.8)

Statistically significant ($p \leq 0.001$) are the differences between average age of the respondents who live and have common household with a husband, a wife or parents.

Comparison to the data on the family structure of Ukrainians gives us the possibility to see a number of differences of MSM group. For example, according to the data of the Institute of Sociology NAS of Ukraine, there were 11% of people living alone in 2010. At the same time the interviewed MSM sample provides us with three times as much data[8] (certainly, there are certain limitations for such a comparison, therefore it should be taken like the first attempt of data comparison).

Attention is attracted to quite a big[9] share (slightly less than a half) of respondents living with parents or relatives. Obviously, it is connected with age. MSM living alone or with a male partner are more socially mature.

Knowledge of MSM marital status is important for analysis of bisexual contacts.

Official and actual marital statuses are naturally linked with each other. Thus, 81% of those living a female partner have officially registered heterosexual marriage, while 99% of those living with a male partner are either unmarried or divorced. At the same time it should be noted that the share of unregistered heterosexual partnerships is quite significant: thus, there are 7% of divorced and 12% of unmarried among those living with a female partner. Therefore, it is important to take into account actual marital status when studying MSM behaviour, especially in the context of bridge groups.

Official marital status of the respondents from different regions is given in Table 6. Vinnytsia, Zhytomyr, Poltava, Cherkasy, Khmelnytskyi and Chernivtsi (i.e. medium-size cities of central and

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[8] One of the objectives of further surveys is to verify this fact taking into account the age of the compared groups

[9] Results of the Ukrainian part of the European Social Survey (2010 , 5th round) show that 167 (or 13%) of 1286 interviewed men at the age of 15+ years live with parents or grandparents

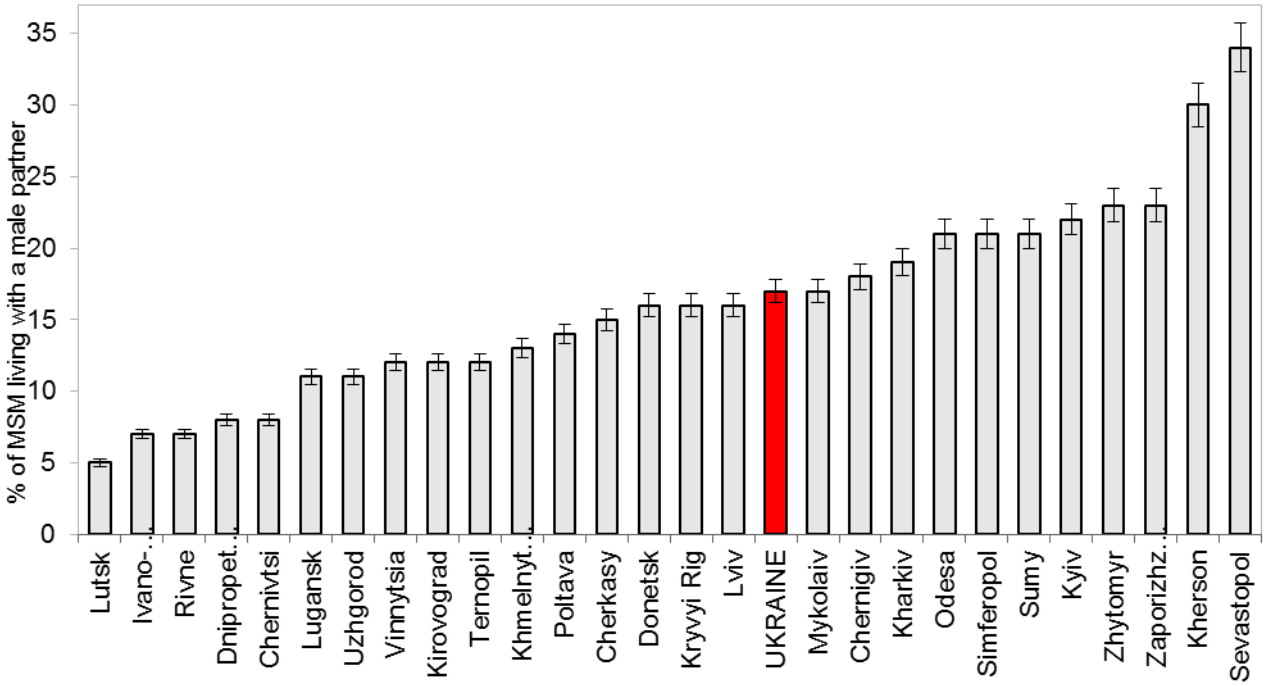
northern Ukraine) are characterized by the biggest shares of married people. Accordingly, there are more people who have never been married in Dnipropetrovsk, Zaporizhzhia, Kyiv and others.

Table6.Distribution of official marital status by cities, %

City	Have never been married	Officially married	Divorced or widowed
Ukraine in general	83	5	12
Vinnytsia	73	15	12
Dnipropetrovsk	95	1	5
Donetsk	81	6	13
Zhytomyr	68	14	18
Zaporizhzhia	92	4	5
Ivano-Frankivsk	81	5	15
Kyiv	91	2	7
Kirovograd	71	9	20
Kryvyi Rig	84	4	12
Lugansk	90	4	7
Lutsk	73	5	21
Lviv	97	0	3
Mykolaiv	89	3	9
Odesa	90	1	9
Poltava	72	13	16
Rivne	81	5	13
Simferopol	85	7	9
Sevastopol	68	9	23
Sumy	81	3	16
Ternopil	87	2	11
Uzhgorod	98	1	1
Kharkiv	84	6	10
Kherson	78	8	15
Khmelnytskyi	72	11	17
Cherkasy	67	14	20
Chernivtsi	75	11	14
Chernigiv	68	6	26

It could have been thought that shares of those living with male partners are bigger in large cities, because LGBT/MSM infrastructure in big cities is more developed; therefore there are more chances to meet each other. However, Figure 2 shows that there is no such connection between size of the city and MSM share in the same-sex partnership.

Figure2.Share of MSM in the same-sex partnerships by surveyed cities



1.2. Education and financial status

The sample has quite a big share of people with higher education (see Table 7). In further analysis we will combine people with complete higher education and a scientific degree in one group.

Table7.Distribution of respondents by educational level

Education	**%, N = 5950**	
Incomplete secondary (9 classes)	3	
Complete secondary (11 classes)	12	
Vocational secondary (technical school)	30	
Incomplete higher (bachelor)	21	
Complete higher (master, specialist)	33	34
Scientific degree (Candidate of Science, Doctor of Science)	1	

In terms of regions, Chernivtsi should be pointed out, where 25% of people with only primary education were fixed (in other regions this share does not exceed 6%) as well as Kyiv and Lutsk, where more that a half has higher education.

As far as financial status is concerned (see Table 8), it seems logical that the respondents symmetrically divided among the most represented average by the level of financial welfare group. As compared to the results of interviewing of representative sample of Ukrainian population, this survey respondents are better-off: thus, a third of the interviewed by the Gorshenin Institute chose

the option –Barely make ends meet…", while there were only 4% of such among our respondents (as it was already noted, there are certain limitations for such a comparison, therefore it should be taken like the first attempt of data comparison

Table8.Distribution of respondents by financial status and average age of each subgroup

Financial status	**%, N = 5950**		**Average age (95% CI), years**
Barely make ends meet, sometimes have no money even for food	4	26	27.2 (26.1–28.2)
Have enough money for food, but buying clothes or shoes causes difficulties	22		25.8 (25.4–26.1)
In general, have enough money for life, but not for valuables (furniture, refrigerator)	47		27.2 (26.9–27.4)
Have no financial difficulties except for especially large purchases (accommodation, car)	23	27	29.8 (29.4–30.2)
Have no financial difficulties at all	4		31.1 (30.1–32.1)

In the previous survey of LGBT (including MSM)[10]quite similar data were obtained on the financial status of respondents, but the difference from the distribution of wealth among the general population of Ukraine was interpreted as the result of the fact that interviewing was conducted via Internet and mostly covered residents of eastern Ukraine.

Differences in average age of the groups of the poor (–barely make ends meet', –have enough money for food, but buying clothes or shoes causes difficulties') and the wealthy (–have no financial difficulties except for especially large purchases (accommodation, car)', –have no financial difficulties at all") are not significant, but between these groups and the largest group of those who –in general, have enough money for life, but not for valuables" differences are significant – the level of financial welfare is connected with the respondents' age, in fact there are more young people among the poorest, and middle-aged people among the wealthy.

For convenience, respondents were united into three categories by the level of financial welfare: poor (–barely make ends meet', –have enough money for food, but buying clothes or shoes causes difficulties'), middle wealth (–in general, have enough money for life, but not for valuables (furniture, refrigerator)") and wealthy (–have no financial difficulties except for especially large purchases (accommodation, car)', –have no financial difficulties at all").

The Table 9 presents regional peculiarities of the financial status. It should be noted that Ternopil stands out against all other cities by quite a big share of poor MSM (63%). However, it can be the result of the peculiarities of sample formation in the city, which was described in the Chapter –Methodology" (subsection –Survey limitations and factors that could influence its results").

Table9.Shares of MSM subgroups with different financial status in the surveyed cities

City	**Financial status**

[10] Step forward, two back: LGBT situation in Ukraine in 2010-2011 / O. O. ZINCHENKOV, M. G. KASIANCHUK, A. V. KRAVCHUK, A. Y. MAIMULAKHIN, O. I. OSTAPENKO, S. P. SHEREMET (Council of LGBT organizations of Ukraine, Centre «OUR world», LGBT-centre «Donbas-Soc.Project»). — K.: Centre «Our world», 2011. — 152 p.

	Poor	Middle wealth	Wealthy
Ukraine in general	26	47	27
Vinnytsia	28	37	35
Dnipropetrovsk	13	65	23
Donetsk	35	46	19
Zhytomyr	14	35	51
Zaporizhzhia	15	60	26
Ivano-Frankivsk	28	52	20
Kyiv	16	48	36
Kirovograd	47	37	15
Kryvyi Rig	13	55	32
Lugansk	48	42	10
Lutsk	11	39	50
Lviv	42	49	9
Mykolaiv	30	48	23
Odesa	16	43	42
Poltava	26	49	26
Rivne	52	37	11
Simferopol	18	57	25
Sevastopol	18	51	31
Sumy	14	64	22
Ternopil	63	25	12
Uzhgorod	17	45	39
Kharkiv	46	42	12
Kherson	10	38	51
Khmelnytskyi	23	42	35
Cherkasy	35	43	22
Chernivtsi	18	69	13
Chernigiv	17	27	56

Apparently, financial status is connected not only with age, but also with the educational level (see Table 10) –with increase of the level of financial welfare, there is decrease of the share of people with secondary education (including vocational secondary) and increase of the share of people with higher education.

Table10.Share of respondents with different educational level among subgroups with different financial status, %

Education	Financial status

	Poor, N = 1551	Middle wealth, N = 2784	Wealthy, N = 1615
Incomplete secondary	5	2	2
Complete secondary	21	12	5
Vocational secondary	40	31	18
Incomplete higher	21	23	18
Complete higher or a scientific degree	14	32	57

1.3. Religiosity and confession

The vast majority of the respondents almost equally shared into religious and irreligious. Only 5% did not give answer to that question: 1% refused to answer, 4% found it difficult to determine their attitude to religion (see Table 11).

Answers of the respondents who refused to answer were excluded from the analysis due to their small number.

Table11.Distribution of respondents by religiosity and average age of different subgroups

«Do you consider yourself a religious/pious person?»	**%, N = 5874**	**Average age (95% CI), years**
Definitely yes	24	28.9 (28.5–29.3)
Rather yes than no	30	28.0 (27.7–28.4)
Difficult to answer	4	26.9 (26.0–27.8)
Rather no than yes	19	27.1 (26.6–27.5)
Definitely no	26	26.6 (26.3–27.0)

There is an interesting regularity concerning average age of each of these groups: religious people are older than those who doubt or deny their religiosity ($p \leq 0.001$).

There is a strong connection ($p < 0.001$) between official and actual ($p = 0.002$) marital status. Thus, almost half of the widowed (43%) definitely consider themselves to be religious and there was no one among them who found it ~~–d~~difficult to answer".

Respondents' religiosity varies significantly according to regions (see Fig. 3) – from 94% in Ivano-Frankivsk to 2% in Chernigiv. It is quite noticeable that this distribution is unambiguously connected with the regional division: thus, the share of MSM who reported on their religiosity is the highest in the cities of western part of Ukraine (Ivano-Frankivsk, Lviv, Ternopil) and at the same time reaches 90% in Kyiv, while in the capital of Zakarpattia there is only little more than a third of such MSM. It can be hypothetically explained by social and cultural differences between Galychyna and Zakarpattia.

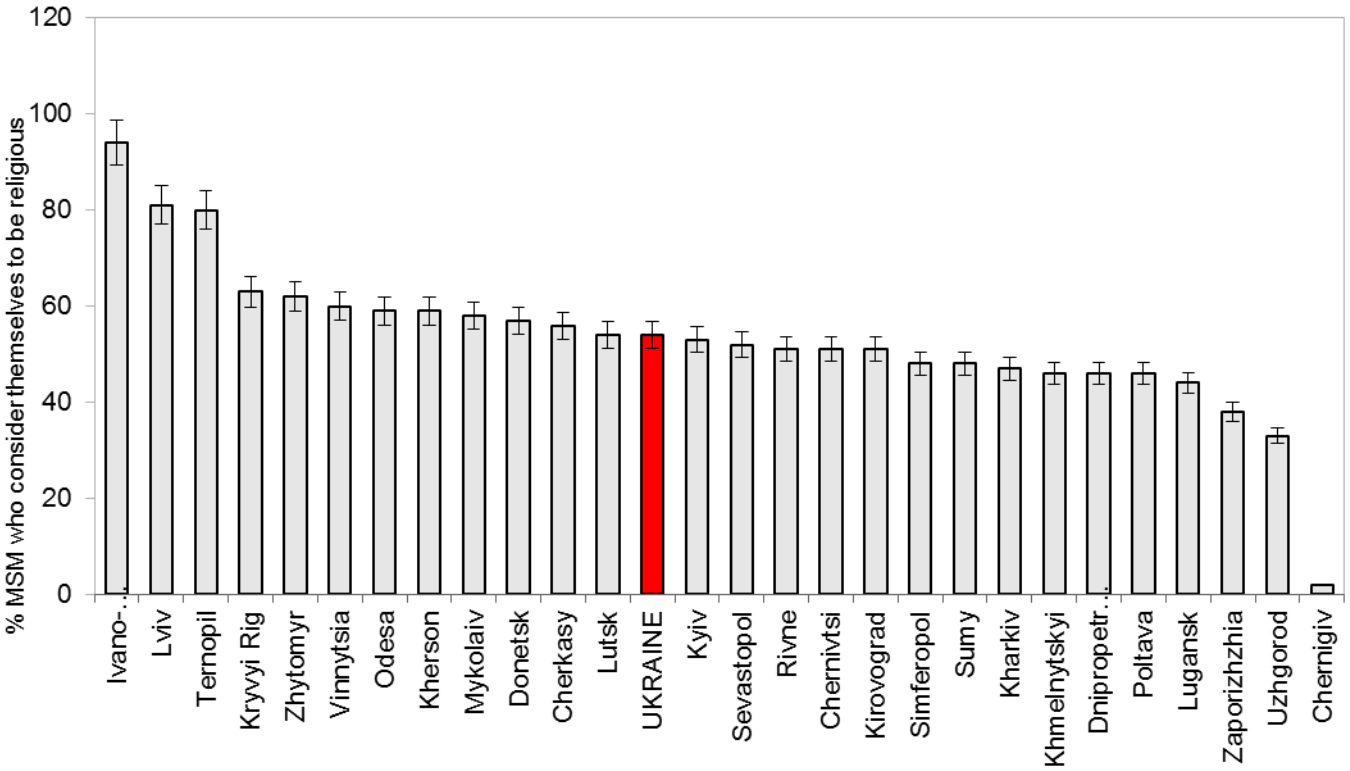


Figure3. ShareofreligiousMSMbythesurveyedcities (religiositywasdefinedasthesumofresponses "Definitelyyes" and "Rather yes than no" to the question «Doyouconsideryourselfareligious/piosperson?»)

Religiosity is slightly connected with educational level (p = 0.08).

There is quite an interesting connection between religiosity and financial status (see Table 12). On the one hand, MSM of middle wealth and wealthy MSM are more inclined to consider themselves to be religious than the poor – it can be connected with the respondents' age. On the other hand, the most numerous group of MSM of middle wealth chose less categorical answers (–rather yes than no", –rather no than yes") more frequently than the poor or the welthy.

Table12.Connection between respondent's religiosity and his financial status, %

«Do you consider yourself a religious/pious person?»	**Financial status**					
	Poor, N= 1536		**Middle wealth, N = 2746**		**Wealthy, N = 1539**	
Definitely yes	26	51	22	56	27	56
Rather yes than no	25		34		29	
Difficult to answer	4		3		4	
Rather no than yes	14	44	17	41	14	42
Definitely no	30		24		28	

As far as confession is concerned, the majority indicated that they considered theselves as followers of Ukraine's traditional churches (Orthodox, Catholics, and Uniates) or being irreligious (see Table 13).

It should be noted that there are some differences between the interviewed and the general

population of Ukraine. Thus, there are less –irreligious" and more –Catholics" in our sample. These peculiarities can be possibly connected with bigger representation of western regions in the sample as compared to the population of Ukraine in general.

Table13.Distributionofrespondentsbyconfessionascomparedtoscientificliteratureonconfessionof Ukrainianpopulation

«What is your confession?»	**%, N = 3463**	**Population of Ukraine in 2010 p.[11]**
Irreligious	6	11.7
Orthodoxy	73	76.7
Catholicism	8	0.8
Greek Catholicism	9	7.4
(Neo) Protestantism	2	0.9
Islam	1	1
Judaism	1	<1
Other	<1	1

Unfortunately, such direct comparison of the MSM sample and general population of Ukraine is very approximate, as there are still no iformation on the peculiarities of settling and regional structure of MSM.

1.4. Being imprisoned

The vast majority of the interviewed has never been imprisoned (see Table 14). It should be noted that an average age of those respondents who gave affirmative answer is much older than an average age of those who denied being imprisoned.

Table14.Distribution of the respondents by the experience of being imprisoned and average age of different subgroups

«Have you ever been imprisoned?»	**%, N = 5941**	**Average age (95% CI), years**
Yes	4	33.3 (32.1–34.4)
No	96	27.4 (27.2–27.6)

Those, who gave affirmative answer, had been imprisoned in a prison or a colony for 27 months on average or a bit more than for two years (minimum durstion made up half a month, maximum one – 15 years).

In terms of regions attention is paid to quite a high share of those who have been imprisoned among MSM from Kirovograd (17%) and total absence of such among MSM from Lugansk and Simferopol, which evokes suspicions concerning the quality of sample formation in these cities.

The marital status of the respondents is generally related to their experience of being imprisoned (thus, 42% of former prisoners have experience of heterosexual marriage, i.e. they are married,

[11] Ukrainiansociety: 1992–2010. Sociological monitoring [Text] / V. VORONA, M. SHULGA. — K.: Instutute of Sociology NAS of Ukraine, 2010. — 636 p.

divorced or widowed, while there are only 17% of such among those who have never been imprisoned). However, this connection is probably indirect and mediated by age.

Connection between educational level and experience of being imprisoned (see Table 15) seems to be quite reasonable — there are much more people without higher education among former prisoners. Unlike marital status, this connection is not mediated by age, because there are more people of middle and old age group both among MSM with higher education and among former prisoners (see Table 14 above).

Table15.Education of MSM subgroups with different experience of being imprisoned, %

Education	**«Have you ever been imprisoned?»**	
	Yes, N = 208	**No, N = 5733**
Incomplete secondary	11	2
Complete secondary	23	12
Vocational secondary	37	30
Incomplete secondary	11	21
Complete secondary or a scientific degree	18	35

Like education, financial status is closely related to the experience of being imprisoned (see Table 16) – those who have been imprisoned more often have low financial level.

Table16.Financial status of MSM subgroups with different experience of being imprisoned, %

Financial status	**«Have you ever been imprisoned?»**	
	Yes, N = 208	**No, N = 5733**
Poor	40	26
Middle wealth	33	47
Wealthy	27	27

1.5. Sexual orientation

Almost two thirds of the respondents reported that only men attract them (see Table 17).

Table17.Distribution of respondents by the degree of sexual attraction of people of different sex for them and average age of different subgroups

«Who do you have sexual desire to?»	**%, N = 5950**	**Average age (95% CI), years**
Only men	60	26.9 (26.7–27.1)
Mostly men, but sometimes women	23	28.1 (27.7–28.6)
Both men and women	12	29.8 (29.2–30.5)
Mostly women, but sometimes men	5	29.5 (28.6–30.4)
Only women	<1	28.2 (20.4–36.0)
Haven’t decided yet	<1	23.0 (21.0–25.0)

Differences in average age between different groups are statistically significant. Quite logical is the fact that those, who have not determined their own sexual orientation yet, belong to the youngest group.

Marital status is also obviously connected to the sense of sexual attractiveness of people of different sex for the respondent (see Tables 18 and 19) – the share of those who have never been married reasonably increases with more common sense of attractiveness of the opposite sex, while at the same time the share of those living with a male partner decreases and those living with a female partner increases. At times these connections can be mediated by age, but it needs additional researches.

