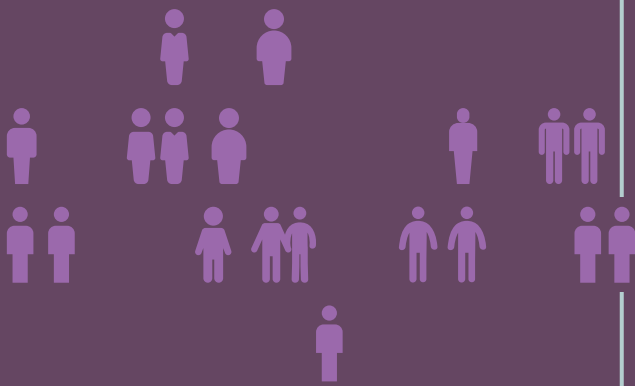


HIV SELF-TESTING

AMONG GAY MEN
AND OTHER MEN
WHO HAVE SEX
WITH MEN IN
THE REPUBLIC
OF NORTH
MACEDONIA:

**ATTITUDES,
ACCEPTABILITY
AND REQUIRED
INFORMATION**



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Research Association

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EXECUTIVE SUMMARY



This survey assessed the HIV self-testing attitudes and acceptability among gay men and other men who have sex with men. More specifically, the survey looked into the needs and concerns of men who have sex with men regarding the possible introduction of HIV self-test kits in the country, it made an assessment of the advantages and disadvantages of using oral fluid versus blood specimen, and identified the HIV self-testing distribution, promotion and support strategies for this population.

For the purpose of this survey, a total of 126 persons were interviewed (by phone or online), using a structured questionnaire. The respondents were recruited from the online dating social networks (Grindr, Planet Romeo), Facebook, or were purposefully selected through interviewers' personal contacts. The SPSS software was used to analyse the data.

Majority of the interviewees were aged 25-35, and more than half were employed (57.9%). 46% replied that sometimes they do not use condoms for anal intercourse. More than half (57%) have never taken an HIV test, and the most frequent reason involves the fear of the test returning positive results (23.8%). Majority of the respondents (51.6%) do not have a

permanent partner. 57.1% reported that they feel quite confident to perform the HIV test on their own (after having seen the information video), majority by using a blood specimen, rather than the oral fluid specimen (74.6%). Majority of the respondents informed that they would take both tests (36%), 31% would only prefer the oral fluid test, while 20% would only perform the blood test. The fear of drawing their own blood (27%) and the fear of what needs to be done if the test turns out positive (19%) are the dominant concerns mentioned in relation to blood testing, whereas, for the oral fluid testing, doubts over the accuracy of the result came to mind (26.2%). HIV self-test kits should be made available in pharmacies (77.8%) or through civil society organisations (72.2%), whereas the preference of state-owned or privately owned health facilities as test distribution channels is twice smaller (34.9%). What the respondents found to be most important is that the HIV self-test kit includes sufficient information and illustrated instructions on how to perform the test and how to read the results (87.3%), as well as information about the institution responsible to treat the HIV infection (79.4%). In respect of the price, majority replied that they would pay up to 500 denars to buy the test (31.7%), and the prices of up to 1,000 denars would

be acceptable to 25.4% of the respondents. 23% reported that they would perform the HIV self-test only if it was free of charge. The social media – Facebook, Instagram (88.1%) – and the online dating channels for gay people – Grindr, Planet Romeo (75.4%) – are the most acceptable HIV self-testing information channels.

Gay men and other men who have sex with men have shown great interest in the introduction of HIV self-testing as a new testing model in the country. The places where these tests could be found, their price, relevant

information on how to perform the test and on how to get in touch with the services providing support to persons living with HIV are all exceptionally important for HIV self-testing. Doubts in the accuracy of the results, the fear of receiving positive test results, and the lack of information about further support (post-test counselling), are factors that can affect the HIV self-testing acceptability, unless they are properly addressed when introducing this new model.



ACKNOWLEDGEMENT

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INTRODUCTION



HIV self-testing was first proposed as a prevention strategy in the mid-1980s [1]. The main characteristic of this approach is that the person alone, in a private environment, can take their own specimen (saliva, blood), perform the test and interpret the results from the HIV rapid test on their own [2]. Overcoming the deficiencies from the inaccessibility of the HIV testing and diagnosing services to 90% of the persons living with HIV by 2020 is of crucial importance for a successful response to the global epidemic. Worldwide practices recommend that HIV self-testing should be offered only as an additional service to the already existing HIV testing activities in the countries [3]. It is crucially important to increasingly focus the future HIV testing initiatives on the key populations affected by HIV. Countries should use diverse strategies (such as promotion campaigns for community-based onsite testing, provider-initiated testing, and HIV self-testing) so as to reach the target of at least 90% of persons living with HIV knowing their status [4].

Majority of HIV self-testing surveys among men who have sex with men (MSM) in the United Kingdom, China, Nigeria have shown that this type of testing increases the motivation of these persons to take the test more often [5, 6] and that it should be considered as an additional option to the already existing HIV testing models [7].