Table18.Connection between the experience of official heterosexual marriage and sexual attractiveness of people of different sex for the respondent, %

Official marital status	**«Who do you have sexual desire to?» [a)]**			
	Only men, N = 3582	**Mostly men, but sometimes women, N = 1357**	**Both men and women, N = 700**	**Mostly women, but sometimes men, N = 277**
Have never been married	94	75	54	47
Have an experience of heterosexual official marriage [b)]	6	15	46	53
Notes: a) Categories ~~–o~~nly women" and ~~–H~~aven't decided yet" have not been analyzed due to their small number (11 and 23 people correspondingly); b) Sum of the categories ~~–o~~fficially married", ~~–d~~ivorced" and ~~–w~~idowed"				

Table19.Connection between actual marital status and sexual attractiveness of people of different sex for the respondent, %

Actual marital status	**«Who do you have sexual desire to?» [a)]**			
	Only men, N = 3582	**Mostly men, but sometimes women, N = 1357**	**Both men and women, N = 700**	**Mostly women, but sometimes men, N = 277**
Lives with a male partner	21	14	6	1
Lives with a female partner	<1	3	26	44
Lives with parents or relatives	34	43	30	25
Lives alone	45	40	40	30
Note: a) Categories ~~–o~~nly women" and ~~–H~~aven't decided yet" have not been analyzed due to their small number (11 and 23 people correspondingly)				

Two thirds of the respondents describe their sexual orientation as ~~–h~~omosexual" (see Table 20). Furthermore, this group is the youngest as compare to the groups of bisexual and heterosexual MSM (since there are very few interviewed transsexual MSM, they will not figure in the further analysis).

Table20.Distribution of respondents by sexual orientation and average age of each subgroup

«Which of the terms listed below best describes your sexual orientation?»	**%, N = 5950**	**Average age (95% CI), years**
Homosexual	66	26.9 (26.7–27.1)
Bisexual	31	29.0 (28.6–29.4)
Heterosexual	2	30.4 (28.6–32.1)
Transsexual	<1	26.7 (22.9–30.4)
Difficult to answer	1	27.8 (25.5–30.1)

The Table 21 demonstrates the coherence between how respondents call themselves in terms of sexual orientation and how they feel sexual attractiveness of people of different sex.

Table21.Connection between sexual orientation and sexual attractiveness of people of different sex for the respondent, %

«Who do you have sexual desire to?» [a]	**«Which of the terms listed below best describes your sexual orientation?»** [b]		
	Homosexual, N = 3931	**Bisexual, N = 1838**	**Heterosexual, N = 83**
Only men	90	2	1
Mostly men, but sometimes women	10	50	10
Both men and women	<1	36	19
Mostly women, but sometimes men	0	12	70
Notes:a) Categories ~~o~~nly women" and ~~H~~aven't decided yet" have not been analyzed due to their small number (11 and 23 people correspondingly); b) Categories ~~tr~~anssexual" and ~~D~~ifficult to answer" have not been analyzed due too their small number (17 and 69 people correspondingly)			

1.6. Clients of MSM-service

A quarter of the interviewed are clients of MSM-service (see Table 22).

Table22.Distribution of respondents by their relations with MSM-service and average age of each subgroup

«Are you a client of organizations working with MSM: have a card or an individual code?»	**%, N = 5950**	**Average age (95% CI), years**
Yes	26	27.6 (27.2–27.9)
No or refused to answer	74	27.7 (27.5–27.9)

The Table 23 shows percentages of clients of MSM-service organizations among MSM interviewed in different cities. Coverage as a national indicator is given in Chapter 3, here we only pay attention to some regional peculiarities.

It seems quite logical that the share of clients is significant among interviewed MSM in cities where there are MSM-projects (Cherkasy, Mykolaiv, Zaporizhzhia, Donetsk, etc) and vice versa – there

are no clients in cities where there are no projects (Sumy, Ivano-frankivsk, Uzhgorod etc). However, situation is strange in the cities where projects have alredy been realized for quite a long time (for example, Lviv, Dnipropetrovsk), but their clients are almost not represented in the sample (<1%). Attention is also paid to the change of the shares of clients in the subsamples of 2009 and 2011. For example, in 2009 the share of clients in the Sanle of Lviv reached 50%, while in 2011 it made up less than 1%. As it was already mentioned in the Chapter ―Methodology", difference in the sample structures of 2009 and 2011 as well as significant share of clients in the sample complicates the data comparison by separate cities and dissemination of the data obtained on the whole MSM population, but not only clients.

Table23.Share of MSM who are clients of MSM-service, by regions, %

City	**«Are you a client of organizations working with MSM: have a card or an individual code?»— Yes**	
	2009	**2011**
Cherkasy	86	75
Mykolaiv	97	73
Kyiv	65	60
Kryvyi Rig	–	47
Chernivtsi	–	44
Simferopol	30	43
Zaporizhzhia	–	41
Poltava	0	38
Kherson	79	30
Khmelnytskyi	–	29
Odesa	23	26
Donetsk	13	21
Lugansk	0	20
Kharkiv	21	16
Zhytomyr	–	15
Sevastopol	–	12
Vinnytsia	–	5
Rivne	–	1
Ternopil	–	1
Dnipropetrovsk	3	1
Lviv	50	<1%
Ivano-Frankivsk	64	0

Average age of clients and non-clients (see Table 22), official marital status, educational level, financial status and religiosity do not differ in these two groups of respondents. At the same time there are differences in actual marital status (see Table 24) and sexual orientation: there are more MSM living with a male partner among clients.

Table24.Distribution of clients and non-clients of MSM-service by actual marital status, %

Actual marital status	**«Are you a client of organizations working with MSM: have a card or an individual code?»**	
	Yes, N = 1530	**No, N = 4391**
Lives with a male partner	21	15
Lives with a female partner	4	7
Lives with parents or relatives	39	44
Lives alone	36	34

1.7. Use of psychoactive substances

The vast majority of the respondents consume alcohol (82%). The intensity of alcohol consumption among MSM has changed in the period from 2007 to 2011 (see Table 25): the share of respondents who consume alcohol every day has increased, though there are no data which would allow calling it alcohol dependence.

Table25.The intensity of alcohol consumption by MSM: data comparison of the three monitorings (2007–2011), %

«How often have you consumed alcohol within 30 days?»	**2007, N = 1764**	**2009, N = 2300**	**2011, N = 5950**
Every day	8	8	13
No less than once a week	42	48	43
Less than once a week	33	34	42

Data comparison to the results of regular sociological monitoring of the population of Ukraine[12] show that 2% of Ukrainian population consume alcohol every day, which is significantly less than in case of MSM. At the same time, it should be noted that such comparison can be misleading due to different composition of samples (thus, data on the population of Ukraine include not only men, but also women, not only urban population, but also rural as well as age ranges are also different). Therefore, the question of more or less alcoholization of MSM subgroup as compared to general population still leaves open.

Theintensityofalcoholconsumption is related to respondents' age – the most active (comsume either every day or several times a week) are young MSM of 20-24 (50%) and 25-29 years of age (57%).

Beverageswithlowalcoholiccontentdominateamongalcoholpreferencesoftherespondents – beer, ginandtonicetc (42%), strongdrinksareonthesecondplace – vodka, cognac (36%) beverageswithaveragealcoholiccontentareonthelastplace – vines, liquors (22%).

Alcohol preferences are strongly connected to age. Thus, weak drinks are most popular among young people of 14-29 years old, while strong drinks are used among respondents of 35+ years of age.

Practice of use of psychoactive substances and drugs is not common among MSM, Thus, 16% of the respondents in general have had an experience of using non-injecting drugs (smoked marijuana,

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[12] Ukrainian society: 1992–2010. Sociological monitoring [Text] / V. VORONA, M. SHULGA. — K.: Instutute of Sociology NAS of Ukraine, 2010. — 636 p. In order to compare results of general population interviewing were transformed in the following way: people who chose anser ―No. never" to the question ―Doyou consume alcohol?" in 2010, were excluded from the analysis and shares of the rest of options were recalculated.

sniffed cocaine, used ecstasy etc), including 4% of those who used to use drugs (more than a year ago), but are not now.

Less than 1% (50 people) is using injecting drugs. It should be noted that from 2004 to 2011 the share of the respondents who have had an experience of injecting drug use has ranged from 1 to 2%. The number of respondents who used to use injecting drugs (more than a year ago), but are not now makes up 2%.

1.8. Structural changes in the population of MSM (2007-2011)

The use of a standard questionnaire and single methodology of sample formation in the surveys of 2007-2011 gives us the possibility to compare the data obtained over time. It is obvious from the Table 26 that despite the geographic distribution of the monitoring, there has been no increase of sampled significant changes according to key social and demographic indicators within 5 years.

There are only certain changes in the ratio of clients and non-clients of MSM-service, which is connected both with monitoring distribution on those regions of Ukraine, where there have been no MSM-service until recently and with unstable shares of clients in the samples of certain regions, which can be the results of methodology non-observance (see Chapter ―Methodology").

Table26.Social and demographic indicators of MSM in dynamics, %

	2007, N = 1764	**2009, N = 2302**	**2011, N = 5950**
Age			
Younger than 20 years	12	10	10
20–29	53	55	56
30–39	26	27	27
40–49	7	6	6
50+	2	2	1
Official marital status [a)]			
Have never been married	–	79	83
Officially married	–	6	5
Divorced	–	14	11
Widowed	–	1	1
Actual marital status [a)]			
Lives alone	–	34	35
Lives with parents or relatives	–	40	43
Lives with a female partner	–	6	6
Lives with a male partner	–	20	17
Education [b)]			
Incomplete secondary (9 classes)	8	2	3
Complete secondary (11 classes)	65	61	63
Vocational secondary (technical school)			
Incomplete higher (bachelor)			
Complete higher (master, specialist) and scientific	27	37	34

degree			
«Who do you have sexual desire to?» [c]			
Only men	–	63	60
Mostly men, but sometimes women	–	23	23
Both men and women	–	11	12
Mostly women, but sometimes men	–	3	5
Only women	–	0	<1
Haven't decided yet	–	<1	<1
«Which of the terms listed below best describes your sexual orientation?» [c]			
Homosexual	–	70	66
Bisexual	–	28	31
Heterosexual	–	1	2
Transsexual	–	<1	<1
Difficult to answer	–	1	1
«Are you a client of organizations working with MSM: have a card or an individual code?»			
Yes	–	39	26
No or refused to answer	–	61	74
Notes: a) in 2007 formulation of the answers on marital status differed significantly from the current ones, therefore direct comparison is possible only with data of 2009; b) In 2007 gradation of educational level united complete secondary, vocational secondaru and incomplete higher education; c) In 2007 there were no questions on sexual orientation and gender identity as well as belonging to the clients of NGO			

Conclusion to Chapter 1

Social and demographic characteristics of MSM poplation in Ukraine are stable: four out of five of all MSM involved in biennial monitorings belong to the age group of 20-39 years of age and have never been married. Almost a half lives with parents or relatives, has incomplete or complete higher education, average income and considers themselves to be homosexual.

The vast majority has never been imprisoned.

The number of MSM consuming alcohol has remained on quite a high level for fove years already. Active alcohol consumers are mainly represented by young people at the age of 20-29 years old.

The interviewed have been almost equally divided into those who consider themselves to be religious and those who do not feel so, and belonging to Orthodox denominations prevails anong the first group as well as among the general population of Ukraine.

Despite the stability of the characteristics of MSM national population in time, regional subpopulations have a number of different features.

There are complex relations between all criteria of the interviewed sample, which should be taken into account during further analysis of the determinants of HIV dangerous sexual and social practices, planning of preventive measures etc.

CHAPTER 2.SEXUAL BEHAVIOUR OF MSM

The chapter is devoted to the analysis of sexual practices of MSM. In particular, age of sexual debut with a man, number and types of sexual partners as well as condom use practices during different kinds of sex with different partners have been analyzed. The emphasis is on the experience of last sexual contact and steadiness of the safe behavior practice.

2.1. Experience of homosexual relationships

2.1.1. Age of the first sexual contact with a man

It is important to know the age of the first oral and/or anal contact with a male partner for several reasons.

Firstly, it allows estimating approximately the scope of the MSM group which was not and can't now be covered with the preventive programs because of the legal restrictions[13].

Secondly, it gives opportunity to count the "experience" of homosexual activity (the respondent's age at the moment of interviewing minus his age at the moment of his first homosexual contact) and, thus, to check up the supposed hypothesis about the connection with the risk of seroconversion.

Thirdly, too early start of sexual life (depending on the homo- or heterosexual activity) is connected, as it follows from the sources of literature[14], with the other socially unfavourable factors, for example, the usage of psychoactive substances, the lower level of education, worse social adaptation, etc., which possibly increases the risks of HIV and STI infecting.

Fourthly, the revealing of homosexual teenager (that usually happens accidentally) deprives him of the support from family and close environment and increases the risks of involvement of a young person into either the criminal environment or in prostitution[15].

According to the Ukrainian legislation[16], the age of consent (i.e. the age of younger partner of the sexual contact, at and after which the criminal responsibility of the older partner isn't applied) is determined to be the age of 16 years old.

The first sexual contact with another man happened in respondents' life at average at the age of 17.8 years while in 27% of cases it happened before reaching the age of 16 years old.

There are significant ($p < 0.001$) differences in the age of starting the sexual life between respondents from the age group under 25 years old and the group of 25+ years old – the younger experienced the homosexual contact at average at the age of 16 years old while the older respondents at 19.

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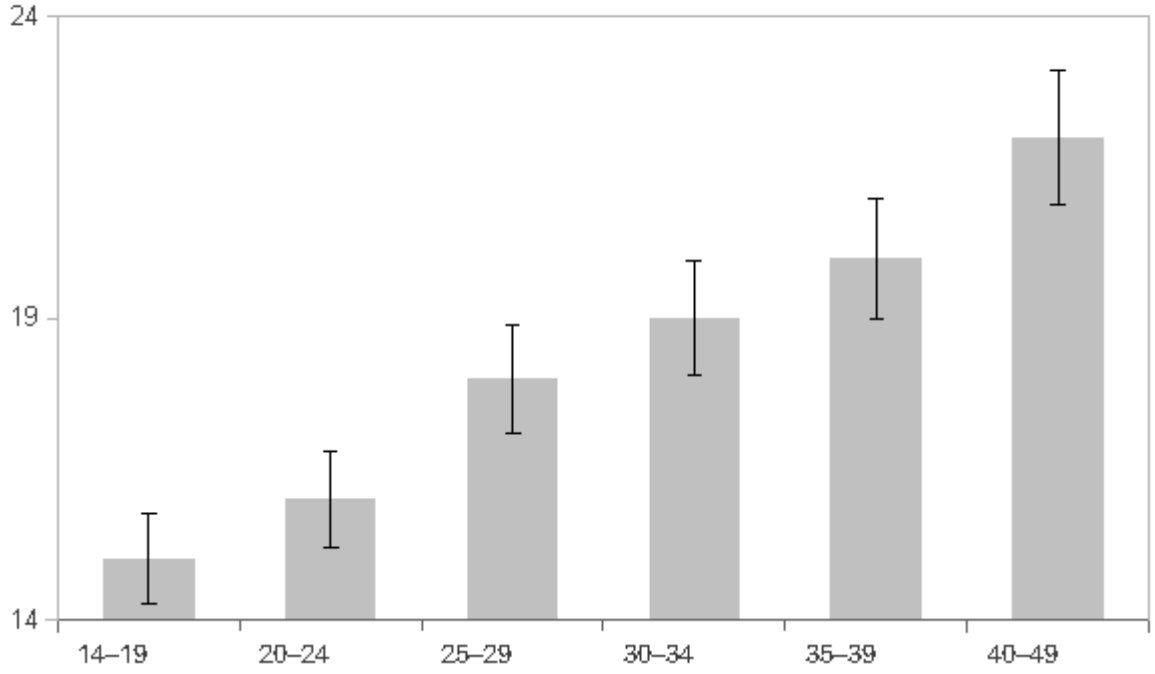
[13] Telchyk A. and others. The Risk Group Teenagers: Evidence Base for Enforcement of the Response to the AIDS Epidemic in Ukraine; Analytical report [Text] / A.TELCHYK, O.BALAKIRIEVA, Y.SEREDA, T.BONDAR, O.SAKOVYCH (UNICEF, the Ukrainian Institute of Social Researches Named after O.Yaremenko). – K.: K.I.S., 2008. – 192 p.

[15] KON I.S. The Moonlight at the Dawn: Images and Masks of Homosexual Love. – M.: Olimp, Ltd. "ThepublishingcompanyAST", 1998. – 496 p.

[16] The Criminal Code of Ukraine, Art. 156 "The Corruption of Minors"

Figure4.Average age of first sexual contact with another man



As far as married, divorced and widowed MSM belong to the older age group comparing with the single respondents (see Chapter 1), their average age of the first homosexual contact is higher (21 and 17 years old respectively).

As it was mentioned above, the average age of the group of respondents who differently feel sexual attractiveness of different sexes, doesn't vary considerably. Therefore, connection between the average age of the first homosexual contact with the sexual orientation is clear and logical: those respondents who reported that they are attracted by women mostly but sometimes by men as well had homosexual contact at the age of 21 while the rest of the groups – at the age of 17-19 years old ($p < 0.001$).

It is observed that there is a difference in age of the first homosexual contact between clients and non-clients while these groups don't vary according to the age: clients had the first homosexual contact with a man at average at the age of 17 years old while non-clients – at 18 ($p < 0.001$). Possibly, it is due to the orientation, the connection of which with the client's status was demonstrated above.

2.1.2. The partners during six months

One of the factors of the increased risks of HIV infecting is an intensive sexual life which unfortunately is an ambiguous notion. On the one hand, the intensity can be expressed by the number of partners (men and/or women) for a certain period of time, on the other hand, actually by the number of sexual contacts with all the partners for a certain period.

The risks analysis is complicated by the fact that different types of male partners[17] are taken by the

[17] All the sexual partners of respondents were divided into *permanent* (sexual contacts with them are durable, at the same time the respondent doesn't pay them and doesn't receive any payments from them for sex), *casual*(partners who are little known to the respondent and with whom respondent had one or a few sexual contacts but didn't pay them and didn't receive any payments from them for sex) and commercial (there was sexual contact either in the cases when the respondent received payments for it or when the respondent paid for it himself).

respondents as sources of diffent level of danger: with a permanent male partner (even if there are a few of them) condoms are used periodically or are not used at all, while with casual and commercial partners condoms are almost always used.

The number of sexual contacts is also indirectly connected with the risks as far as the risks of partners with insertive (i.e. "active role") and receptive (i.e. "passive role") roles differ during the unprotected anal sex. Besides, the frequency of condom use in various types of sex also differs – in the anal sex condoms are used more often than in oral sex.

Actually, therefore, there is a need at first to describe the sexual life of the researched group and then to focus on the practices of the use of condoms and lubricants.

As far as the programs of prevention from HIV-infection among the vulnerable groups with the financing of external donors are functioning in Ukraine, it is important to consider in the analysis the affiliation of respondents to the number of clients of the HIV services because it will indicate the existence or absence of the influence on the risks of infecting.

For the last 6 months almost all the respondents (94%) have had anal sexual contact with a male partner.

Concerning partners during the last before the interviewing anal sex, there was practically an equal number of respondents with permanent and casual partners (see Table 27).

Table27.Category of partner during last anal sex with a respondent and average age of the respondents in these subgroups, %

«Who did you have last anal sex with?»	**%, N = 5635**	**Average age (95% CI), years**
With a permanent partner (a man you have relationship with)	51	27.7 (27.5–28.0)
With a casual partner (a man you do not have relationship with, but you had casual or one-time sex)	46	27.4 (27.2–27.7)
With a commercial partner (you paid for sex)	1	34.8 (33.1–36.5)
With a commercial partner (you were paid for sex)	2	24.8 (23.4–25.8)

Evidently, the most significant differences in the medium age group are observed between different subgroups of commercial partners ($p < 0.001$). Those who pay for sex are mostly men of the medium and older age group, while those who receive payments are usually younger.

There is some connection between official marital status of the respondent and the type of his partner during the last anal sex (see Table 28): if married respondents in most cases had casual partners, the divorced or widowed respondents had with the same frequency either permanent or casual partners. Such connection doesn't depend on the age as far as the subgroups of the married, divorced and widowed MSM are of the same average age (see Table 4). Attention should be as well paid to the fact that the married more often than the divorced or widowed had cases when they paid for sex.

Table28.Category of partner during last anal sex with respondents of different official marital status, %

«Who did you have last anal sex with?»	**Have never been married, N = 4681**	**Officially married, N = 299**	**Divorced or widowed, N = 655**
With a permanent partner (a man you have relationship with)	52	31	48
With a casual partner (a man you do not have relationship with, but you had casual or one-time sex)	44	62	47

With a commercial partner (you paid for sex)	1	7	4
With a commercial partner (you were paid for sex)	3	<1	1

Similar connections are observed between the official marital status and the type of the last partner (see Table 29): those who live with a female partner more often meet with casual partners or pay for sex to commercial partners than those who live separately or with parents or relatives. Respectively, those who live with a male partner, more often have sex with a permanent partner.

From the mentioned above data it follows that a certain part of MSM with a permanent partner or partners, also have casual or commercial partners as well as female partners. The data prove this fact: 40% of respondents who have had sex with a permanent partner during the last month, have had sexual contacts with casual partners as well during this time.

Table29.Category of partner during last anal sex with respondents of different actual marital status, %

«Who did you have last anal sex with?»	**Lives alone, N = 1951**	**Lives with his male partner, N = 957**	**Lives with his female partner, N = 320**	**Lives with parents or relatives, N = 2407**
With a permanent partner (a man you have relationship with)	42	87	28	47
With a casual partner (a man you do not have relationship with, but you had casual or one-time sex)	53	12	64	50
With a commercial partner (you paid for sex)	2	1	7	<1
With a commercial partner (you were paid for sex)	3		1	3

Attention should also be paid to the connection with the financial status of respondents (see Table 30): the wealthy respondents in more cases had the last sex with a permanent male partner and in fewer cases with a casual partner. Such differences can be explained, for example, by the older average age of the group of the wealthy respondents. At the same time, from the practical point of view, it is important to mention that the risks of HIV-infecting of wealthy and other respondents may be different (for example, if respondents practically in all cases use condoms during the contacts with casual partners and periodically use condoms with permanent partners, then affiliation to the group of wealthy people will be associated with the higher risks of HIV/STI infecting).

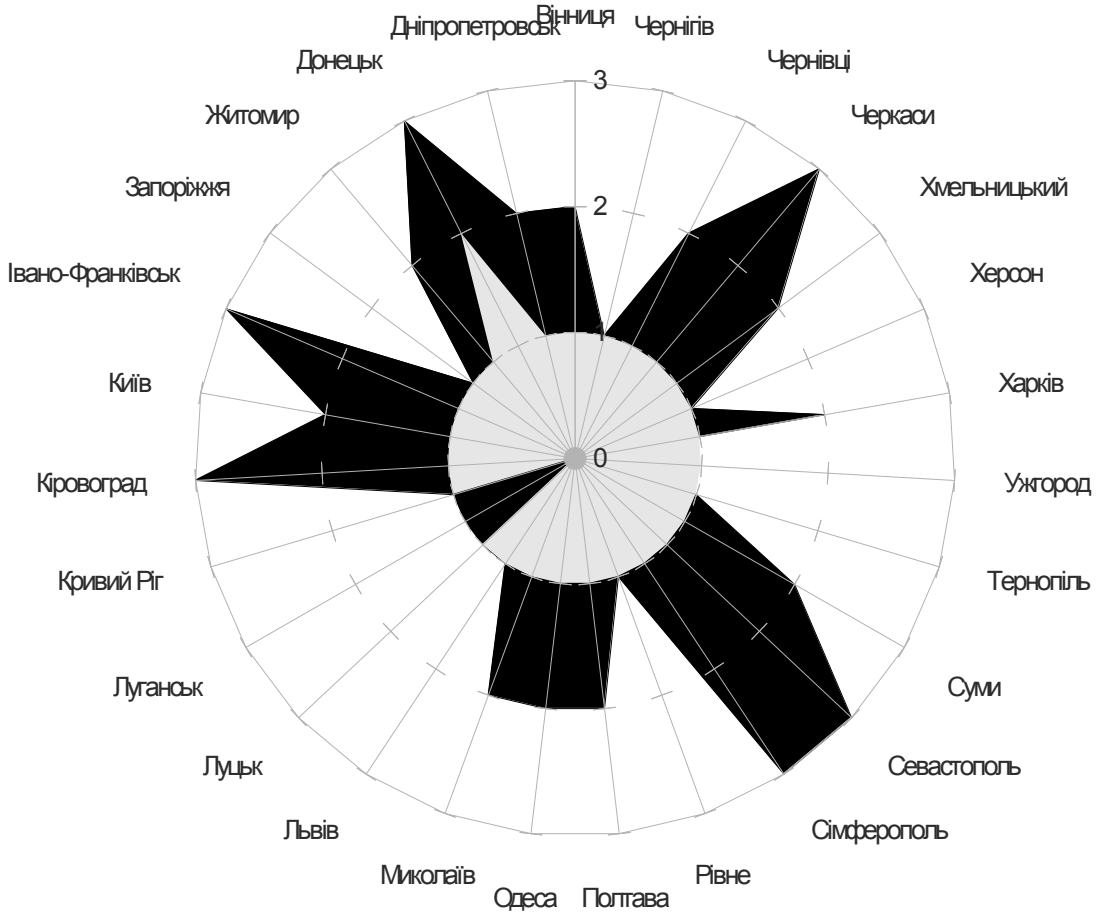
Table30.Category of partner during last anal sex with respondents of different financial status, %

«Who did you have last anal sex with?»	**Poor, N = 1484**	**Middle wealth, N = 2634**	**Wealthy, N = 1517**
With a permanent partner (a man you have relationship with)	48	50	57
With a casual partner (a man you do not have relationship with, but you had casual or one-time sex)	47	48	39
With a commercial partner (you paid for sex)	1	<1	3
With a commercial partner (you were paid for sex)	4	2	1

At average, a month before interviewing the respondents (those who had had corresponding partners during the month) had sex[18] with one permanent partner (min 1, max 60) and with three casual partners (min 1, max 30)[19]. The average number of permanent and casualmale partners doesn't differ among the clients and non-clients of the MSM-service.

The differences between the average number of permanent and casual partners for the last 30 days generally remain to be the same in the desegregation of the sample according to the cities (see Fig. 5) – there are fewer permanent partners than casual ones.

Figure5.Average number of permanent (grey field) and casual (black field) male partners within the last 30 days, by survey cities



Beside the number and the type of male partners an important characteristic of sexual life is a number of sexual contacts in which the respondent took part, as far as this information is needed for planning of the scope of men and women condoms, intended for free distribution within specialized preventive programs.

At average, during the month before interviewing respondents had with all the male partners 10 sexual contacts in anal sex and 9 sexual contacts in oral sex (see Table 31). These average numbers

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[18] Here and further we will use the following terms which are close but not the same: 1) *the number of sexual partners* is a number of people with whom the respondent had at least one interaction which by both of its participants is considered to be a sexual contact (oral, anal, vaginal sex, etc.); 2) *the number of sexual contacts/ acts* is a number of such interactions either with one or with several partners. In this subsection the contact should be determined as the contact between men while heterosexual contacts will be described in the some of the other subsections.

[19] Commercial partners who were among the partners of some respondents for this period will be analyzed in a separate subsection.

don't differ in the groups of clients and non-clients of the MSM-services. Besides, clients and non-clients considerably differ by the maximum indicators – those, who have less intensive sexual life, actually belong to the clients of HIV-servicing programs.

Table31.Main statistical characteristics of the number of sexual partners of MSM

«How many sexual contacts with all your male partners have you had within the last 30 days?»	**Average**	**Mini mum**	**Maximum**	
			Client of MSM-service	**Non-clients of MSM-service**
Anal (receptive sex)	5	0	90	330
Anal (insertive sex)	5	0	99	150
Oral	9	0	106	200

The average number of contacts among the respondents who belong to the age group under 25 and 25+ years of age differs quite slightly. At the same time, groups of respondents with different marital status demonstrate the differences: thus, the married had at average 3 passive, 4 active and 6 oral sexual intercourses, the divorced and widowed had 4, 5 and 8 respectively, and those who have never been married had 5, 5 and 9 sexual contacts respectively. The same difference is observed between the groups of respondents with various identities: the average number of passive acts during the month among homosexuals was 6, among bisexuals it was 3 and among heterosexuals it was 3 as well. The average number of active sexual contacts is 5, 5 and 3 among homo-, bi- and heterosexuals respectively.

The attitude to religion and the experience of being imprisoned are not connected with the number of contacts of different types.

During the last sex with a male partner the respondents had from 0 to 12 (*sic!*) anal sexual contacts (at average, 2). This number is not connected with age, official and actual marital status, education, financial status, religiosity, the experience of being imprisoned and sexual orientation

2.1.3. Commercial sex

As it was mentioned above, 269 MSM or 5% of them received payments for sex and 162 men or 3% reported that during the month before interviewing they paid another man for sex in this or that way. Further in the text, the first group of men will be marked as MSW (male sex workers) and the second group of men will be the clients of MSW.

MSW. At average, MSW have had four male partners for payments (min 1, max 60) within this period. The average number of male partners of MSW-clients and MSW-non-clients doesn't differ.

The average age of MSW is 25 years old and doesn't differ in subgroups with different frequency of providing commercial sex services ($p \geq 0.7$). The vast majority (91%) of MSW have never been married, half (55%) of them live with parents or relatives and 35% live separately. Two thirds (67%) have only secondary education, 8% have experience of being imprisoned (this number is doubled comparing with the general number in the sample, $p = 0.001$, see Table 14). Exceptionally the men are attractive in sexual context for 54% of MSW (it is a slightly lower indicator than in the whole sample, see Table 17) and 60% describe their sexual orientation with the term ~~–h~~omosexual" (this indicator is also slightly lower than in the whole sample, see Table 20). 51% of MSW characterized their financial status as poor, while totally in the whole sample 2 times less of MSM belong to the group of poor (26%, see Table 8). Concerning the religiousity of MSW comparing with all the interviewed respondents, no peculiarities were observed.

74% of MSW use Internet with the aim of search for male partners, while for the whole sample this indicator makes 63%.

During the last six months the largest part (71%) male sex workers worked one time a week or even

less often (see Table 32).

Table32.Distribution of respondent MSW by the frequency of sex services provision and average age of certain subgroups

«How often have you provided commercial sex services within the last 6 months?»	**%, N = 251**		**Average age (95% CI), years**
Every day	2		25.5 (20.6–30.4)
2–3 times a week	26		24.8 (23.2–26.3)
Once a week	16	71	23.0 (21.7–24.3)
2–3 times a month	29		24.7 (23.0–26.3)
Less than once a month	26		25.4 (23.4–28.5)

During the last 7 days, when respondents provided sexual services for payments, the number of commercial anal sexual contacts made at average three (min 1, max 10), that statistically doesn't differ from the number of anal sexual contacts of all the interviewed MSM during the week. During the last week in most of the cases (49% of cases) MSW provided sexual services one day.

Clients of the MSW. At average, clients of the MSW during a week had two male partners, to whom they paid (min 1, max 11), while the average numbers of commercial partners slightly differ among the clients and non-clients of the MSM-services (3 and 2 respectively).

The average age of clients of MSW is 34 years old which considerably differs from the average age of the whole sample (28 years, see above). 21% of respondents from this group are officially married (it can be compared with 5% of the married among the rest of the respondents), 76% have inclomplete or complete higher education, 62% belong to the wealthy people, slightly less than a half (48%) characterize their sexual orientation with a term ~~"b~~isexual" and 8% with a term ~~"h~~eterosexual".

2.1.4. Use of condoms and lubricants during homosexual contacts

The use of condoms. The part of MSM, who used condoms during the last anal sexual contact with a male partner, is one of the national indicators of success in HIV-preventive programs[20]. According to the research results, 71% of MSM during the last time had protected anal sex with a man.

The main factors connected with the condom use during last anal sex with a man is living with a male partner, official or actual living with a female partner, the experience of being imprisoned and affiliation to the number of clients the MSM-services (see Table 33).

Thus, the least often a condom was used by the MSM who live with a male partner (and on the contrary, the most often the condom was used by the respondents who live with a female partner). Comparing with respondents who have never been imprisoned those MSM who have such experience use condoms less often. And finally, non-clients of the MSM-service also appear to be in the risk situations more often comparing with the clients. The rest of socially-demographical parameters either are not connected at all or are connected quite slightly.

Table33.National indicator «Condom use during last anal sex with a male partner», %, with disaggregation by main social and demographic parameters (weighted by age groups "under 25

[20] BALAKIREVA O.M and others. Methodological Recommendations on Conduction of Researches for Monitoring of the Country's Response to the Epidemic of HIV-Infection [Text] / O. M. BALAKIREVA, L. V. BOCHKOVA, M. Y. VARBAN, G. V. DOVBAKH, N. B. POGORILA, T. O. SALIUK, I. A. SHVAB. — K.:MBF «International HIV/AIDSAlliancein Ukraine», 2008. — P. 65–69.

years of age" and "of 25+ years of age")

Characteristics	%
All who have had anal sex with a male partner within the last 6 months, N = 5636	**71**
Age, p = 0.035	
14–24 years, N = 2232	69
25 years and older, N = 3287	72
Official marital status, p < 0.001	
Have never been married, N = 4446	70
Officially married, N = 388	78
Divorced or widowed, N = 684	72
Actual marital status, p < 0.001	
Lives with a male partner, N = 857	48
Lives with a female partner, N = 437	79
Lives with parents or relatives, N = 2316	73
Lives alone, N = 1909	76
Education, p = 0.609	
Incomplete secondary, N = 160	66
Complete secondary, N = 605	71
Vocational secondary, N = 1658	71
Incomplete higher, N = 1198	69
Higher or a scientific degree, N = 1898	71
Financial status, p = 0.168	
Poor, N = 1422	70
Middle wealth, N = 2614	70
Wealthy, N = 1484	72
Experience of being imprisoned, p = 0.094	
Have, N = 211	64
Do not have, N = 5303	71
Sexual attractiveness of people of different sex, p < 0.001	
Only men, N = 3117	68
Mostly men, but sometimes women, N = 1300	73
Both men and women, N = 723	74
Mostly women, but sometimes men, N = 347	78
Belonging to clients of MSM-service, p < 0.001	
Client, N = 1242	79
Non-client, N = 4252	68
Note:all p-values are calculated from testχ^2	

Models of the condom use during the last sex with different types of partners vary. Thus, having sex with a permanent partner 62% of the MSM who have such a partner or partners used a condom. With casual partners 79% of respondents used condoms and with commercial partners 86% and 78% (of those who received payments or paid themselves respectively) used condoms.

Regional values of this indicator are presented in the table 34[21]. It should be mentioned that indicators of homophily in most of the cases are close to zero, i.e. the received local samples were not homogeneous according to the level of condom usage.

Table34.Regional values of the indicator «Condom use during last anal sex with a male partner»

City	% in estimated population proportion	% in sample	Homophily	95% CI
Khmelnytskyi	76	75	0,114	64.9–86.3
Zhytomyr	53	48	-0.017	41.6–67.1
Ivano-Frankivsk	89	88	-0.003	83.3–94.5
Kirovograd	63	64	0.151	55.8–76.8
Kryvyi Rig	65	63	-0.017	54.4–73.9
Lviv	81	79	-0.036	74.5–86.4
Lutsk	73	66	0	66.1–81.5
Rivne	69	69	0.108	61.1–76.9
Zaporizhya	78	72	-0.097	70.2–84.9
Sevastopol	63	65	0.067	52.5–72.7
Sumy	67	67	-0.028	57.8–72.2
Chernigiv	71	74	0.122	60.4–77.3
Chernivtsi	69	75	0.36	56.6–77.8
Ternopil	97	95	0.022	94.5–98.5
Uzhgorod	98	99	0.259	95.2–99.5
Poltava	79	77	-0.025	75.8–86.4
Vinnytsya	57	56	0.097	47.7–67.1
Cherkasy	67	71	0.111	59.6–73
Simferopol	72	76	0.199	61.3–80.9
Dnipropetrovsk	21	23	0.209	15.1–27
Donetsk	72	73	0.281	63.4–78.6
Kharkiv	63	59	-0.042	56.8–67.7
Kherson	50	48	-0.038	44.1–57.2
Kyiv	73	75	0.057	65.8–79.6

[21] Please see the regional indicators with desegregation according to the age in Appendix 4

Luhansk	63	64	0.206	54–71.8
Mykolayiv	82	82	0.046	74.1–86.1
Odesa	84	81	-0.004	76.6–89.4

Among the reasons for non-use of condoms, named by the respondents, the most popular (see Table 35) are confidence in the fact that partners are healthy (in the case of sexual contacts with permanent partners), non-availability of condoms at the moment, and the fall of sensibility. In the case of commercial sex usually condoms are used.

Table35.Reasons for non-use of condoms with different types of male partners during last anal sex, %

Reason	During last sexual contact with ...			
	permanent	**casual**	**commercial (respondent paid for sex)**	**commercial (respondent was paid for sex)**
Had no condom / no condom within easy reach	1	4	<1	<1
Condom use reduces sensitivity	5	5	<1	<1
Condoms are too expensive	<1	1	0	<1
The partner insisten on non-use of condoms	1	2	<1	1
I am sure that both my partner and I are healthy	18	2	0	<1
I was under the influence of alcohol	1	2	<1	<1
I was under the influence of drugs	<1	0	0	0
I became a victim of sexual violence	<1	0	0	<1
Other	<1	0	<1	<1
Note: Sum by columns is bigger than 100%, because a respondent could choose several options				

Among the other options there were named the following ones: ~~–t~~here was a few sexual contacts with only one condom" ~~–d~~idn't think about it" and ~~–t~~he condom tore" (with a permanent male partner) etc.

The other indictor is a part of MSM who have always used condoms during sexual contacts with a male partner during the last 30 days. According to our data (see Table 36) 49% of men who reported that they had sexual contacts with a male partner during the last 30 days, always used condoms (in anal sex). This indicator is lower than it was in 2009 but it should be mentioned that the today's interviewing for the first time covered the whole territory of Ukraine including the cities where in 2009 it wasn't conducted and where there's no preventive programs.

The part of those MSM who always used condoms is lower among subgroups of MSM with the following characteristics: being at the age of 20-24 years old, are not officially married at the moment of interviewing, live with a male partner, have a medium level of income and are not the clients of MSM-projects. Multivariate analysis of factors associated with the systematical usage of condoms is presented in tables 37, 38.

It should be emphasized that at the same level as with the indicator ~~–C~~ondom use during last anal sex with a male partner", the married MSM look considerably safer comparing with the single and

those who live with men. Condoms are practically always used by respondents with casual and commercial partners while with permanent partners condoms are rarely used.

With female partners (detailed information about heterosexual experience of MSM is presented in paragraph 2.2) as well as with permanent male partners the condoms are not systematically used. Thus, we can assert that people don't use condoms with those partners who they consider to be the main partners (independently from the sex) and use condoms having sex with the secondary partners.

Considerable differences are observed in frequency of the condom use with different categories of male partners. Thus, the mostly condoms are used by MSM in the cases when they pay for the sex to another man and rarely in the cases when they have sex with permanent partners.

Table36.Indicator «Condom use during last anal sex with a male partner within the last 30 days» (have always used), %, with disaggregation by main social, demographic and some behavioural parameters

Characteristics	%
All who have had anal sex with a male partner within the last 30 days, N = 5435	49
Age, p = 0.040 [a)]	
14–19 years, N = 510	55
20–24 years, N = 1713	45
25 years and older, N = 3212	51
Official marital status, p < 0.001	
Have never been married, N = 4522	49
Officially married, N = 282	61
Divorced or widowed, N = 631	48
Actual marital status, p < 0.001	
Lives with a male partner, N = 947	33
Lives with a female partner, N = 301	62
Lives with parents or relatives, N = 2309	52
Lives alone, N = 1878	53
Education, p = 0.566	
Incomplete secondary, N = 150	47
Complete secondary, N = 630	49
Vocational secondary, N = 1615	51
Incomplete higher, N = 1155	49
Higher or a scientific degree, N = 1885	48
Financial status, p < 0.001	
Poor, N = 1438	53
Middle wealth, N = 2535	47
Wealthy, N = 1462	51
Experience of being imprisoned, p = 0.725	

Have, N = 177	50
Do not have, N = 5250	49
Sexual attractiveness of people of different sex, p < 0.001	
Only men, N = 3360	49
Mostly men, but sometimes women, N = 1240	46
Both women and men, N = 613	54
Mostly women, but sometimes men, N = 203	64
Belonging to clients of MSM-service, p < 0.001	
Client, N = 1382	56
Noin-client, N = 4031	47
Category of partner, p < 0.001	
Permanent, N = 3939	44
Casual, N = 3911	59
Commercial (respondent paid for sex), N = 237	79
Commercial (respondent was paid for sex), N = 254	59
City, p < 0.001	
Vinnytsia, N = 140	33
Dnipropetrovsk, N = 333	3
Donetsk, N = 375	58
Zhytomyr, N = 135	22
Zaporizhzhia, N = 162	64
Ivano-Frankivsk, N = 149	87
Kyiv, N = 324	51
Kirovograd, N = 117	55
Kryvyi Rig, N = 147	32
Lugansk, N = 190	48
Lutsk, N = 149	52
Lviv, N = 250	64
Mykolaiv, N = 342	64
Odesa, N = 396	55
Poltava, N = 190	31
Rivne, N = 149	62
Simferopol, N = 197	30
Sevastopol, N = 147	33
Sumy, N = 175	39
Ternopil, N = 149	87
Uzhgorod, N = 150	97
Kharkiv, N = 299	25

Kherson, N = 204	37
Khmelnytskyi, N = 98	51
Cherkasy, N = 220	61
Chernivtsi, N = 127	77
Chernigiv, N = 131	49
Note:a) all p-valuesare calculated from testχ^2	

As it was mentioned above, there is a complicated interaction between the factors which influence the frequency of condom use. Thus, marital status is connected with age and sexual attractiveness of people of different sexes for the respondents and the affiliation to the clients of MSM-services is evidently connected with the city. Therefore, there is a need to implement a multivariate analysis.