However, it should be considered that the effect from implementing the HIV self-testing compared to the survey results may vary on the account of insufficient supervision during testing, the fewer number of available resources for pre- and post-test information and support, and the insufficiently standardised conditions where the testing is performed that would vouch the quality of the service.

The Republic of North Macedonia is a country of low HIV infection level, with concentrated epidemic (an estimated 5.4% prevalence) in the population of men who have sex with men. As regards the sexual practices, 47.2% of MSM have not used condoms during their last anal intercourse, while 47.2% believe they are exposed to small risk (44.2%) or no risk at all (3%) [12]. Recent years have seen a growing trend in the number of newly registered cases, with 52% of all HIV cases since 1987 (n=404) registered in the last five years [8]. The increased number of people aware of their HIV status, with particular attention to MSM, is one of the most important national prevention objectives for HIV infection management in the country [9]. In countries with low HIV infection rate, gay men and other MSM are exposed to the greatest risk of HIV. In the European Region, 24% of the newly detected HIV cases are among MSM, and in the countries of the European Union (EU) / European Economic

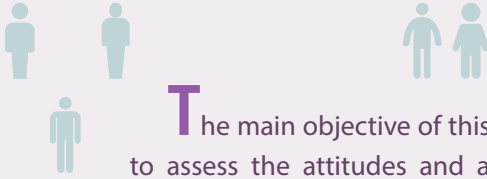
Area this number has reached almost 40% [10]. In the Republic of North Macedonia, MSM run the greatest risk of HIV infection transmission, and over the last five years, 72% of the registered HIV cases, on average, have been identified in gay men and other MSM [8]. The possibility of HIV self-testing is not available in the country, nor special protocols and guidelines have been developed for application of this testing model [8, 11]. In 2018, 72% of the anticipated annual targets for MSM population testing were tested, indicating the need for additional measures to increase the number of HIV testing in this target group. If the estimated number of MSM in the Republic of North Macedonia [12] is considered, we can reach the conclusion that 14.6% of the MSM population was tested to HIV in 2018 [8].

To improve the HIV prevention, particularly among the MSM population, the Republic of North Macedonia needs to make an urgent revision of the existing models of HIV testing services, including introducing the model of HIV self-testing [8]. HIV self-testing kits are not available in the country; they are neither found in pharmacies nor are offered as a testing opportunity within the onsite prevention activities implemented among groups exposed to greater risk of HIV transmission. However, as part of the measures planned for 2020 in the Republic of North Macedonia and aimed at improving the HIV testing availability for the key populations affected by HIV, it has been foreseen to introduce the HIV self-testing and, for the first time ever, the National Programme for Protection of the Population against HIV Infection has provided for HIV self-testing kits to be procured by the Ministry of Health. Moreover, a three-year project on sustainable national

HIV funding, supported by the Ukraine-based Alliance for Public Health and the Global Fund to Fight AIDS, Tuberculosis and Malaria, has set to develop a protocol for piloting the HIV self-testing with the objective to support the introduction of new HIV prevention approaches in the country [13]. Hence, this survey offers opportunities to better understand the MSM's attitudes and acceptability of HIV self-testing. The findings will allow for better public health models to be developed for prevention through HIV testing, and for the testing numbers to increase in the country, both in the MSM population and in other key populations affected by HIV.



METHODOLOGY



The main objective of this survey was to assess the attitudes and acceptability of HIV self-testing among MSM. More specifically, the survey looked into the needs and concerns of men who have sex with men regarding the possible introduction of HIV self-test kits in the country, it made an assessment of the advantages and disadvantages of using oral fluid versus blood specimen, and identified the HIV self-testing distribution, promotion and support strategies for this population.

The survey was carried out in Skopje, in the age group from 18 to 59. A structured questionnaire was used to interview 126 persons for this survey. Based on the size estimations of the MSM population aged 18-59 [12], around 5,556 persons live in Skopje, or 3.4% of the total male population residing in the city. To ensure representativeness, it was agreed that the sample should account for 2% of the target population, or 112. A total of 126 persons were involved in this survey (2.3%). They were recruited through the social networks used by MSM for online dating (Grindr or Planet Romeo), through Facebook, or were purposefully selected through the interviewers' personal contacts, however, in compliance with the involvement criteria.