All the listed in the table 36 variables, the connection of which with the researched one is statistically credible at the level of $p < 0.2$, as well as the other connected with them variables were included into the initial model which was further simplified. The remaining variables were processed by the means of regression analysis, the results are presented in table 37 (the model is constructed on the basis of 5435 questionnaires with the exception of missing answers).

Table37.Results of multivariate analysis of factors associated with <u>regular</u> condom use with a male partner within the last month (the answer "always used")

Variable	OR	AOR [в)] (95% CI)
City (ref. [а)] = Vinnytsia), p < 0.001 [б)]		
Dnipropetrovsk	*0.1*	*0.1 (0.0–0.1)*
Donetsk	*2.9*	*3.2 (2.1–4.9)*
Zhytomyr	*0.6*	*0.5 (0.3–0.9)*
Zaporizhzhia	*3.6*	*4.2 (2.6–6.9)*
Ivano-Frankivsk	*13*	*14 (7.7–26)*
Kyiv	*2.1*	*2.0 (1.3–3.1)*
Kirovograd	*2.5*	*2.8 (1.7–4.7)*
Kryvyi Rig	1.5	1.4 (0.8–2.3)
Lugansk	*1.9*	*1.9 (1.2–3.1)*
Lutsk	*2.2*	*2.3 (1.4–3.7)*
Lviv	*3.4*	*4.7 (3.0–7.3)*
Mykolaiv	*3.5*	*3.1 (2.0–4.9)*
Odesa	*2.5*	*2.6 (1.7–4.0)*
Poltava	0.9	0.8 (0.5–1.3)
Rivne	*3.4*	*3.8 (2.3–6.3)*
Simferopol	0.9	0.8 (0.5–1.2)
Sevastopol	1.0	1.2 (0.7–1.9)
Sumy	1.3	1.6 (1.0–2.5)
Ternopil	*13*	*19 (10–35)*
Uzhgorod	*75*	*114 (39–329)*

Kharkiv	0.7	0.7 (0.4–1.1)
Kherson	1.2	1.2 (0.7–1.9)
Khmelnytskyi	*2.1*	*1.9 (1.1–3.3)*
Cherkasy	*3.2*	*2.5 (1.6–4.1)*
Chernivtsi	*6.3*	*5.5 (3.2–9.6)*
Chernigiv	*2.0*	*2.2 (1.3–3.6)*
Is a client of MSM-service (ref. = Yes), p < 0.001		
No	*0.7*	*0.6 (0.5–0.7)*
Refused to answer	1.1	1.1 (0.4–2.6)
Financial status (ref. = Poor), p < 0.001		
Middle wealth	0.8	0.9 (0.8–1.1)
Wealthy	0.9	1.2 (1.0–1.5)
Actual marital status (ref. = Lives with a male partner), p < 0.001		
Lives with a female partner	*3.3*	*3.4 (2.5–4.6)*
Lives alone	*2.3*	*2.2 (1.8–2.6)*
Lives with parents or relatives	*2.2*	*1.8 (1.5–2.2)*
«Who did you have last anal sex with?» (ref. = With a permanent partner [a man you have relationship with]), p < 0.001		
With a casual partner (a man you do not have relationship with, but had casual or one-time sex)	*1.3*	*1.6 (1.4–1.9)*
With a commercial partner (you paid for sex)	*2.0*	*2.1 (1.3–3.6)*
With a commercial partner (you were paid for sex)	*1.3*	*1.6 (1.1–2.4)*
Notes:а) ref. means category for which values of OR and AOR of other categories are calculated б) p-value is calculatedfrom LR-test; в) AOR (adjusted odds ratio) — is thevalueof the ratio ofoddsof an eventin the presence ofa certain predictor, which takes into account theeffectof otherpredictors		

Evidently, the most significant will be variable –The city", as far as the scope of MSM in Ukraine is geographically non-homogeneous. Therefore, including or excluding this variable will influence the significance of those variables which are also connected with the city (see Table 38).

Table38.Results of multivariate analysis of factors associated with <u>regular</u> condom use with a male partner within the last month (the answer "always used"), without taking into account the variable "City"

Variable	**OR**	**AOR [в)] (95% CI)**
Age (ref. [а)] = 14–24 years), p < 0.001 [б)]		
25 years and older	*1.1*	*1.2 (1.1–1.4)*
Financial status (ref. = Poor), p < 0.001		
Middle wealth	*0.8*	*0.8 (0.7–0.9)*
Wealthy	0.9	1.0 (0.8–1.1)
Actual marital status (ref. = Lives with a male partner), p < 0.001		
Lives with a female partner	*3.3*	*2.9 (2.1–4.0)*

Lives alone	*2.3*	*2.4 (2.1–2.9)*
Lives with parents or relatives	*2.2*	*2.5 (2.1–2.9)*
Sexual attractiveness of people of different sex (ref. = Only men), p < 0.001		
Mostly men, but sometimes women	0.9	0.8 (0.7–1.0)
Both men and women	1.2	1.0 (0.9–1.3)
Mostly women, but sometimes men	*1.9*	*1.5 (1.1–2.1)*
Only women	0.5	0.5 (0.1–2.5)
Haven't decided yet	1.2	1.1 (0.4–3.3)
Is a client of MSM-service (ref. = Yes), p < 0.001		
No	*0.7*	*0.6 (0.5–0.7)*
Refused to answer	1.1	1.3 (0.5–3.1)
Notes:а) ref. means category for which values of OR and AOR of other categories are calculated б) p-value is calculated from LR-test; в) AOR (adjusted odds ratio) — is thevalueof the ratio ofoddsof an eventin the presence ofa certain predictor, which takes into account theeffectof otherpredictors		

As it is noticed, variable –The city" doesn't influence the significance of connections between systematic usage of condoms and such variables as –Being a client of MSM-services" and –Actual marital status". Thus, participation in preventive programs and absence of a permanent male partner increase the chances to systematically and consequently observe the rules of safer sex.

Possibly such factors as affiliation to the group of clients and marital status are connected with each other as far as MSM usually address the organization for the following reasons: firstly, for free condoms; secondly, with the aim to be among –the same" people and, possibly, to get acquainted with somebody. It is confirmed by the fact that without consideration of the variable –The city", there appears a positive association between the usage of condoms and the age 25+ (older men more often become the NGO clients, they have more conscious attitude towards their health and are more often married or live separately from their parents).

The usage of lubricates. Beside the condoms the usages of additional lubricate can also decrease the risks as far as it lowers the traumatism of sex and the risk of the condom breaking.

For the last 6 months 54% of respondents always used special lubricate in anal sex with a male partner (see Table 39). The frequency of it depends on the marital status (single and those who live with a male partner are more consequent in usage of a special lubricate comparing with other groups), level of education (among the more educated people most of them always use the lubricate), the experience of being imprisoned, sexual orientation and affiliation to the clients of MSM-services.

Evidently, the frequency of usage of a special lubricate depends on the same factors as the frequency of usage of condoms.

Table39.Have always used special lubricate during anal sex with a male partner within the last 6 months, %, with disaggregation by main social, demographic and some behavioural parameters

Characteristics	%
All who have had anal sed woth a male partner within 6 months, N = 5779	54
Age, p = 0.140 [a)]	
14–24 years, N = 2369	53

25 years and older, N = 3410	54
Official marital status, p < 0.001	
Have never been married, N = 4797	55
Officially married, N = 305	48
Divorced or widowed, N = 677	47
Actual marital status, p < 0.001	
Lives with a male partner, N = 967	60
Lives with a female partner, N = 333	47
Lives with parents or relatives, N = 2476	52
Lives alone, N = 2003	54
Education, p < 0.001	
Incomplete secondary, N = 166	43
Complete secondary N = 685	47
Vocational secondary, N = 1735	55
Incomplete higher, N = 1222	53
Complete higher or a scientific degree, N = 1971	56
Financial status, p < 0.001	
Poor, N = 1513	54
Middle wealth, N = 2709	52
Wealthy, N = 1557	56
Experience of being imprisoned, p < 0.001	
Yes, N = 196	31
No, N = 5574	55
Sexual attractiveness of people of different sex, p < 0.001	
Only men, N = 3514	58
Mostly men, but sometimes women, N = 1320	51
Both men and women, N = 669	44
Mostly women, but sometimes men, N = 250	40
Belonging to clients of MSM-service, p < 0.001	
Client, N = 1483	64
Non-client, N = 4273	50
Have *always* used condoms during anal sex with a male partner within 30 days, p < 0.001	
Yes, N = 2675	69
No, N = 2756	39
City, p < 0.001	
Vinnytsia, N = 149	46
Dnipropetrovsk, N = 346	19
Donetsk, N = 399	65

Zhytomyr, N = 142	35
Zaporizhzhia, N = 192	65
Ivano-Frankivsk, N = 150	32
Kyiv, N = 375	69
Kirovograd, N = 145	46
Kryvyi Rig, N = 150	54
Lugansk, N = 199	50
Lutsk, N = 150	29
Lviv, N = 250	71
Mykolaiv, N = 370	71
Odesa, N = 400	65
Poltava, N = 200	49
Rivne, N = 150	50
Simferopol, N = 200	59
Sevastopol, N = 149	32
Sumy, N = 186	53
Ternopil, N = 150	94
Uzhgorod, N = 150	96
Kharkiv, N = 300	50
Kherson, N = 226	50
Khmelnytskyi, N = 126	29
Cherkasy, N = 240	65
Chernivtsi, N = 148	46
Chernigiv, N = 137	1
Note: a) all p-values are calculated from test χ^2	

During the last anal sex with a male partner a special lubricate was used by 77% of MSM (see Table 40) which is a higher indicator comparing with the one which indicates the use of condoms (table 33).

The main factors connected with the usage of a special lubricate in the last anal sex with a male partner is living with a male partner, higher education, medium or high financial status, the absence of experience of being imprisoned, sensing the men as erotical objects (it, probably, correlates with the joint living with a man), affiliation to the number of clients of MSM-services and the usage of condoms in the last anal sex.

Table40.Used special lubricate during last anal sex with a male partner, %, with disaggregation by main social, demographic and some behavioural parameters

Characteristics	**%**
All who had anal sex with a amle partner, N = 5809	77
Age, p = 0.678 [a)]	
14–24 years, N = 2379	77

25 years and older, N = 3430	77
Official marital status, p < 0.001	
Have never been married, N = 4814	78
Officially married, N = 310	70
Divorced or widowed, N = 685	69
Actual marital status, p < 0.001	
Lives with a male partner, N = 970	81
Lives with a female partner, N = 336	69
Lives with parents or relatives, N = 2487	76
Lives alone, N = 2016	78
Eduation, p < 0.001	
Incomplete secondary, N = 167	59
Complete secondary, N = 692	71
Vocational secondary, N = 1738	77
Incomplete higher, N = 1229	77
Complete higher or a scientific degree, N = 1983	81
Financial status, p = 0.212	
Poor, N = 1521	75
Middle wealth, N = 2716	78
Wealthy, N = 1572	78
Experience of being imprisoned, p < 0.001	
Yes, N = 201	54
No, N = 5599	78
Sexual attractiveness of people of different sex, p < 0.001	
Only men, N = 3520	81
Mostly men, but sometimes women, N = 1324	75
Both men and women, N = 676	67
Mostly women, but sometimes men, N = 259	65
Belonging to clients of MSM-service, p < 0.001	
Client, N = 1484	83
Non-client, N = 4302	74
Used condoms *during last anal sex* with a male partner, p < 0.001	
Yes, N = 3938	84
No, N = 1685	63
City, p < 0.001	
Vinnytsia, N = 150	73
Dnipropetrovsk, N = 345	69
Donetsk, N = 399	75

Zhytomyr, N = 150	65
Zaporizhzhia, N = 190	82
Ivano-Frankivsk, N = 150	66
Kyiv, N = 369	86
Kirovograd, N = 150	71
Kryvyi Rig, N = 150	75
Lugansk, N = 200	71
Lutsk, N = 150	61
Lviv, N = 250	93
Mykolaiv, N = 371	86
Odesa, N = 400	93
Poltava, N = 200	77
Rivne, N = 150	86
Simferopol, N = 200	87
Sevastopol, N = 150	62
Sumy, N = 192	69
Ternopil, N = 150	93
Uzhgorod, N = 150	100
Kharkiv, N = 300	74
Kherson, N = 228	72
Khmelnytskyi, N = 127	56
Cherkasy, N = 240	83
Chernivtsi, N = 148	69
Chernigiv, N = 150	30
Note:a) all p-values are calculated from test χ^2	

Among the reasons of non-use of lubricates the most popular are (table 41): the non-availability of it at the moment and the lack of necessity in using it. It means that the distribution of lubricates by the means of MSM-projects and the active educational activity will have a considerable influence on the decrease of traumatism in sex as well as may be a factor of involvement of people to the corresponding preventive programs.

Table41.Reasons for non-use of lubricates during last anal sex with a male partner

«Why didn't you use special lubricates during your last anal sexual contact (insertive or receptive)?»	**%, N = 1054**
Had no lubricant / no lubricant within easy reach	*53*
Do not consider it necessary to use lubricant	*24*
Lubricants are too expensive	8
Do not like with lubricants	7
I was under the influence of alcohol	6

Did not think about that	6
Do not know where to get it	3
Was uncomfortable with offering it to my partner	3
I was under the influence of drugs	0
Note: Sum by columns is bigger than 100%, because a respondent could choose several options	

2.2. History of heterosexual relations

2.2.1. General description of sexual relations with women

Over half of respondents (54%) ever engaged in heterosexual relations. Out of this number, half of the men did not have any sexual relations with a female partner within six months. The rest had relations on average with one partner (min 1, max 40).

The average number of female partners is the same in different age groups (under 25s and 25 and over), groups of different economic status, different personal religious believes, among clients and non-clients of MSM service organisations, however, it somewhat differs (p = 0.001) within groups of different official marital status: married men had contact with two female partners whereas unmarried and divorces respondents contacted with one woman within six months. There are differences in the average number of female partners within six months in groups with diverse sexual preferences and history of serving time in prison, e.g., bisexual and heterosexual men compared to homosexuals had contact with two women, men with history of serving time in prison – two as well.

Among MSM with history of heterosexual relations 306 respondents or 5% reported having sexual relations with female commercial sex workers. These respondents also on average had two female partners within the last six months, the average age of these men is somewhat higher (31) compared to the whole sub-sample of MSM with history of heterosexual relations (29).

Curiously, among MSM who purchased services from FSW there are twice as many married men and men sharing a household with a female partner, compared to men who never turned to FSW (see Table 42), and fourfold more men with history of serving time in prison. Naturally, these would include men who are well off, and who identify themselves as bisexual and heterosexual, the number also includes fewer clients of MSM service organisations.

There were no specifics identified in relation to religious beliefs.

Table 42. Used sexual services of women who provide sex for reward within the last 12 months, %, with disaggregation based on key social and demographic and some behavioural characteristics

Characteristics	%
All, who had sex with a female partner within six months, N = 3232	9
Age, p = 0.001 [a)]	
14–24, N = 1008	7
25 and over, N = 2224	11
Official marital status, p < 0.001	
Never been married, N = 2212	7
Officially married, N = 321	17
Divorced or widowed, N = 699	13
Real marital status, p < 0.001	
Live with a male partner, N = 527	5
Live with a female partner, N = 350	18
Live with parents/family, N = 1154	8
Live alone, N = 1201	11
Education, p = 0.729	

Completed high school education, N = 362	8
Vocational school education, N = 926	10
Uncompleted higher education, N = 583	10
Higher education or scientific degree, N = 1269	9
Economic status, p < 0.083	
Economically deprived, N = 723	8
Average income, N = 1486	9
High income, N = 1023	11
History of serving time in prison, p < 0.001	
Been to prison, N = 170	29
Never been to prison, N = 3054	8
Sexual preferences in regard to different gender, p < 0.001	
Men only, N = 1097	2
Mostly men, but sometimes women, N = 1155	9
Equally men and women, N = 685	16
Mostly women, but sometimes men, N = 274	23
Client of MSM service NGO, p < 0.001	
Client, N = 819	6
Non-client, N = 2393	11
City, p < 0.001	
Vinnytsya, N = 97	5
Dnipropetrovsk, N = 170	1
Donetsk, N = 225	8
Zhytomyr, N = 100	12
Zhaporizhzha, N = 116	5
Ivano-Frankivsk, N = 91	8
Kyiv, N = 194	2
Kirovograd, N = 121	16
Kryviy Rig, N = 66	6
Lugansk, N = 51	0
Lutsk, N = 121	12
Lviv, N = 37	11
Mykolayiv, N = 207	8
Odesa, N = 152	3
Poltava, N = 127	7
Rivne, N = 112	2
Simpheropol, N = 109	1
Sebastopol, N = 107	23

Sumy, N = 128	12
Ternopil, N = 44	9
Uzhgorod, N = 10	10
Kharkiv, N = 222	17
Kherson, N = 181	8
Khmelnitsky, N = 88	16
Cherkasy, N = 158	4
Chernivtsy, N = 111	14
Chernigiv, N = 87	9
Note: a) all p values are calculated based on χ^2 test	

2.2.2. Condom use during heterosexual contacts

Two thirds of MSM with history of heterosexual relations used a condom during the last sexual intercourse with a woman (see Table 43). It is worth mentioning that 69% out of the number of MSM with history of heterosexual relations used a condom during the last anal encounter with a man, which does not differ greatly (p = 0.05) from a proportion of MSM who used a condom during the last sexual contact with a woman (66%).

Key factors influencing condom use in heterosexual relations are age (older respondents use condoms more often), relationship status (e.g., married or live with a partner) as a result condoms are used more often, woman's sex appeal (the more respondent is attracted to women, the more likely he is to report condom use), client/con-client of MSM service organisation (NGO clients are less likely to use condoms with women compared to non-clients) and condom use during the last anal sex with a male partner (among those who used a condom with a male partner there would be less respondents who used a condom with a female partner). Other social and demographic characteristics are insignificant.

Evidently, all of these factor focus around the marital status issue, i.e., married men and men living with a female partner are of a higher average age, less often use services of MSM organisations and tend to be more sexually attracted to women.

However, there is a tricky issue of ~~"d~~iscrepancy between condoms use with men and condom use with women", but as it had been said before, in general married men and men sharing a household with a woman overall demonstrate higher condom use rates with male partners.

Table 43. Condom use during the last sexual encounter with a female partner, %, with disaggregation based on key social and demographic and some behavioural characteristics

Characteristics	%
All, who had sex with a female partner within six months, N = 1538	66
Age, p < 0.001 [a)]	
14–24, N = 502	76
25 and over, N = 1036	62
Official marital status, p < 0.001	
Never been married, N = 922	76
Officially married, N = 289	32
Divorced or widowed, N = 327	71

Real marital status, p < 0.001	
Live with a male partner, N = 109	79
Live with a female partner, N = 332	35
Live with parents/family, N = 569	72
Live alone, N = 528	77
Education, p = 0.723	
Completed high school education, N = 202	64
Vocational school education, N = 437	65
Uncompleted higher education, N = 283	72
Higher education or scientific degree, N = 569	66
Economic status, p = 0.684	
Economically deprived, N = 355	64
Average income, N = 688	68
High income, N = 495	67
History of serving time in prison, p = 0.806	
Been to prison, N = 118	64
Never been to prison, N = 1414	67
Sexual preferences in regard to different gender, p < 0.001	
Men only, N = 95	83
Mostly men, but sometimes women, N = 578	76
Equally men and women, N = 585	61
Mostly women, but sometimes men, N = 261	51
Client of MSM service NGO, p = 0.002	
Client, N = 299	76
Non-client, N = 1231	64
Used condom during the *last anal sexual encounter* with a male partner, p < 0.001	
Yes, N = 1042	74
No, N = 356	47
City, p < 0.001	
Vinnytsya, N = 52	40
Dnipropetrovsk, N = 32	81
Donetsk, N = 116	57
Zhytomyr, N = 60	55
Zhaporizhzha, N = 41	59
Ivano-Frankivsk, N = 47	81
Kyiv, N = 53	74
Kirovograd, N = 82	54
Kryviy Rig, N = 24	75

Lugansk, N = 28	68
Lutsk, N = 67	63
Lviv, N = 12	83
Mykolayiv, N = 83	70
Odesa, N = 62	92
Poltava, N = 77	69
Rivne, N = 44	59
Simpheropol, N = 44	68
Sebastopol, N = 49	61
Sumy, N = 101	78
Ternopil, N = 12	67
Uzhgorod, N = 2	100
Kharkiv, N = 105	58
Kherson, N = 70	61
Khmelnitsky, N = 59	58
Cherkasy, N = 64	48
Chernivtsy, N = 70	79
Chernigiv, N = 82	90
Note: a) all p values are calculated based on χ^2 test	

Among explanations for not using a condom with a female partner following reasons are cited the most (see Table 44): confidence in personal health and partner's health and also decreased sensitivity. Its worth noting that contrary to reasons cited for not using condoms with male partner during sex also one tenth of respondents reported being under the influence of alcohol during sex with a female partner.

Table 44. Reasons for not using a condom during the last sexual encounter with a female partner

—Why didn't you use a condom during the last sexual contact with a woman?"	**%, N = 530**
I am sure that I and my female partner are healthy	*55*
Condom use decreases sensitivity	*27*
I was under the influence of alcohol	9
My partner insisted on not using a condom	7
Did not have a condom/did not have it handy	1
Condoms are too expensive	1
I was under the influence of drugs	<1
I was subjected to sexual violence	<1
Note: the sum of values is over 100%, meaning that the respondents could choose several responses	

Those MSM who *always* used condoms during sexual contacts with women within six months (47%) have a somewhat different profile compared to those who used condoms during the last heterosexual contact, i.e., the group would include more youth, less married men and those sharing a household with a woman, more well off men and those who are generally attracted to men, clients of MSM service organisations and those who always use condoms during anal sex with a man (see Table 45).

Table 45. Always used a condom during sexual contact with a female partner during six months, %, with disaggregation based on key social and demographic and some behavioural characteristics

Characteristics	%
All, who had sex with a female partner within six months, N = 1565	47
Age, p < 0.001 [a)]	
14–24, N = 508	54
25 and over, N = 1057	43
Official marital status, p < 0.001	
Never been married, N = 941	54
Officially married, N = 290	21
Divorced or widowed, N = 334	50
Real marital status, p < 0.001	
Live with a male partner, N = 115	65
Live with a female partner, N = 333	23
Live with parents/family, N = 579	50
Live alone, N = 538	55
Education, p = 0.001	
Completed high school education, N = 204	47
Vocational school education, N = 445	45
Uncompleted higher education, N = 284	48
Higher education or scientific degree, N = 583	48
Economic status, p < 0.001	
Economically deprived, N = 356	43
Average income, N = 704	46
High income, N = 505	50
History of serving time in prison, p < 0.001	
Been to prison, N = 117	43
Never been to prison, N = 1441	47
Sexual preferences in regard to different gender, p < 0.001	
Men only, N = 114	69
Mostly men, but sometimes women, N = 582	55

Equally men and women, N = 588	41
Mostly women, but sometimes men, N = 262	32
Client of MSM service NGO, p < 0.001	
Client, N = 305	56
Non-client, N = 1252	44
***Always* used a condom during anal sexual contact with a male partner during 30 days, p < 0.001**	
Yes, N = 721	62
No, N = 635	34
City, p < 0.001	
Vinnytsya, N = 60	38
Dnipropetrovsk, N = 32	53
Donetsk, N = 122	47
Zhytomyr, N = 64	45
Zhaporizhzha, N = 41	51
Ivano-Frankivsk, N = 48	42
Kyiv, N = 52	52
Kirovograd, N = 82	38
Kryviy Rig, N = 24	71
Lugansk, N = 28	57
Lutsk, N = 70	34
Lviv, N = 12	50
Mykolayiv, N = 83	64
Odesa, N = 62	86
Poltava, N = 76	29
Rivne, N = 44	50
Simpheropol, N = 46	57
Sebastopol, N = 49	39
Sumy, N = 101	45
Ternopil, N = 12	58
Uzhgorod, N = 2	50
Kharkiv, N = 107	33
Kherson, N = 71	45
Khmelnitsky, N = 59	27
Cherkasy, N = 64	30
Chernivtsy, N = 72	67
Chernigiv, N = 82	57
Note: a) all p values are calculated based on χ^2 test	

Some heterosexual contacts instigated by the MSM respondents involve female commercial sex workers. During the last sexual contact with a FSW 86% of those MSM who had contact with sex workers used a condom.

2.3. Sex while intoxicated

A small proportion of respondents (4%) always engaged in sex while under the influence of alcohol. Over half of respondents had sex while intoxicated. Compared to the last monitoring data there is a decrease in the number of respondents who would have sex while sober (see Table 46).

Table 46. Frequency of sexual contacts under the influence of alcohol, compared to the 2009 monitoring data, %

—Howoften (e.g., 30 days) would you engage in sexual relations while under the influence of alcohol?"	**2009, N = 2300**		**2011, N = 5950**	
Always	3	58	4	62
In over half of cases	12		13	
In half of cases	20		20	
In under half of cases	23		25	
Never	42		34	
Do not recall	1		4	

It should be noted that respondents age 20 to 29 tend to engage in sexual relations while intoxicated.

Among those MSM who had never engaged in sex while intoxicated, the proportion of condom use cases is considerably greater. Frequency of alcohol use and condom use are statically related (see Table 47).

Table 47. Relationship between frequency of sexual contacts while under the influence of alcohol and sexual behaviour, %

Sexual behaviour indicators: MSM	**—Howoften (e.g., 30 days) would you engage in sexual relations while under the influence of alcohol?"**					
	Always	**In over half of cases**	**In half of cases**	**In under half of cases**	**Never**	**Do not recall**
Condom used during the last anal sexual contact, N = 3164	4	12	20	27	33	4
Always used a condom during anal sexual contact with a man during the last 30 days, N = 2079	4	11	21	28	32	4
Always used a condom during anal sexual contact with regular male partners (during the last six months), N = 1295	3	12	18	25	38	5

Always used a condom during anal sexual contact with casual male partners (during the last six months), N = 1926	4	11	18	28	35	4
Always used a lubricant during anal sexual contact (insertive and receptive practices) with all your male sexual partners, N = 2481	4	12	19	25	38	3
Condom used during the last sexual contact with a FSW, N = 866	8	11	23	20	28	10

Drug use compared to alcohol use is not a popular practice (e.g., 2% of those who use narcotic drugs, or 19 respondents engaged in sex while under the influence of drugs).

2.4. History of MSM sexuality (2007–2011)

Introduction of standardised questionnaire in 2009 and application of single methodology for sample selection, which was launched in 2007 provides data which can be compared from year to year (see Table 48). Considering that the study's geography continually expanded some (i.e., relevant) indicators are presented with disaggregation by cities to insure correct comparison of data.

Table 48. History of key sexual practices of MSM, based on results of regular two-year monitoring studies

City		**2007**	**2009**	**2011**
Age of sexual début (95% CL)				
Total for Ukraine		– [a)]	17.7 (17.6–17.9)	17.8 (17.6–18.0)
Number of *stable* male partners during 30 days				
Total for Ukraine		– [b)]	1.4	0.9
Number of *casual* male partners during 30 days				
Total for Ukraine		– [b)]	2.6	1.7
Number of female partners				
Total for Ukraine		1.0	2.6	1.4
Ever had sex with a woman, %				
Total for Ukraine		52	58	54
National Indicator — Percentage of MSM who used a condom during the *last* anal sexual encounter with a male partner", % (95% CL)				
Total for Ukraine		39	64	71
Dnipropetrovsk	- [c)]	39 (28–51)	72 (60–81)	23 (15–27)
Donetsk	0	18 (13–24)	58 (47–69)	73 (63–79)
Ivano-Frankivsk	0	39 (29–49)	83 (76–89)	88 (83–95)
Kyiv	+	31 (24–39)	45 (36–56)	75 (66–80)
Kryviy Rig	0	47 (36–60)	– [d)]	63 (54–74)
Lugansk	+	16 (11–22)	38 (30–48)	64 (54–72)

Lviv	+	–[d]	52 (44–60)	79 (75–86)
Mykolayiv	-	53 (45–61)	93 (90–97)	82 (74–86)
Odesa	0	34 (24–44)	81 (72–88)	81 (77–89)
Poltava	0	–[d]	78 (72–85)	77 (76–85)
Simpheropol	0	46 (37–55)	81 (73–88)	76 (61–81)
Uzhgorod	+	–[d]	81 (75–88)	99 (95–99)
Kharkiv	0	–[d]	63 (55–72)	59 (57–68)
Kherson	+	15 (11–18)	32 (20–43)	48 (44–57)
Cherkasy	+	45 (29–64)	52 (44–59)	71 (60–73)
***Always* used a condom during anal sex with another man during 30 days, % (95% CL)**				
Total for Ukraine		–[a]	46 (44–47)	49 (48–51)
Used a condom during the *last* sexual encounter with a female partner, %				
TotalforUkraine		53	58	66
***Always* used a condom during sex with a female partner during 6 months, %**				
TotalforUkraine		–[a]	36	47
Notes:a) the question was not posed in 2007; b) in 2007 the question related to the 6 month period; c) trends (-) — downward, i.e., indicator decreased, (0) — stable, (+) — upward, indicator increased d) the study was not conducted in the city				

Evidently, despite study's geographic scale up the average age of the same sex sexual debut, proportion of men who had anal sex with another man within 6 months and ever had sex with women did not change; these indicators are defined by complex interaction between biological and cultural factors, consequently changes in these trends are expected to set in within a longer period of time.

Instead in 2009-2011 the average number of male partners and female partners somewhat decreased, although in absolute numbers the decrease is slight, consequently it would have no effect on the epidemic in the short term. Possibly the sample engaged more target populations who have homosexual relationships, have a stable partner and so on.

More importantly, the study registered an increase in the National Indicator –Percentage of MSM who used a condom during the last anal sexual encounter with a male partner". Out of 15 cities covered by previous monitoring studies in six cities the proportion of MSM who used a condom during the last homosexual encounter significantly increased within the last two years, in seven cities the proportion remained the same (two year periods intersect) and in two cities a decrease had been reported.

Overall, in Ukraine from 2009 until 2011 there are registered trends in regular use of condoms during anal sexual encounters with men: almost half of respondents always use protection. In addition, there is an increase in proportion of MSM who use condoms with women.

Conclusions to Section 2

The Section presents data and analysis for sexual practices of MSM, including length of sexual activity, its intensity (e.g., number and profile of partners, number of sexual intercourse and so on), relationship to other social and demographic indicators, and also trends in condom and lubricant use.

Respondents report sexual debut with another man at the average age of 17.8, also in 27% of cases sexual debut happened before respondents reached the age of 16. Older respondents report same sex sexual debut later in life compared to younger respondents.

During the last sexual encounter with a man, respondents on average engaged in sexual intercourse twice.

It may be stated, that most respondents do not lead a monogamous life: for the last 30 days on average respondents engaged in sex with one stable partner and three chance partners (40% of those who had sex with the stable partner also had sex with casual partners and commercial sex partners).

There are evident relations between various vulnerable populations, including MSM and CSW of both gender and between MSM and the female population. A number of MSM belong to several vulnerable populations. Eight per cent of MSM engage in transactional sex and 54% of respondents ever engaged in heterosexual relations.

During six months half of respondents had sex with at least one female partner. Among MSM with history of heterosexual relations, 5% reported having sex within 12 months with female commercial sex workers.

Married MSM are at greater risk as they constitute one fifth of clients of same sex commercial sex workers, which is four times greater compared to other married men who do not purchase sexual services from other men. Among MSM who purchased services from FSW there are twice as many married men and men sharing a household with a female partner, compared to those men who did not use services of commercial sex workers.

Almost two thirds of respondents (60%) engaged in sexual relations during one month while under the influence of alcohol.

Seventy percent of MSM used a condom during the last sexual intercourse with a woman. Among MSM who live with a same sex partner only 50% used a condom during the last anal sex with a male partner, compared to 77 % of married MSM and MSM who live alone.During the last 30 days MSM used a condom durinf sex with women as with the same frequency as with male partners. During the last 30 days almost one half of MSM (49%) always used a condom during anal intercourse with a male partner, also higher condom use rates are attributed to being a client of MSM service organisation. Living with a male partner is associated with less frequent use of condoms.

Forty seven percent of MSM who engaged in sex with a woman during the last 6 months always used a condom. Also only two thirds of MSM (62%) who had within last 6 months a sexual intercourse with a woman and protected sex with a male partner had protected sex with a woman. Some proportion of heterosexual intercourse takes place between MSM and female commercial sex workers. During the last sexual contact with a FSW 86% of MSM who engaged in sex with female commercial sex workers used a condom. Such practices may affect an increase in heterosexual way of transmission of HIV and HIV entering the general population which calls for introduction of prevention programmes specifically tailored for bisexual MSM.

Key reasons for not using a condom with men and women is confidence in partner's health, immediate unavailability of a condom and decreased sensitivity.

Also 77% of MSM used lubricant during the last sexual encounter with a male partner. Key factors influencing lubricant use are the following: living with a male partner, university education, average or high income, no history of serving time in prison, being a client of MSM organization and using a condom during the last anal intercourse.

Key reasons for not using a lubricant are immediate unavailability of lubricant and having no need to use a lubricant.

SECTION 3.HIV PREVENTION ACTIVITIES

3.1. Activities supported by MSM organisations

3.1.1. Active members and leaders

From the time the Global Fund to Fight AIDS, Tuberculosis and Malaria came to Ukraine the LGBT community continues to mobilise and develop its capacity[22]: new LGBT organisations and charitable foundations are launched every year almost in all regions of Ukraine, professional level of already established organisations continues to increase. Sometimes initiative groups which later on officially register as LGBT organisations emerge from MSM projects. Consequently, the survey included questions on respondents' engagement into LGBT movement or MSM projects.

Around one tenth of respondents identify themselves as active members of the LGBT movement and MSM organisations or LGBT leaders, and one fifth is not aware of activities supported by these structures or projects (see Table 49). As a result it is important to compare clients and non-clients of MSM projects and regional differences associated with the split.

Table 50 demonstrates that there are ten times more MSM activists and fivefold less respondents who are not aware of the LGBT movement compared to non-clients. Difficult to separate the cause from effect: either projects mobilise the community, or socially aware respondents are attracted by available resources.

Table49.Respondents' association with the LGBT movement and average age in each sub-group

—Are you an active member or leader in the LGBT/MSM organization or initiative group?"	**%, N = 5950**	**Average age (95% CL), years**
Yes, I am an activist	11	27.9 (27.3–28.5)
No, I am not interested	63	27.6 (27.4–27.9)
No, I am not aware that such organisations exist	23	27.5 (27.1–27.9)
Other	2	29.5 (27.9–31.5)

Table 50. Active in LGBT movement: clients and non-clients of MSM projects, %

—Are you an active member or leader in the LGBT/MSM organization or initiative group?"	**—Are you a client of an MSM organisation; do you have a client card and an individual code?"**	
	Yes, N = 1530	**No, N = 4391**
Yes, I am an activist	36	3
No, I am not interested	50	68
No, I am not aware that such organisations exist	6	29
Other	8	<1%

22 M.KASYANCHUK, S.SHEREMET Studying leaders of the LGBT movement in Ukraine using social network analysis [Text] /LGBT studies: current challenges and solutions. Materials of the International Interdisciplinary Scientific Conference dedicated to the memory of Igor Kon "LGBTQ Research: Current Problems and Prospects." St Petersburg, October 27-29, 2011 – St Petersburg, 2011 – P. 32–33.

Activists, compared to non-activists include more respondents who live with a male partner (see Table 51) and those who identify themselves as homosexuals. However, these differences are not substantial (see Table 52). Other social and demographic indicators do not differ greatly between the groups of activists and non-activists.

From a practical point of view, it indicates that prevention and mobilisation programmes should be designed to cater for the needs of lesser engaged populations, including married men, men living with a female partner and those men who identify themselves as bi-sexual and heterosexual.

Table 51. Comparing respondents: activists and non-activists based on real marital status, %

Real marital status	**—Are you an active member or leader in the LGBT/MSM organization or initiative group?"**	
	Yes, I am an activist, N = 662	**No [a], N = 5149**
Live with a male partner	20	16
Live with a female partner	4	6
Live with parents/family	40	43
Live alone	36	35
Note: a) sum of responses –No, I am not interested" and –No, I am not aware that such organisations"		

Table52. Comparing respondents: activists and non-activists based on sexual preferences, %

—Which of the presented terms best reflects your sexual preferences"	**—Are you an active member or leader in the LGBT/MSM organization or initiative group?"**	
	Yes, I am an activist, N = 651	**No [a], N = 5077**
Homosexual	79	65
Bisexual	20	33
Heterosexual	1	2
Note: a) sum of responses –No, I am not interested" and –No, I am not aware that such organisations"		

3.1.2. Coverage with services

One of the national indicators evaluating HIV response is coverage of vulnerable populations with prevention services. For MSM this indicator is calculated as proportion of all respondents who said yes to following questions:

- Did you receive condoms in the last 12 months?
- Do you know where to go to get an HIV test?

Results demonstrate that 53% of MSM are covered with HIV prevention services. History of coverage of MSM and comparative analysis for different regions will be presented in Sub-Section 3.4.

Table 53 demonstrates that MSM age 14 to 24 are to the most extent covered by services, compared

to older MSM who need to be covered more.

Likewise married MSM, men living with a female partner, men with higher income, men with history of serving time in prison are insufficiently covered by services.

Interesting trends are registered in sub-groups of respondents defined based on being attracted to women: the farther away the respondents moves from "pure homosexuality", the less likely the respondent is to be covered by MSM projects; consequently the sub-population of bisexual respondents is hard to reach, and their needs should be more supported by developed prevention programmes.

Table53.NationalIndicator "Percentage of MSM covered by prevention programmes", % disaggregated by socialanddemographicindicators (weighed in by age groups "under 25" and "25 and over")

Characteristics	%
Age, p = 0.001 [a)]	
14–24, N = 2443	57
25 and over, N = 3506	50
Official marital status, p < 0.001	
Never been married, N = 4773	55
Officially married, N = 432	36
Divorced or widowed, N = 744	50
Real marital status, p < 0.001	
Live with a male partner, N = 882	55
Live with a female partner, N = 496	36
Live with parents/family, N = 2515	55
Live alone, N = 2056	54
Education, p = 0.132	
Uncompleted high school education, N = 171	58
Completed high school education, N = 700	50
Uncompleted higher education, N = 1777	54
Uncompleted higher education, N = 1294	55
Higher education or scientific degree, N = 2008	52
Economic status, p < 0.001	
Economically deprived, N = 1522	52
Average income, N = 2816	57
High income, N = 1612	46
History of serving time in prison, p = 0.059	
Been to prison, N = 235	46
Never been to prison, N = 5710	53
Sexual preferences in regard to different gender, p < 0.001	
Men only, N = 3272	60

Mostly men, but sometimes women, N = 1372	52
Equally men and women, N = 808	39
Mostly women, but sometimes men, N = 444	35
Client of MSM service NGO, p < 0.001	
Yes, N = 1327	94
No, N = 4587	41
Footnote: a) all p values are calculated based on χ^2 test	

Regional values for indicator are presented in Table 54[23]. It should be noted that homophilia cases vary around zero, meaning that coverage with prevention programmes was not definitive for recruiting purposes, as a result local samples were not limited by small groups of closely knit people.

Table54.Regional values for indicator "Percentage of MSM covered by prevention programmes"

City	% estimated population proportion	% in sample	homophilia	95% CI
Zhytomyr	50	41	0.306	30–54
Ivano-Frankivsk	31	25	0.296	15–35
Kirovograd	37	36	0.111	26–49
Kryviy Rig	52	38	0.363	27–49
Lviv	66	71	-0.137	65–77
Lutsk	–	0*	–	–
Rivne	35	31	0.060	25–38
Zhaporizhzha	43	28	0.360	21–34
Sebastopol	51	44	0.081	35–52
Sumy	61	58	0.084	50–65
Chernigiv	–	0*	–	–
Chernivtsy	77	75	0.203	64–83
Ternopil	10	9	-1	5–13
Uzhgorod	97	97	-0.001	94–99
Poltava	54	52	0.276	43–61
Vinnytsya	34	30	0.022	22–39
Cherkasy	94	93	0.219	88–96
Simpheropol	71	71	-0.021	61–80
Dnipropetrovsk	84	81	0.133	75–87

[23] See Annex 3 for regional values with disaggregation by age

Donetsk	53	52	0.215	44–60
Kharkiv	54	52	0.042	46–58
Kherson	33	23	0.235	19–30
Kyiv	73	68	0.169	60–74
Lugansk	39	35	0.064	28–43
Mykolayiv	77	69	0.263	63–76
Odesa	72	68	0.134	60–75
Note: it was impossible to calculate values marked with anasterisk (*) in RDSAT due to composition of sample, therefore the values presented here were calculated with the use of SPSS statistical software.				

Evidently, variables have complex interchanging relations which may affect group coverage with HIV prevention, consequently the following issue could be further analysed in more detail. However, presented data undoubtedly has practical importance for developing social programmes in the future. Married and bisexual MSM and also men with higher income are clearly under-covered.

3.2. HIV/AIDS awareness

National indicator for HIV/AIDS awareness is calculated as percentage of people who correctly answered five questions compared to the number of all respondents. Following questions are used to test HIV awareness:

- Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?
- Can a person reduce the risk of getting HIV by using a condom every time they have sex?
- Can a healthy-looking person have HIV?
- Can a person get HIV by sharing a glass of water with someone who is infected?
- Can a person get HIV by sharing a toilet/swimming pool/sauna with someone who is infected?

The overall indicator for HIV awareness among MSM is 64%. History of HIV awareness among MSM and comparative analysis for different regions will be presented in Sub-Section 3.4.

Basic HIV awareness increases with respondents' age (see Table 55). Key factor affecting the level of awareness is respondents' association with an MSM organisation, even though NGO clients and non-clients do not differ greatly by average age, NGO clients have better awareness compared to non-clients.

Table 55. National Indicator "Percentage of MSM who both correctly identify ways of preventing sexual transmission of HIV and who reject the major misconceptions about HIV transmission", disaggregated by age and MSM NGO client/non-client status (weighed in by age groups "under 25" and "25 and over")

Characteristics	%
All respondents, N = 5950	64

Age, p < 0.001 [a)]	
14–24, N = 2443	60
25 and over, N = 3507	66
Official marital status, p = 0.008	
Never been married, N = 4773	63
Officially married, N = 432	66
Divorced or widowed, N = 745	65
Real marital status, p < 0.001	
Live with a male partner, N = 883	72
Live with a female partner, N = 496	64
Live with parents/family, N = 2515	60
Live alone, N = 2057	64
Education, p < 0.001	
Uncompleted high school education, N = 170	45
Completed high school education, N = 701	59
Vocational school education, N = 1776	61
Uncompleted higher education, N = 1293	63
Higher education or scientific degree, N = 2008	69
History of serving time in prison, p = 0.001	
Been to prison, N = 235	52
Never been to prison, N = 5710	64
Sexual preferences in regard to different gender, p = 0.053	
Men only, N = 3272	65
Mostly men, but sometimes women, N = 1373	63
Equally men and women, N = 808	62
Mostly women, but sometimes men, N = 444	60
Client of MSM service NGO, p < 0.001	
Client, N = 1327	64
Non-client, N = 4587	61
Note: a) all p values are calculated based on χ^2 test	

In regard to regional differences (see Table 56) it should be notes that there are significant variations (sometimes up to ten times)[24]. The lowest level of basic HIV awareness is registered among MSM in the Chernigiv City (9%), and highest in Lugansk (86%).

It should be noted, that homophilia values significantly varies from zero only in Chernigiv. Evidently, this may be explained by recruiting challenges as put forward in Section on Methodology, it is highly unlikely that respondents' networks in the city is designed based on distinction –responds not like me".

[24] See Annex 1 for regional values with disaggregation by age

In other cities the value is considerably lower, meaning that local samples were not limited to small groups of closely knit people.

Table56.Regional values for indicator "Percentage of MSM who both correctly identify ways of preventing sexual transmission of HIV and who reject the major misconceptions about HIV transmission"

City	% of estimated population proportion	% in sample	Homophilia	95% CI
Khmelnitsky	78	73	0.142	64–80
Zhytomyr	45	36	0.163	27–48
Ivano-Frankivsk	73	69	0.198	58–79
Kirovograd	61	67	-0.160	57–74
Kryviy Rig	79	77	-0.004	67–87
Lviv	49	52	-0.002	44–59
Lutsk	69	65	0.199	55–75
Rivne	81	87	0.013	80–91
Zhaporizhzha	77	68	0.275	60–77
Sebastopol	39	42	0.106	32–52
Sumy	83	78	0.276	72–86
Chernigiv	9	9	-1.000	5–13
Chernivtsy	–	56*	–	–
Ternopil	75	81	0.331	73–89
Uzhgorod	84	85	-0.037	80–89
Poltava	74	80	-0.098	74–86
Vinnytsya	47	47	-0.237	40–54
Cherkasy	65	65	0.192	56–71
Simpheropol	82	79	0.085	70–88
Dnipropetrovsk	47	43	0.176	37–50
Donetsk	82	80	0.056	74–85
Kharkiv	37	36	0.059	31–42
Kherson	60	59	-0.096	53–66
Kyiv	83	76	0.243	70–83
Lugansk	86	89	-0.017	83–94
Mykolayiv	65	61	0.105	54–68
Odesa	47	54	-0.134	46–62
Note: it was impossible to calculate values for cities marked with anasterisk (*) in RDSAT due to composition of sample, therefore the values presented here were calculated with the use of SPSS statistical software.				

Continue to review respondents' answers to some of the questions (see Table 57). As in the previous years respondents demonstrate least awareness on vertical transmission of HIV. Curiously, although in regard to almost all other indicators the level of awareness of married respondents is lower compared to level of awareness demonstrated by MSM who are covered by MSM projects (it was stated earlier that proportion of clients and non-clients do not differ within the number of married MSM), married MSM evidently show higher awareness in questions related to vertical transmission of HIV as compared to the general public. From a practical point of view it means that HIV prevention programmes do not cater enough for the needs of married MSM and some important information is sought and adopted by respondents from other sources

Table57.PercentageofMSMwhoansweredcorrectlytosomebasicquestionsonHIV/AIDS

Questions	% of correct responses		
	All respondents, N = 5950	**Clients, N = 1530**	**Married men, N = 322**
Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?	92	92	90
Can a person reduce the risk of getting HIV by using a condom every time they have sex?	92	96	91
Can a healthy-looking person have HIV?	82	92	84
CanapersongetHIVthroughamosquitobite?	75	84	79
Can a person get HIV by sharing a glass of water with someone who is infected?	87	91	82
Can a person get HIV by sharing a toilet/swimming pool/sauna with someone who is infected?	85	91	85
Can a person get HIV by sharing food from the same plate with someone who is infected?	85	90	82
Can a person get HIV by sharing injection paraphernalia with someone who is infected?	93	96	95
CanHIVbetransmittedfromHIVinfectedmothertochilddurin gpregnancy?	73	79	79
CanHIVbetransmittedfromHIVinfectedmothertochilddurin g labour?	73	83	78
CanHIVbetransmittedfromHIVinfectedmothertochild during breastfeeding?	60	74	68

3.3. HIV and STI counseling and testing

Coverage of MSM with HIV testing is one of the national indicators. It is calculated as proportion of all respondents out of the total number of MSM who answered yes to following questions:

- I am not asking you about the test result, but did you get an HIV test within the last 12 months?

– I am not asking you about the test result, but do you know the result?

According to study results (see Table 58) 38% of surveyed MSM got tested for HIV and know the result. History of indicator value and comparative analysis for different regions will be presented in Sub-Section 3.4.

Older groups of respondents have a larger proportion of tested MSM, compared to younger groups. This distribution is evidently associated with proportions of tested MSM in different marital status groups: among divorced and widowed MSM (middle and older aged range, see above) there are significantly more tested MSM compared to MSM who had never been married or are currently married.

Among those who live with a male partner of live alone there are more MSM tested compared to those MSM who live with parents/family or with a female partner. There are two probable factors affecting the situation: MSM living with a male partner are more likely to be clients of MSM NGOs compared to MSM who live with a female partner and those MSM who live alone are older compared to men living with parents of family.

Civil society organisations working in service provision to MSM clearly prove their efficiency by providing testing, e.g., among NGO clients there are two fold more MSM who were tested compared to non-clients.

Link between testing and education may be explained by several factors. On the one hand, the average age of MSM with uncompleted and completed high school education is the lowest, compared to MSM with higher education and scientific degrees who have a higher average age. On the other hand, MSM with uncompleted high school education are covered the most with HIV services. And finally, regional differences may have an effect on the indicator.

There is a clear cut trend: respondents with a higher income, are more likely to get tested – the trend is most evidently associated with age.

Respondents' age also explains the link between testing and serving time in prison: MSM with history of serving time in prison have a higher average age compared to the rest of respondents. However, one should also examine the link between serving time in prison and bisexuality: the farther away the respondent moves from "pure homosexuality" the less likely he is to be tested. One should also note that as it had been mentioned above average age of respondents who differently identify the degree of sex appeal of men and women differs only slightly.

Table 58. National Indicator "Percentage of MSM who tested for HIV infection within the last 12 months and know the result", % disaggregated by key social and demographic characteristics (weighed in by age groups "under 25" and "25 and over")

Characteristics	%
All respondents, N = 5950	38
Age, p < 0.042 [a)]	
14–24, N = 2444	36
25 and over, N = 3506	38
Official marital status, p < 0.004	
Never been married, N = 4773	38
Officially married, N = 432	33
Divorced or widowed, N = 745	43
Real marital status, p < 0.004	
Live with a male partner, N = 883	42

Live with a female partner, N = 495	34
Live with parents/family, N = 2515	36
Live alone, N = 2056	39
Education, p < 0.001	
Uncompleted high school education, N = 171	36
Completed high school education, N = 701	28
Vocational school education, N = 1776	39
Uncompleted higher education, N = 1293	38
Higher education or scientific degree, N = 2009	40
Economic status, p < 0.001	
Economically deprived, N = 1521	35
Average income, N = 2816	36
High income, N = 1613	44
History of serving time in prison, p = 0.190	
Been to prison, N = 235	33
Never been to prison, N = 5710	38
Sexual preferences in regard to different gender, p < 0.001	
Men only, N = 3272	41
Mostly men, but sometimes women, N = 1373	37
Equally men and women, N = 808	32
Mostly women, but sometimes men, N = 444	29
Client of MSM service NGO, p < 0.001	
Clients, N = 1328	68
Non-clients, N = 4586	29
Note: a) all p values are calculated based on χ^2 test	

Indicator's regional values (see Table 59) vary significantly in different regions[25]. The lowest number of tested MSM is in Chernigiv (14%), the highest in Mykolayiv and Cherkasy (66%), Kryviy Rig, Kyiv, and Uzhgorod (63% in each city)[26]. It should be noted that the hemophilia values significantly vary from zero only in Kirovograd and Zhaporizhzha (meaning that criterion –MSM covered by testing" was definitive for recruiting respondents, or in other words the survey covered mostly NGO clients).

Table 59. Regional values for indicator "Percentage of MSM who tested for HIV infection within the last 12 months and know the result"

City	% of estimated	% in sample	homophilia	95% CI

[25] See Annex 2 for regional values with disaggregation by age

[26] Considering that all national indicators heavily depend on sampling, future studies should include a standard client/non-client distinction, by studying standard population which includes all of the respondents and considering proportion of tested and covered clients and non-clients for each region.

	population proportion			
Zhytomyr	31	23	0.290	15–36
Ivano-Frankivsk	23	23	0.110	14–32
Kirovograd	17	20	-0.414	11–30
Kryviy Rig	63	50	0.248	41–61
Lviv	30	34	-0.206	28–41
Lutsk	25	17	0.239	11–26
Rivne	43	34	0.248	28–42
Zhaporizhzha	27	16	0.349	10–22
Sebastopol	42	39	-0.154	31–47
Sumy	35	37	-0.100	30–44
Chernigiv	14	13	0.193	7–19
Chernivtsy	43	37	0.041	26–43
Ternopil	35	39	0.017	31–47
Uzhgorod	63	67	-0.080	61–73
Poltava	35	38	-0.004	28–47
Vinnytsya	44	38	-0.035	31–45
Cherkasy	66	59	0.249	53–67
Simpheropol	40	46	-0.056	36–54
Dnipropetrovsk	23	20	0.187	15–27
Donetsk	44	42	0.127	35–49
Kharkiv	20	20	-0.017	16–24
Kherson	38	32	0.194	26–39
Kyiv	63	51	0.241	44–59
Lugansk	30	24	0.007	18–31
Mykolayiv	67	62	0.154	56–69
Odesa	57	54	0.103	45–61

Existing complex interchanging relations between the variables may affect coverage rates of HIV testing within the vulnerable population. The issue may be analysed in more detail in the future. However, presented data undoubtedly has practical importance for developing future social programmes. Also MSM who do not identify themselves with the gay community evidently lack testing, along with respondents with high school education.

Of course respondents' awareness of testing sites where they should go to get tested for HIV (awareness of testing sites for HIV testing is a component of national indicator on coverage with services, see above; here we review the issue independently).

The overall majority (90%) of respondents reported knowing where they get an HIV test in their city and 92% believe that they have access to testing.

Among those who believe that they do not have access to testing (477 respondents) there is a larger proportion of young people (average age is 25, compared to 28 in other groups), more people with level of training below high school education, those who say that they are economically deprived and are not clients of MSM projects.

Listofreasons for lack of access to HIV testing is presented in Table 60.

Table60.Responsestoquestion "Why is HIV testing not available to you personally?" out of those who believe that they do not have access to testing

Reason for lack of access	**%, N = 477**
Do not know where to turn to	*44*
Donotknowtheaddressofthe facility/site/point for testing	*20*
Difficult to say	*18*
Mylocality does not have a testing site	12
I am afraid of disclosing my HIV status	10
Cannot afford testing	4
Inconvenientopenhoursfortesting facility/site/point	3
Inconvenientlocation of testing facility/site/point	1
Unfriendly attitude of staff	1
Note:total sum of values does not equal 100% because each respondent could select several relevant responses, or not make a selection at all	

Around two thirds of respondents (61%) came to testing facilities/organisations to get tested. Those who did not (2330 respondents) cited following key reasons: confidence in personal sexual behavior, lack of need and being afraid of knowing the result (see Table 61).

Table61.Responsestoquestion "Why didn't you get tested for HIV?" out of those who did not get rested

Reason for not being tested	**%, N = 2330**
I never engaged in risky sexual behaviour	*41*
Do not want to get tested	*34*
Afraid knowing my HIV status	12
I believethattestingisnotfreeofcharge	6
Inconvenient location of testingsites	6
DonotknowwhereI can get tested	1
I always applied safe drug use practices	<1%

Note: total sum of values does not equal 100% because each respondent could select several relevant responses, or not make a selection at all

It is important to compare responses from those who said "never engaged in risky sexual behaviour" and their responses on sex life description. For example, among these respondents only 73% used a condom during the last anal intercourse with male partner, only 58% always used a condom during anal sex with all male partners within 30 days, they also had on average 8 regular partners, 9 casual partners and 8 commercial sex male partners and also two female sex partners in the last 30 days. These respondents obviously underestimate their sexual risks. Almost all who came in for testing received HIV testing. During a lifetime these respondents on average tested three times (min 1, max 50). Almost half of surveyed MSM (see Table 62) last tested during the first six months of 2011 (the survey was launched in June 2011). It should be noted, that the number of latest tests increases from year to year, this may be a result of scaling up access to testing and enrolling more clients into MSM projects.

Table 62. Time of the latest HIV test

"When was the last time you tested for HIV?"	**%, N = 3538**	
This year (2011)	48	
Winter 2010	12	36
Autumn 2010	10	
Summer 2010	8	
Spring 2010	7	
In 2009 or earlier	16	

VCT guidelines require provision of pre-test and post-test counseling when drawing blood for HIV testing[27]. However, 13% of respondents who underwent testing reported not having pre-test counselling (during the pre-test counselling the counsellor provides information on HIV/AIDS, ways of transmission, describes possible test result and advises on reducing HIV risks). The largest proportion of MSM who did not receive pre-test counselling (40%) were last tested in 2010.

A larger proportion of tested MSM (22%) reported not having post-test counselling (i.e., private conversation between the testee and counsellor to discuss the test result, provide relative information and psychological support).

Based on result of last tests 3% reported (89 respondents) being HIV positive and 72 respondents said that they are registered in HIV care at the AIDS Centre.

Only a small proportion of respondents (see Table 63) reported other health conditions during a year, or AIDS related diseases (e.g., tuberculosis) or infections which increase the risk of HIV transmission (e.g., syphilis and other STDs) or infections which indicate injecting drug use (e.g., Hepatitis C).

Table 63. Diseases in patient's medical history

"Did you have the following diseases within the last 12	**%,**

[27] "Proceduresvoluntary counseling and testing for HIV infection (guidelines)", approved by the Ministry of Health Decree # 415, dd August 19, 2005 "On strengthening voluntary counseling and testing for HIV infection and registered at the Ministry of Justice of Ukraine, dd November 22, 2005 — Available from: http://zakon.rada.gov.ua/cgi-bin/laws/main.cgi?nreg=z1404-05

months?”	N = 5950
Tuberculosis	1
Gonorrhoea	1
Genital herpes	2
Chlamydia	3
Hepatitis B	1
Hepatitis C	1
Syphilis	1
Thrichomonasis	1
Other	<1%
Note:total sum of values does not equal 100% because each respondent could select several relevant responses, or not make a selection at all	

3.4. History of HIV prevention (2007–2011)

History of coverage with HIV prevention has complex trends (see Table 64): in 2009 coverage scaled up, and from 2009 till 2011 it slightly decreased. Possibly, scaling up the study’s geography affects acquired data, however this conjecture stands refuted when comparing indicators for various cities. Only four cities demonstrate scale up (namely in Dnipropetrovsk, Donetsk, Uzhgorod and Kharkiv coverage continued to increase), in six cities indicators were within the statistical error, five cities (e.g., Ivano-Frankivsk, Lviv, Lugansk, Mykolayiv, Kherson) experienced an initial increase in scale up following which came a decrease.

Similarly, there are random changes in indicator for basic HIV awareness, moreover most cities when compared do not provide meaningful trends by year.

Most likely, cities with long established prevention programmes (e.g., Kyiv, Mykolayiv, Lviv and so on) are oversaturated and future scale up will be registered in ~~“n~~ew” regions which previously did not have regular MSM projects.

Coverage with testing of MSM somewhat decreased, specifically only in three cities (namely Ivano-Frankivsk, Lugansk and Odesa); indicator had been on decrease for the last several years whereas in other cities it would either stay the same or increase.

Table 64. Monitoring historyof key indicators for prevention activities among MSM based on results of regular two-year monitoring studies

City [a)]		**2007**	**2009**	**2011**
National Indicator —Percentage of MSM covered by prevention programmes”, % (95% CL)				
Total for Ukraine		50	63	53
Dnipropetrovsk	+ [b)]	37 (24–54)	43 (32–53)	82 (75–87)
Donetsk	+	19 (15–27)	23 (16–30)	52 (44–60)
Ivano-Frankivsk	-	43 (33–54)	73 (66–80)	25 (15–35)

Kyiv	0	51 (42–60)	69 (60–79)	68 (60–74)
Kryviy Rig	0	41 (31–50)	–[c)]	38 (27–49)
Lugansk	-	56 (47–65)	17 (10–26)	35 (28–43)
Lviv	-	–[c)]	84 (78–90)	71 (65–77)
Mykolayiv	-	86 (80–90)	95 (91–99)	69 (63–76)
Odesa	0	33 (23–43)	67 (56–77)	68 (60–75)
Poltava	0	–[c)]	60 (52–67)	52 (43–61)
Simpheropol	0	25 (16–37)	56 (46–65)	71 (61–80)
Uzhgorod	+	–[c)]	40 (32–48)	97 (94–99)
Kharkiv	+	–[c)]	34 (25–44)	52 (46–58)
Kherson	-	7 (4–11)	86 (76–95)	23 (19–30)
Cherkasy	0	36 (27–52)	86 (81–92)	93 (88–96)
National Indicator — Percentage of MSM who both correctly identify ways of preventing sexual transmission of HIV and who reject the major misconceptions about HIV transmission", % (95% CL)				
Total for Ukraine		47	71	64
Dnipropetrovsk	-	54 (40–67)	68 (57–79)	43 (37–50)
Donetsk	+	44 (36–53)	49 (40–59)	80 (74–85)
Ivano-Frankivsk	+	55 (45–66)	31 (24–39)	69 (58–79)
Kyiv	0	34 (23–43)	82 (76–88)	76 (70–83)
Kryviy Rig	0	64 (52–73)	–c)	77 (67–87)
Lugansk	0	63 (54–69)	77 (67–85)	89 (83–94)
Lviv	-	–c)	78 (72–85)	52 (44–59)
Mykolayiv	-	61 (54–69)	89 (83–94)	61 (54–68)
Odesa	-	38 (28–48)	81 (72–88)	54 (46–62)
Poltava	0	–c)	79 (73–86)	80 (74–86)
Simpheropol	-	50 (40–61)	96 (91–99)	79 (70–88)
Uzhgorod	0	–c)	83 (77–89)	85 (80–89)
Kharkiv	-	–c)	68 (59–76)	38 (31–42)
Kherson	0	35 (29–41)	72 (62–83)	59 (53–66)
Cherkasy	0	68 (55–79)	62 (54–70)	65 (56–71)
National Indicator — Percentage of MSM who tested for HIV infection within the last 12 months and know the result", % (95% CL)				
Total for Ukraine		28	42	38
Dnipropetrovsk	0	14 (2–33)	12 (6–19)	20 (15–27)
Donetsk	+	24 (17–31)	21 (10–34)	42 (35–49)
Ivano-Frankivsk	-	19 (12–27)	50 (40–61)	23 (14–32)
Kyiv	0	26 (19–33)	54 (44–68)	51 (44–59)
Kryviy Rig	+	16 (9–24)	–c)	51 (41–61)

Lugansk	-	21 (14–29)	62 (52–72)	24 (18–31)
Lviv	0	–c)	47 (39–55)	34 (28–41)
Mykolayiv	+	76 (69–83)	21 (14–29)	63 (56–69)
Odesa	-	24 (15–33)	88 (83–92)	54 (45–61)
Poltava	0	–c)	33 (25–40)	38 (28–47)
Simpheropol	0	18 (11–26)	56 (48–64)	46 (36–54)
Uzhgorod	+	–[c)]	47 (39–55)	67 (61–73)
Kharkiv	0	–[c)]	18 (11–29)	20 (16–24)
Kherson	0	7 (4–10)	28 (20–37)	32 (26–39)
Cherkasy	+	3 (1–6)	30 (23–38)	59 (53–67)
Notes:a) at national level the indicators are not weighed in, at local level indicators are weighed in using RDS AT; b) trends (-) — downward, i.e., indicator decreased, (0) — stable, (+) — upward, indicator increased c) the study was not conducted in the city				

Conclusions to Section 3

MSM projects and LGBT movement are interlinked at many levels: clients of MSM projects have tenfold more activists and five times less respondents who are not aware of the LGBT movement compared to non-clients.

Fifty three percent of MSM are covered with HIV services, also the indicator varies significantly from city to city. Also random trends in coverage had been registered in 2007-2011: e.g., in Dnipropetrovsk, Donetsk, Uzhgorod and Kharkiv coverage rates continued to rise and in Ivano-Frankivsk, Lviv and Mykolayiv coverage rates dropped following an increase.

National indicator on basic HIV/AIDS awareness is 64%; the indicator also changes randomly in the past years, moreover most cities failed to demonstrate meaningful statistical trends over the years.

Thirty eight percent MSM were tested for HIV with 12 months before the survey took place and know the test result. The indicator decreased at the national level compared to 2009; at regional level only in three cities (namely Ivano-Frankivsk, Lugansk and Odesa) it decreased within this period, whereas in other cities the indicator either remained the same or increased. Coverage with HIV testing is insufficient at the national level and the situation calls for action.

Study demonstrates that these indicators are at different levels linked to behavioural, social and demographic trends.

SECTION 4. HIV TESTING RESULTS

4.1. HIV prevalence

A linked study identified 6% of HIV positive respondents, the indicator varies significantly from region to region (see Table 65): cities most affected by HIV are Donetsk and Odesa (19 and 17% respectively), least affected cities are Mykolayiv, Chernigiv, Ternopil and Lutsk (2% each).[28]

Overall East and South of Ukraine are most affected by HIV, compared to Western Ukraine and Central regions of the country. Still, there is no connection to HIV prevalence among the general population (data from the Ukrainian Centre for AIDS Control and Prevention[29]) and HIV prevalence among MSM in a specific region (Pearson's correlation coefficient 0.23, p = 0.25).

High negative values for homophilia in Mykolayiv, Kirovograd, Ternopil, Sumy and Chernigiv call for special attention. It means that HIV positive respondents in the cities avoid contact with other HIV positive MSM. Compared to high homophilia values in Lugansk, Vinnitsa, Uzhgorod and Lutsk which indicates marginalisation or isolation of HIV positive MSM in these cities. HIV positive status of respondents in other cities does not determine creation or dissolution of social connections.

Table 65. Regional values for national indicator "HIV prevalence among MSM"

City (% among blood donors in respective regions)	% of estimated population proportion	% in sample	homophilia	95% CI
Eastern region				
Donetsk (0.19)	19	20	-0.308	15–26
Lugansk (0.05)	4	10	0.447	2–21
Kharkiv (0.05)	5	5	0.127	2–7
Southern region				
Odesa (0.33)	17	16	0.062	1–23
Sebastopol (0.10)	9	7	-0.013	4–12
Kherson (0.07)	5	6	0.074	3–9
Zhaporizhzha (0.09)	9	5	-0.037	3–7
Simpheropol (0.14)	5	3	-0.021	1–5
Mykolayiv (0.39)	2	2	-1.000	0–4
Central region				
Vinnytsya (0.09)	4	6	0.311	2–11
Dnipropetrovsk (0.21)	5	5	0.135	2–8
Kirovograd (0.27)	3	4	-1.000	1–9
Cherkasy (0.10)	4	3	0.085	1–5
Kryviy Rig (0.21)	3	2	0.150	0–6

[28] See Annex 5 for regional values with disaggregation by age

[29] HIV infection in Ukraine: information bulletin [Text] /MoH, Ukrainian Centre for AIDS Prevention and Control et al — 2010. — # 33. — P. 45.

Poltava (0.15)	–	0*	–	–
Western region				
Khmelnitsky (0.07)	8	8	-0.004	9–10
Lviv (0.14)	7	7	-0.265	4–11
Ivano-Frankivsk (0.08)	5	6	0.237	1–15
Uzhgorod (0.03)	4	5	0.323	2–10
Chernivtsy (0.05)	6	3	0.155	0–7
Lutsk (0.10)	2	3	0.483	0–4
Rivne (0.09)	3	2	-0.012	1–4
Ternopil (0.06)	2	1	-1.000	0–3
Northern region				
Zhytomyr (0.17)	9	11	0.299	2–23
Kyiv (0.14)	9	7	0.100	4–10
Sumy (0.04)	4	6	-1.000	2–10
Chernigiv (0.17)	2	1	-1.000	0–3
Notes:a it was impossible to calculate values for cities marked with anasterisk (*) in RDSAT due to composition of sample, therefore the values presented here were calculated with the use of SPSS statistical software				

It was previously mentioned in Section 2 that respondents' average age of sexual debut with another man is 18. The difference between respondent's age at the time of survey and the time of first same sex sexual intercourse represents the length of risky sexual behavior related to same sex encounters. Despite some limitations (i.e., risky sexual behavior is affected not so much by length of engaging in same sex relations but rather intensity of sex life and application of harm reduction means, e.g., condoms); data from Table 66 demonstrates that HIV status and average length of homosexual activity are in fact related, because confidence limits do not interchange, which indicates a meaningful connection.

Table66.Length of homosexual activity and HIV status

HIV status based on a linked study results	%, N = 5949	Average length of homosexual activity (95% CI), years
HIV positive	6	11.6 (10.9–12.3)
HIV negative	94	9.6 (9.5–9.8)

4.2. History of HIV prevalence (2007–2011)

History of HIV prevalence among MSM is presented in Table 1. Typically there is an interchange between confidence limits for HIV prevalence in cities with available data for at least three years (except Lviv and Mykolayiv). This indicates that a change in indicators is illusionary, and there is no pan-national reduction in HIV prevalence.

Table67.HIV prevalence among MSM based on results of regular two-year monitoring studies with disaggregation by cities, % (95% CL)

City [a]		**2007**	**2009**	**2011**
Total for Ukraine		11	9	6
Dnipropetrovsk	0 [b]	–[c]	2 (0–4)	5 (2–8)
Donetsk	0	–[c]	20 (11–30)	20 (15–26)
Ivano-Frankivsk	0	–[c]	3 (0–5)	6 (1–15)
Kyiv	0	2 (1–5)	8 (3–16)	7 (4–10)
Kryviy Rig	0	8 (2–20)	–[c]	2 (0–6)
Lugansk	0	–[c]	5 (0–5)	10 (2–21)
Lviv	-	–[c]	19 (12–25)	7 (4–11)
Mykolayiv	0	10 (5–19)	2 (0–3)	2 (0–4)
Odesa	0	23 (22–59)	22 (11–34)	16 (1–23)
Simpheropol	0	–[c]	9 (4–17)	3 (1–5)
Uzhgorod	0	–[c]	7 (3–11)	5 (2–10)
Kharkiv	0	–[c]	4 (0–8)	5 (2–7)
Kherson	0	–[c]	5 (2–10)	6 (3–9)
Cherkasy	0	–[c]	5 (2–9)	3 (1–5)

Notes:a) at national level the indicators are not weighed in, at local level indicators are weighed in using RDS AT;
b) trends (-) — downward, i.e., indicator decreased, (0) — stable, (+) — upward, indicator increased
c) the survey or respondents' blood testing for HIV was not conducted in the city

4.3. Sero-conversion factor

The overall number of HIV infected MSM identified as a result of a linked study is out of the number of those who had not been tested before and those who had been tested and know their test result (positive or negative). Some MSM who tested negative previously could this time test positive due to several reasons. In other words from the time of the last test the person was infected and blood serum now contains antibodies to HIV, i.e., the patient *sero-converted*.

Description of sexual behavior presented above may give an idea which factors *could* cause infection; and comparative analysis of two groups of respondents who tested negative before and remained infection free and MSM who previously tested negative and currently test positive provides data on *existing* causes of infection.

Subsequently, 2556 people were tested before and tested negative, out of this number 97 MSM (4%) tested positive, according to the linked study results.

Known HIV infection risks include long term engagement into the MSM community, large numbers of male sex partners, receptive anal sex, regular use of alcohol and drugs, lack of HIV and STD awareness, infection with STDs and also irregular condom use. Effect of these factors is supported by two-fold analysis: link between sero-conversion and value of $p \leq 0.2$ was considered significant(see Table 68).

Table68. Sero-convertion in sample %, with disaggregation based on social, demographic and behavioural characteristics

Characteristics	%
All those who tested previously and know their negative result, N = 2556	4
Age, p = 0.282 [a)]	
14–24, N = 943	3
25 and over, N = 1710	4
Official marital status, p = 0.886	
Never been married, N = 2161	4
Officially married, N = 147	3
Divorced or widowed, N = 345	3
Real marital status, p = 0.587	
Live with a male partner, N = 525	5
Live with a female partner, N = 157	3
Live with parents/family, N = 1003	4
Live alone, N = 968	4
Education, p = 0.052	
Uncompleted high school education, N = 56	4
Completed high school education, N = 256	5
Vocational school education, N = 796	5
Uncompleted higher education, N = 523	4
Higher education or scientific degree, N = 1022	2
Economic status, p = 0.516	
Economically deprived, N = 579	4
Average income, N = 1250	3
High income, N = 824	4
—Do you consider yourself a religious person", p = 0.318	
Definitely, yes, N = 686	4
More likely yes, than no, N = 817	4
Difficult to say, N = 105	2
More likely yes, than no, N = 388	5
Definitely, no, N = 620	3
History of serving time in prison, p = 0.882	
Been to prison, N = 97	4
Never been to prison, N = 2551	4
Sexual preferences, p = 0.307	
Homosexual, N = 1792	4

Bisexual, N = 793		3
Heterosexual, N = 40		2
Sexual preferences in regard to different gender, p = 0.476		
Men only, N = 1602		4
Mostly men, but sometimes women, N = 628		3
Equally men and women, N = 308		3
Mostly women, but sometimes men, N = 108		2
Client of MSM service NGO, p = 0.773		
Client, N = 983		4
Non-client, N = 1661		4
City, p < 0.001		
Eastern region	Donetsk, N = 119	13
	Lugansk, N = 89	1
	Kharkiv, N = 82	0
Southern region	Odesa, N = 207	16
	Sebastopol, N = 77	1
	Kherson, N = 152	1
	Zhaporizhzha, N = 109	5
	Simpheropol, N = 145	3
	Mykolayiv, N = 192	1
Central region	Vinnytsya, N = 51	4
	Dnipropetrovsk, N = 81	4
	Kirovograd, N = 46	0
	Cherkasy, N = 142	1
	Kryviy Rig, N = 70	0
	Poltava, N = 94	0
Western region	Khmelnitsky, N = 36	3
	Lviv, N = 69	4
	Ivano-Frankivsk, N = 92	2
	Uzhgorod, N = 21	14
	Chernivtsy, N = 74	0
	Lutsk, N = 90	1
	Rivne, N = 63	0
	Ternopil, N = 52	2
Northern region	Zhytomyr, N = 37	3
	Kyiv, N = 284	3
	Sumy, N = 110	5
	Chernigiv, N = 66	2

UsingInternettofindmalepartnersforsex, p = 0.905	
User, N = 1670	4
Non-user, N = 983	4
Did you have anal sex with a man within 6 months?, p = 0.897	
Yes, N = 2538	4
No, N = 114	4
Usedcondomduringthelastanalintercoursewithamalepartner, p = 0.382	
Yes, N = 1837	3
No, N = 708	4
Type of male partner during the lase anal intercourse, p = 0.282	
Regular, N = 1350	4
Casual, N = 1098	3
Commercial (respondent purchased sex), N = 38	5
Commercial (respondent received payment), N = 58	9
Condomuseduringanalintercoursewithallmalepartnerswithin 30 days, p = 0.013	
Always used condom, N = 1232	3
Not always used condom, N = 1208	5
Regularmale sexpartnersinthelast 30 days, p = 0.249	
Yes, N = 1599	4
No, N = 946	3
Casualmalesexpartnerinthelase 30 days, p = 0.912	
Yes, N = 1381	4
No, N = 1163	3
Male commercial sex partners (respondent paid) in the last 30 days, p = 0.789	
Yes, N = 76	5
No, N = 2465	4
Male commercial sex partners (respondent received payment) in the last 30 days, p = 0.432	
Yes, N = 112	6
No, N = 2429	4
–Please recall your anal intercourses with regular male partners in the last 6 months. How often did you use condoms with regular partners?", p = 0.393	
Always (100%), N = 744	4
In most cases (75%), N = 294	3
In half of cases (50%), N = 137	4
Sometimes (25%), N = 103	7
Seldom (under 10%), N = 121	5
Never, N = 389	5
–Please recall your anal intercourses with casual male partners in the last 6 months. How often did you use condoms with casual partners?", p = 0.001	

Always(100%), N = 1128	4
In most cases (75%), N = 366	2
In half of cases (50%), N = 113	10
Sometimes (25%), N = 52	6
Seldom (under 10%), N = 20	15
Never, N = 35	0
—How often in the last 6 months you used lubricant during anal intercourse (insertive and receptive practices) with all your male sex partners?", p = 0.959	
Always (100%), N = 1503	4
In most cases (75%), N = 650	4
In half of cases (50%), N = 187	4
Sometimes (25%), N = 78	4
Seldom (under 10%), N = 64	2
Never, N = 104	5
—Did you use lubricant during the last anal intercourse?", p = 0.745	
Yes, N = 2084	4
No, N = 505	4
—Have you ever had sex with a woman?", p = 0.236	
Yes, N = 1536	3
No, N = 1117	4
—Have you ever used services of women who provide sexual serviced for reward in the last 12 months?", p = 0.338	
Yes, N = 139	2
No, N = 1396	3
—Did you use a condom during the lase sexual intercourse with FSW?", p = 0.044	
Yes, N = 125	1
No, N = 13	15
—Did you use a condom during the lase sexual intercourse with a woman?", p = 0.483	
Yes, N = 475	3
No, N = 199	2
—Please recall you sexual intercourses with female partners in the last 6 months. How often did you use condoms with female partners?", p = 0.427	
Always (100%), N = 348	4
In most cases (75%), N = 145	1
In half of cases (50%), N = 44	0
Sometimes (25%), N = 20	0
Seldom (under 10%), N = 34	3
Never, N = 96	3
—Do you take alcohol?", p = 0.247	

Yes, N = 2226	4
No, N = 427	3
—How often did you use alcohol during the last month (30 days)?", p = 0.182	
Every day, N = 229	6
At least once per week, N = 967	4
Less frequently than once per week, N = 976	4
Never, N = 19	0
—Some people try different drugs. Did you use non-injection drugs during the last 12 months (e.g., smoked cannabis, snorted cocaine, took ecstasy and so on)?", p = 0.985	
Yes, N = 384	3
No, N = 2153	4
Used before (over a year ago), do not use currently, N = 115	4
—Some people try injecting drugs. Did you use injecting drugs in the last 12 months?", p = 0.154	
Yes, N = 16	6
No, N = 2597	4
Used before (over a year ago), do not use currently, N = 39	10
—How often in the last month (30 days) did you have sexual intercourse while under the influence of *alcohol*?", p = 0.350	
Always (100%), N = 85	5
In over half of cases, N = 278	3
In half of cases (50%), N = 404	4
In under half of cases, N = 568	5
Never, N = 798	4
—How often in the last month (30 days) did you have sexual intercourse while under the influence of *narcotic drugs*?", p = 0.888	
Always (100%), N = 5	0
In over half of cases, N = 13	0
In half of cases (50%), N = 27	7
In under half of cases, N = 59	5
Never, N = 299	4
—Did you have *tuberculosis* in the last 12 months?", p = 0.045	
Yes, N = 28	11
No, N = 2625	4
—Did you have *gonorrhoea* in the last 12 months?", p = 0.999	
Yes, N = 26	4
No, N = 2627	4
—Did you have *genital herpes* in the last 12 months?", p = 0.999	
Yes, N = 43	5

No, N = 2610	4
—Did you have *chlamydia* in the last 12 months?", p = 0.999	
Yes, N = 78	4
No, N = 2575	4
—Did you have *Hep B* in the last 12 months?", p = 0.439	
Yes, N = 38	0
No, N = 2615	4
—Did you have *Hep C* in the last 12 months?", p = 0.043	
Yes, N = 21	14
No, N = 2632	4
—Did you have *syphilis* in the last 12 months?", p = 0.782	
Yes, N = 20	0
No, N = 2633	4
—Did you have *trichomonasis* in the last 12 months?"», p = 0.312	
Yes, N = 37	8
No, N = 2616	4
Correct responses to 5 test questions on basic HIV awareness, p = 0.425	
All correct responses, N = 1887	3
Some incorrect responses, N = 766	4
Coverage with prevention programmes, p = 0.999	
Covered, N = 1755	4
Not covered, N = 898	4
Note: a) all p values are calculated based on χ^2 test	

Evidently, there are links between sero-convertion and education, place of survey, condom use during absolutely all anal sexual encounters with male partners, frequency of condom use with casual partners, condom use with the last sexual encounters with a FSW, infection with tuberculosis and Hep C in the last 12 months.

Presented data supports conjecture that there are significant links between education and respondent's age, his economic status, history of serving time in prison; between surveyed city and age, being client of MSM organisation[30], marital status (i.e., official and real), economic status, religious beliefs, condom use during the last oral sexual contact; frequency of condom use also is linked to age, marital and economic status, being client of MSM organisation, sex appeal to different gender, regular use of lubricant during anal sex and regular use of condoms with female partners, frequency of sexual encounters when under the influence of alcohol; infection with tuberculosis and Hep C could be linked to serving time in prison and/or injecting drug use.

For this reason all of these variables were included into the preliminary model, which was simplified later on. Variables not included in the model were subjected to regression analysis; results are presented in Table 69 (model developed based on 2644 surveys with inclusion of missing

[30] Variable "Client of MSM service organisation" was not included into analysis because people with already existent higher risks become clients, this it is not a cause but rather a consequence

responses).

Table 69. Results of multi-dimensional analysis of factors linked to sero-conversion (event analysed: switching from being HIV free to HIV positive status in clients who were tested for HIV before)

Variable	OR	AOR [b)] (95% CL)
City (ref. = Vinnytsya), p = 0.001 [a)]		
Dnipropetrovsk	0.9	0.8 (0.1–5.1)
Donetsk	3.8	3.5 (0.8–16)
Zhytomyr	0.7	0.7 (0.1–7.9)
Zhaporizhzha	1.2	1.2 (0.2–6.7)
Ivano-Frankivsk	0.5	0.7 (0.1–5.4)
Kyiv	0.8	0.8 (0.2–4.1)
Kirovograd	–	–
Kryviy Rig	–	–
Lugansk	0.3	0.3 (0.0–3.7)
Lutsk	0.3	0.2 (0.0–3.4)
Lviv	1.1	1.8 (0.3–12)
Mykolayiv	0.1	0.2 (0.0–1.8)
Odesa	*4.6*	*6.3 (1.4–28)*
Poltava	–	–
Rivne	–	–
Simpheropol	0.7	0.8 (0.1–4.4)
Sebastopol	0.3	0.2 (0.0–2.9)
Sumy	1.2	1.2 (0.2–6.3)
Ternopil	0.5	0.7 (0.1–8.7)
Uzhgorod	*4.1*	*7.5 (1.1–51)*
Kharkiv	–	–
Kherson	0.3	0.3 (0.0–2.3)
Khmelnitsky	0.7	0.4 (0.0–5.5)
Cherkasy	0.4	0.4 (0.0–1.3)
Chernivtsy	–	–
Chernigiv	0.4	0.3 (0.0–3.9)
Age (ref. = 14–24), p = 0.02		
25 and over	*1.3*	*1.8 (1.1–2.9)*
***Always* used condom during anal intercourse with a male partner during the last 30 days (ref. = Did not have anal sex), p < 0.001**		
Not always	1.1	0.8 (0.4–1.8)
Always	*0.6*	*0.4 (0.2–0.9)*

In the last 12 months had *Hep C* (ref. = No), p = 0.03		
Yes	*4.5*	*6.7 (1.4–32)*
Notes:a) p-values are calculated based on LR-test; b) AOR (Adjusted Odds Ratio) is reflective of odds combination which would lead to an event given a particular predicate which included effect of other predicates within the model		

Considering that the –City" variable is most significant (previous sections stated that respondents from different regions considerably differ in social and demographic trends and in regard to behaviour), next stage of analysis excluded the variable (see Table 70).

Analysis demonstrates that when including/excluding the –City" variable (95% CL of adjusted odds ratio do not include one), the –Age" variable remains significant (e.g., MSM over 25 have two times more chances of transiting from HIV free status to being HIV infected compared to under 25s) and those who –Had Hep C during 12 months" (respondents who reported being diagnosed with Hep C are five times more likely to be infected with HIV compared to those who did not have hepatitis).

Being infected with Hep C indicates that the respondent ever had blood to blood contact

(e.g. blood transfusion, injections with infected equipment, tattoos and so on). Among the respondents only 2% (138 respondents) ever used or are currently using injecting drugs, among these respondents only 12% (or 17 respondents) were diagnosed with Hep C. Parenteral infection with (Hep C and HIV) could be caused not just by injecting drug use, but by other behavioural factors, e.g., tattoo, or medical professional hazards. Considering these results, future studies should include relevant questions.

Table 70. Results of multi-dimensional analysis of factors linked to sero-conversion (event analysed: switching from being HIV free to HIV positive status in clients who were tested for HIV before) omitting the "City" variable

Variable	OR	AOR [b)] (95% CL)
Age (ref. = 14–24), p = 0.02		
25 and over	*1.3*	*1.7 (1.1–2.7)*
***Always* used condom during anal intercourse with a male partner during the last 30 days (ref. = Did not have anal sex)**		
Not always	1.1	1.2 (0.6–2.4)
Always	0.6	0.5 (0.2–1.1)
Economic status (ref. = Economically deprived), p = 0.12		
Average income	0.9	1.0 (0.6–1.7)
High income	1.2	1.6 (0.9–2.9)
Education (ref. = Uncompleted high school education [9 grades])		
Completed high school education (11 grades)	1.4	1.7 (0.4–8.1)
Vocational school training (vocational school)	1.4	1.5 (0.4–6.7)
Uncompleted higher education (Bachelor's)	1.1	1.3 (0.3–5.8)
Higher education (Master's, specialist)	0.6	0.5 (0.1–2.3)
Scientific degree (Candidate of Sciences, Doctor)	1.1	0.7 (0.1–8.4)
–Pleaserecallyousexualintercourseswith female partnersinthelast 6 months. How often did		

you use condoms with female partners?" (ref. = Question was not asked), p = 0.04		
Always (in 100% of cases)	1.1	1.1 (0.6–2.1)
In most cases (75%)	0.2	0.1 (0.0–1.0)
In half of cases (50%)	–	–
Sometimes (25%)	–	–
Seldom (under 10%)	0.7	0.6 (0.1–4.4)
Never	0.8	0.6 (0.2–2.0)
Do not know / Do not recall	–	–
In the last 12 months had *Hep C* (ref. = No), p = 0.05		
Yes	*4.5*	*4.6 (1.2–17)*

Conclusions to Section 4

In Ukraine HIV prevalence among MSM is 6.4%, with data significantly varying from regional centre to regional centre.

There are no changes in HIV prevalence among MSM at the national level and regional level, study results remain within the statistical error. The 2011 study results could be baseline findings for evaluating HIV prevalence in Ukraine.

There is no registered link between HIV prevalence in blood donors and in MSM in respective regions.

Study demonstrates that that there is a link between the length of homosexual activity (i.e., respondent's age at the time of study minus age of same sex sexual debut) and HIV status.

Hepatitis C and being 25 and over are the two risk factors affecting HIV transmission.

SOME RECOMMENDATIONS BASED ON STUDY'S FINDINGS

Contextual

Prevention programmes tailored for MSM should:

- focus on alcohol related harm reduction, popularisation of sobriety, promoting responsibility for one's health and health of sex partners from different groups;
- take into account lesser frequency of condom use with regular male and female partners, e.g., develop and pilot a strategy of working with couples together (relevant operational studies may be used to support efficiency of such strategies);
- differentiate services for different age groups, in particular consider that there are more married men, men with higher income and clients of MSW, men with history of serving time in prison among older MSM; develop and work out strategies and methods of work with young MSM at the age of 16-20 years; strengthen the component of condom distribution and ecourage their use. In particular, focus on the methods of partner's motivation to condom use, condom use during oral and vaginal sex, ~~–l~~oyalty" training to condoms etc; ;
- strengthen component of lubricant distribution and promoting awareness to reduce health risks associated with one sex sexual practicesand to engage clients into relevant prevention programmes;
- develop and pilot strategiesofworking with bisexual men and married MSM by accordingly increasing the informational component of HIVprevention during vaginal sexual contacts;;
- support strict application of VCT guidelines in medical facilities and NGOs who have VCT component, including provision of pre-test and post-test counselling;
- contribute to encouraging of MSM to be regularlytested for HIV and improving of access to these services;
- expand/strengthenHIV prevention programmes among MSM in regions, where the percentage of MSM covered by prevention programmes makes up less than 60% (according to this survey);
- pay closer attention to MSM who engage in practices associated with ~~–b~~lood to blood" contact (e.g., tattoo, injecting drug use etc.); consider Hep C infection rates in clients and clients' partners;
- implement innovative approaches to HIV prevention among MSM through Internet, taking into account the popularity of this data sourse to seek patners.

Methodological

Pay more attention to correct selection of samples in surveyed cities.

When planning future monitoring study among MSM:

- cover all regional centres (in some cities increase samples to 250 respondents);
- in regions with registered high HIV prevalence rates cover with a linked study not only regional centres but also large localities in the region;
- plan for pilot use of online questionnaires in large cities where pilot teams had positive feedback during monitoring visits;
- foresee wide scale application of multidimensional analysis;
- support correct comparison between study's findings and available data on the general population of Ukraine;

- include into questionnaire section on history of heterosexual relations of MSM, also a question on the age of heterosexual debut, standardise sections on homosexual and heterosexual behaviour and so on.

Continue monitoring studies on prevalence of drug use, including injecting drug use. Additional studies should focus on examining reasons which promote drug use from different populations amongMSM groups.

Annex 1. National indicators of awareness and behaviour of men who have sex with men, included into the list of the National Monitoring and Evaluation Indicators on the effectiveness of response to HIV/AIDS epidemics (national level, regional level, disaggregation by age)

National Indicator "Percentage of MSM who both correctly identify ways of preventing sexual transmission of HIV and who reject the major misconceptions about HIV transmission": national level, disaggregated by age and city

	In general by the city		**14–24 years**		**25+**	
Ukraine	64.0	62.8–65.2	60.0	58.1–62.0	66.0	64.4–67.6
City	**% of estimated population proportion**	**95% CI**	**% of estimated population proportion**	**95% CI**	**% of estimated population proportion**	**95% CI**
Khmelnytskyi	72,6	63,9–80,1	81,2	65,3–93,6	66,4	52,4–79,5
Zhytomyr	36,2	27,1–47,7	34,7	18,5–56,5	39,4	29,0–52,6
Ivano-Frankivsk	69,1	57,8–78,6	59,4	39–79,6	70,4	60,7–78,2
Kirovograd	66,8	56,6–74,4	65,6 *	54,0−77,2	67,4 *	57,5-77,3
Kryvyi Rig	77,0	67,2–86,7	84,0	74,7–92,4	78,3	71,1–87,9
Lviv	51,6	44,1–58,6	56,4	46,3–67,1	56,4	46,3–67,1
Lutsk	64,8	55,2–74,9	51,2	33,2–76,2	70,1	58,8–82,2
Rivne	86,7	79,8–90,7	89,8	81,9–95,1	76,5	65,1–88,7
Zaporizhzhia	67,9	59,7–77,2	75,0	61,1–90,8	65,8	53,9–78,5
Sevastopol	41,6	31,9–51,7	22,2	8,6–40,9	45,0	34,3–56,0
Sumy	78,4	71,5–85,5	80,1	69,4–89,3	78,7	67,8–88,1
Chernigiv	8,6	5,2–12,5	5,4	1,9–17,4	9,5	4,6–15,3
Chernivtsi	56,0 *	48,1–64,0	43,1 *	31,7−54,5	67,9 *	57,5–78,3
Ternopil	81,0	72,6–88,6	82,8	71,1–92,9	80,4	68,2–90,6
Uzhgorod	84,6	80,0–89,4	84,8	75,7–93,1	84,4	76,6–92,2
Poltava	79,8	73,7–85,5	73,0	61,6–83,2	78,5	68,7–87,4
Vinnytsia	46,8	39,6–54,1	41,8	26,2–60,6	53,3	39,3–63,4
Cherkasy	64,7	56,3–71,2	48,5	32,1–63,1	68,6	59,9–74,4
Simferopol	79,4	69,8–87,6	75,1	66,1–84,8	87,3	78,7–94,6
Dnipropetrovsk	43,0	36,5–50,4	34,1	26,2–43,3	58,4	47,9–67,1
Donetsk	80,0	74,1–85,4	78,8	69,5–87,4	80,7	74,1–87,6
Kharkiv	36,4	31,2–42,4	26,5	17,6–38,9	41,8	32,9–49,7
Kherson	59,4	53,0–65,9	47,3	36,3–59,1	64,8	60,4–76,3
Kyiv	76,4	69,6–82,8	77,0	70,7–85,0	79,1	73,0–85,0
Lugansk	89,0	82,9–93,9	81,6	69,2–92,6	92,3	87,4–96,3
Mykolaiv	61,4	54,3–67,9	54,1	44,6–61,8	72,6	65,1–80,2
Odesa	54,3	45,9–62,4	53,4	43,6–63,3	51,2	40,9–62,8

Note: it was impossible to calculate values marked with anasterisk (*) in RDSAT due to composition of

sample, therefore the values presented here were calculated with the use of SPSS statistical software.

National Indicator "Percentage of MSM who have been tested for HIV infection within the last 12 months and know the result": national level, disaggregated by age and city

	In general by the city		**14–24 years**		**25+**	
Ukraine	37,8	36,6–39,0	36,3	34,4–38,2	38,9	37,3–40,5
City	**% of estimated population proportion**	**95% CI**	**% of estimated population proportion**	**95% CI**	**% of estimated population proportion**	**95% CI**
Khmelnytskyi	23,0	16,0–29,6	16,7	8,0–28,6	27,8	15,8–40,5
Zhytomyr	23,2	14,6–36,1	14,8	7,4–25,8	26,2	15,6–40,5
Ivano-Frankivsk	22,8	14,2–31,9	5,0 *	–	29,6	21,8–39,3
Kirovograd	19,5	11,0–29,9	15,6 *	6,71–24,5	22,1 *	13,3–30,9
Kryvyi Rig	50,3	40,5–61,9	50,7	38,3–65,4	56,2	41,5–70,6
Lviv	33,9	27,8–40,7	32,2	23,8–43,3	34,3	25,3–42,9
Lutsk	16,6	10,6–25,8	20,7	8,3–39,2	14,6	7,5–24,3
Rivne	33,5	27,6–42,4	26,0	17,9–37,1	49,5	37,0–65,8
Zaporizhzhia	15,9	10,0–21,7	29,2	14,4–43,6	9,9	4,4–16,2
Sevastopol	39,4	30,9–47,1	44,0	21,7–63,9	37,5	29,4–45,8
Sumy	36,5	29,5–44,3	37,2	26,4–49,8	33,1	23,7–45,0
Chernigiv	12,5	7,2–18,9	20,9	3,7–45,6	11,1	5,2–17,3
Chernivtsi	36,9	25,8–43,2	38,1	18,3–49,7	37,7	23,4–52,0
Ternopil	38,5	30,7–46,5	26,8	15,0–39,1	47,8	34,9–59,8
Uzhgorod	66,9	60,8–73,1	61,0	46,4–74,2	70,8	62,7–79,2
Poltava	37,6	27,8–47,0	38,0	23,7–50,1	33,0	22,4–44,0
Vinnytsia	37,5	30,9–45,4	30,1	18,3–43,2	43,2	30,8–56,7
Cherkasy	59,2	53,2–66,9	54,8	39,5–70,8	62,6	54,9–71,5
Simferopol	45,6	35,5–54,4	55,4	42,7–64,9	36,7	25,6–48,1
Dnipropetrovsk	20,2	15,4–26,6	16,1	10,9–23,2	24,5	16,7–33,6
Donetsk	41,8	35,0–49,2	31,7	22,1–43,6	50,5	42,4–59,2
Kharkiv	19,7	15,8–24,4	13,7	7,1–23,0	23,6	17,2–30,9
Kherson	31,7	26,4–39,1	31,2	20,5–43,7	33,0	24,4–43,6
Kyiv	51,0	44,4–58,5	48,0	39,8–56,5	60,9	54,7–67,8
Lugansk	24,0	17,8–31,1	27,3	16,9–40,5	22,3	14,9–31,0
Mykolaiv	62,4	56,0–68,9	60,7	53,8–68,3	67,1	59,2–75,5
Odesa	53,9	44,8–61,3	60,1	49,6–69,0	48,3	37,4–57,2

Note: it was impossible to calculate values marked with anasterisk (*) in RDSAT due to composition of sample, therefore the values presented here were calculated with the use of SPSS statistical software.

National Indicator "Percentage of MSM covered by prevention programmes": national level, disaggregated by age and city

	In general by city		**14–24 years**		**25+**	
Ukraine	53,1	51,8–54,4	57,2	55,2–59,5	50,2	48,5–51,9
City	**% of estimated population proportion**	**95% CI**	**% of estimated population proportion**	**95% CI**	**% of estimated population proportion**	**95% CI**
Khmelnytskyi	54,6	45,9–62,5	49,6	35,4–66,5	58,7	42,5–71,3
Zhytomyr	40,7	29,6–54,2	43,4	28,2–59,8	36,7	23,2–51,6
Ivano-Frankivsk	24,8	15,1–35,2	21,0	6,8–43,0	25,5	16,2–33,6
Kirovograd	36,4	26,3–48,9	34,4 *	22,8–46,0	41,9 *	31,5–52,3
Kryvyi Rig	37,5	26,9–49,1	37,8	20,2–52,3	44,3	31,7–59,0
Lviv	70,8	64,8–77,3	70,2	61,6–79,3	72,5	64,8–80,0
Lutsk	0 *	–	0 *	–	0 *	–
Rivne	31,3	24,8–38,0	38,9	28,7–49,0	22,6	11,5–34,4
Zaporizhzhia	27,9	20,7–34,4	46,2	28,1–64,5	20,7	13,3–30,1
Sevastopol	43,7	35,2–52,2	47,9	30,2–66,7	45,2	36,0–55,5
Sumy	57,6	49,5–64,5	64,3	52,9–75,5	50,0	37,3–62,5
Chernigiv	0 *	–	0 *	–	0 *	–
Chernivtsi	75,3	63,5–83,4	83,5	66,7–95,3	69,1	53,4–85,1
Ternopil	8,6	5,3–12,8	9,8	3,1–19,6	8,3	3,1–14,3
Uzhgorod	96,6	94,1–98,8	97,5	91,0–97,9	96,0	91,6–99,1
Poltava	52,2	42,7–61,2	69,7	57,0–83,3	45,4	33,3–57,4
Vinnytsia	29,6	21,6–38,5	31,0	14,3–46,3	30,0	17,8–44,1
Cherkasy	92,5	87,7–96,1	87,5	77,0–95,9	95,5	91,6–98,6
Simferopol	71,2	61,4–79,5	72,0	60,0–80,2	68,3	55,8–78,9
Dnipropetrovsk	81,4	75,2–86,6	80,3	72,5–86,7	84,5	76,1–91,6
Donetsk	51,7	44,2–59,8	36,7	25,8–49,2	62,8	54,2–71,2
Kharkiv	52,2	46,2–57,8	55,1	42,9–66,9	50,8	42,7–58,7
Kherson	22,5	18,5–29,5	27,1	18,1-36,2	21,6	15,2–30,0
Kyiv	67,8	60,3–74,2	70,0	62,4–78,4	68,1	61,1–74,0
Lugansk	34,7	27,6–43,0	39,2	27,1–54,1	31,9	23,1–41,1
Mykolaiv	69,3	62,6–75,9	69,8	62,3–76,6	73,8	65,5–82,0
Odesa	67,6	59,8–75,3	78,3	70,0–85,4	60,3	50,6–70,2

Note: it was impossible to calculate values marked with anasterisk (*) in RDSAT due to composition of sample, therefore the values presented here were calculated with the use of SPSS statistical software.

National Indicator "Percentage of MSM who used a condom during the last sexual contact with a male partner": national level, disaggregated by age and city

	In general by the city		**14–24 years**		**25+**	
Ukraine	70,5	69,3–71,7	68,9	67,1–70,7	71,6	70,1–73,1
City	**% of estimated population proportion**	**95% CI**	**% of estimated population proportion**	**95% CI**	**% of estimated population proportion**	**95% CI**
Khmelnytskyi	75,7	64,9–86,3	88,2	78,8–100	68,0	47,3–83,3
Zhytomyr	52,9	41,6–67,1	42,3	23,2–66,2	57,1	42,6–72,5
Ivano-Frankivsk	89,2	83,3–94,5	90,5 *	65,5–98,1	88,3 *	82,8–93,9
Kirovograd	63,0	55,6–76,8	68,9 *	49,1–74,7	59,7 *	53,7–75,6
Kryvyi Rig	64,7	54,4–73,9	63,5	47,6–78,3	67,9	55,6–78,5
Lviv	80,9	74,5–86,4	83,2	75,0–89,8	79,6	71,1–87,0
Lutsk	73,3	66,1–81,5	81,1	67,1–93,6	70,6	62,2–79,9
Rivne	68,8	61,1–76,9	72,2	60,5–83,1	61,3	47,6–76,6
Zaporizhzhia	78,1	70,2–84,9	76,4	59,7–91,4	78,0	64,6–85,9
Sevastopol	63,2	52,5–72,7	55,0	33,2–76,6	69,1	59,2–78,1
Sumy	66,8	57,8–72,2	63,7	51,2–74,7	72,9	59,3–81,0
Chernigiv	71,0	60,4–77,3	69,1	46,8–87,8	72,2	57,9–80,7
Chernivtsi	69,0	56,6–77,8	83,3 *	73,2–93,2	86,3 *	74,3–91,5
Ternopil	96,9	94,5–98,5	98,7	93,6–98,4	95,3	91,4–98,5
Uzhgorod	98,1	95,2–99,5	100 *	–	96,9 *	91,9–99,6
Poltava	78,5	75,8–85,4	80,6	68,0–91,1	77,5	70,3–88,0
Vinnytsia	57,2	47,7–67,1	49,6	28,4–67,0	60,8	48,9–73,3
Cherkasy	66,6	59,6–73,0	66,7	52,6–81,2	66,8	59,3–74,1
Simferopol	72,0	61,4–80,9	64,6	51,2–76,4	82,9	74,1–91,0
Dnipropetrovsk	21,0	15,1–27,0	16,5	10,8–23,8	28,4	18,6–37,6
Donetsk	71,7	63,4–78,6	83,2	71,6–91,8	66,2	57,2–74,2
Kharkiv	62,6	56,8–67,7	62,7	51,2–72,5	63,0	54,5–70,7
Kherson	50,3	44,1–57,2	36,2	24,9–49,3	55,1	46,7–64,6
Kyiv	73,3	65,8–79,6	79,8	73,6–86,8	72,6	64,9–78,2
Lugansk	62,5	54,0–71,8	58,1	43,8–70,1	62,4	51,1–75,5
Mykolaiv	81,5	74,1–86,1	84,9	76,1–90,3	76,0	66,5–84,6
Odesa	83,8	76,6–89,4	83,5	73,7–90,3	85,0	78,4–90,6

Note: it was impossible to calculate values marked with anasterisk (*) in RDSAT due to composition of sample, therefore the values presented here were calculated with the use of SPSS statistical software.

HIV prevalence among MSM: national level, disaggregated by age and city

	In general by the city		14–24 yers		25+	
Ukraine	**6,4**	**5,8–7,1**	**4,2**	**3,4–5,0**	**7,9**	**7,1–8,8**
City	**% of estimated population proportion**	**95% CI**	**% of estimated population proportion**	**95% CI**	**% of estimated population proportion**	**95% CI**
Khmelnytskyi	7,7	8,7–9,7	0,1	0,0–2,8	12,2	3,8–23,5
Zhytomyr	10,9	2,4–23,0	9,9	0,5–25,8	8,7	1,8–19,7
Ivano-Frankivsk	6,4	1,0–14,8	0,0 *	–	7,0 *	2,4–11,1
Kirovograd	3,6	1,0–9,1	3,1 *	0,0–9,7	4,7 *	1,0–10,5
Kryvyi Rig	2,0	0,0–5,6	0,0 *	–	3,4 *	0,0–9,2
Lviv	6,8	3,5–10,6	8,1	0,3–14,2	5,9	0,2–10,5
Lutsk	3,3	0,0–3,9	0,0 *	–	1,8 *	1,0–8,1
Rivne	1,7	0,5–3,5	0,4	0,2–2,4	4,6	1,2–11,4
Zaporizhzhia	4,9	2,5–7,2	0,7	0,5–2,6	6,9	1,9–11,9
Sevastopol	7,3	4,0–11,7	2,9 *	1,5–16,6	8,6 *	5,7–17,9
Sumy	5,6	1,7–10	6,6	0,7–14,3	2,5	0,3–6,5
Chernigiv	1,4	0,4–2,9	0,0 *	–	1,7 *	1,0–7,4
Chernivtsi	2,6	0,2–6,6	0,2	0,1–0,7	4,7	0,3–12,7
Ternopil	1,4	0,4–2,8	1,6 *	0,0–9,8	1,1 *	0,0–8,7
Uzhgorod	5,3	1,6–9,6	0,0 *	–	8,3 *	2,6–13,8
Poltava	0,0 *	–	0,0 *	–	0,0 *	–
Vinnytsia	6,1	2,2–10,6	3,6 *	0,0–10,0	8,5 *	2,1–13,2
Cherkasy	2,9	1,3–4,7	3,2	0–7,5	3,1	0,7–6,0
Simferopol	2,7	1,2–4,7	4,1	0,9–8,6	2,3	0,4–5,1
Dnipropetrovsk	4,8	2,3–7,9	4,4	1,6–7,7	6,5	1,8–13,4
Donetsk	20,0	14,5–25,7	5,2	2,0–10,1	28,3	21,0–34,9
Kharkiv	4,8	2,3–7,3	4,3	0,0–10,8	5,2	0,2–9,2
Kherson	5,5	2,9–8,9	3,2	0,0–8,4	7,4	3,2–11,7
Kyiv	6,9	4,0–10,1	6,2	2,5–10,6	8,8	5,2–12,8
Lugansk	9,6	2,1–21,2	3,0 *	0,0–8,4	7,5 *	1,9–10,4
Mykolaiv	2,0	0,1–4,0	0,2	0,0–4,7	2,5	0,5–5,8
Odesa	16,1	1,0–23,1	11,9	6,2–18,7	19,5	11,7–27,5

Note: it was impossible to calculate values marked with anasterisk (*) in RDSAT due to composition of sample, therefore the values presented here were calculated with the use of SPSS statistical software.