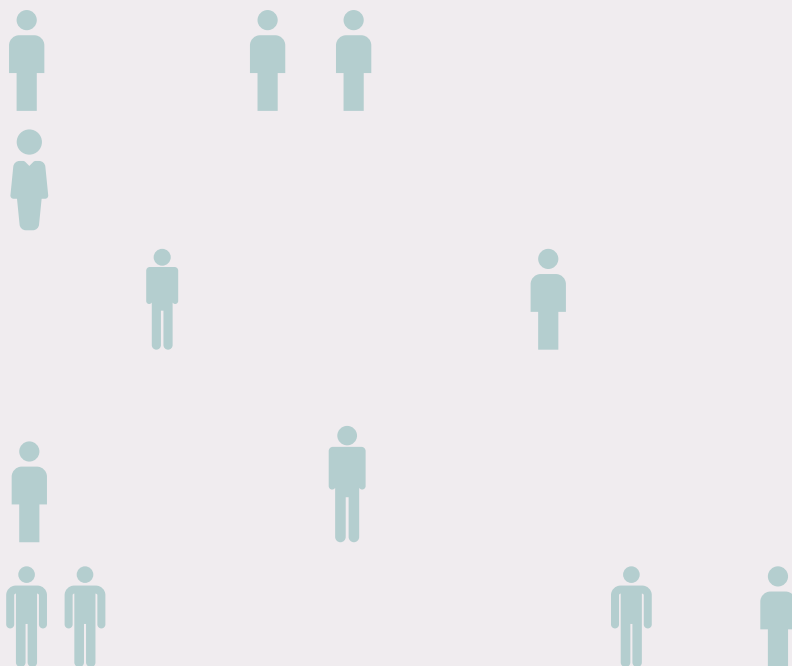
The survey involvement criteria included that the persons should have been

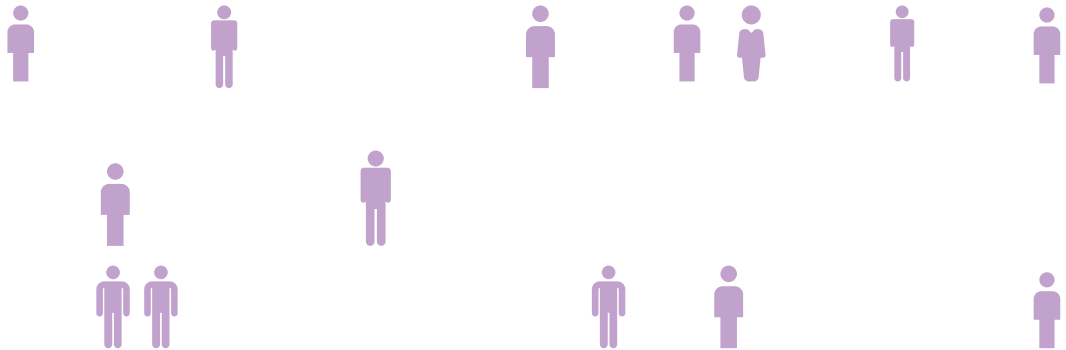
older than 18; should have been gay, bisexual or other men who have sex with men; and should not have used, over the past 2 years, the onsite or stationary HIV testing services provided by civil society organisations or the voluntarily testing services provided by public health facilities. The latter criterion was taken into account so as to ensure more credible results as to introducing new HIV self-testing approaches, primarily for those gay men or other MSM who do not use the free and voluntarily testing services provided by civil society organisations or by public health facilities, under the assumption that the established findings would be more relevant to this community, and would thus increase the HIV testing coverage in the future.

The interviews were conducted by 5 persons belong to the MSM population, who were selected by the associations *HERA – Health Education and Research Association, Stronger Together* and *EGAL – Equality for Gays and Lesbians*. They were provided with a half-day training on how to conduct the survey, which included the objectives of the survey, how to recruit the respondents, ensure confidentiality, collect the data, fill in the questionnaires and forward them for further processing. Moreover, based on the interviewers' comments, revisions were made to the questionnaire before actually using it in the

survey. Interviewees' confidentiality was guaranteed both during their recruitment and during the conducting of the interview. The interviews took 20 to 30 minutes, on average, and were carried out by phone, online (Skype, Viber, Messenger etc.) or in person. To better assess the acceptability of oral fluid (saliva) and blood (fingerprick) testing, during the interviews the respondents were shown two YouTube videos, one about [blood testing](#) and one about [oral fluid testing](#).

The interview questions were structured in several areas: (1) socio-economic characteristics, sexual practices and prior HIV tests; (2) level of certainty / self-confidence in performing an HIV test on oral fluid or on blood specimen; (3) HIV self-testing type preferences, required information and prices; and (4) HIV self-test kits distribution and information channels. The questionnaires were first coded and then fed to the Excel worksheet, where they were analysed with the SPSS software. All 126 questionnaires were fully completed, and no questionnaire was excluded from the analysis on the account of incompleteness.





RESULTS

Demographics, sexual practices and HIV testing

Majority of the interviewed MSM are aged 25-35 (n=56). In respect of the education structure, almost all the survey participants have completed secondary (49.2%) or higher education (49.2%), and only 2 respondents have completed primary education. The largest share of MSM (70%) generate certain amounts of personal income, either as full-time employed (58%) or on fixed-term contracts (12%). A small share is unemployed (19%) with no income at all. Majority of the respondents sometimes do not use condoms during anal intercourse (46%), while 27% of the respondents use condoms always and without exception.

Only 7.9% of MSM never use condoms during anal intercourse, and only 3 respondents have not practiced anal sex yet. Majority of the respondents have not yet taken an HIV test (57%), and the reasons most often cited include feeling no such need because they believe they had not been exposed to risk (24%) or the fear that the result might turn out positive (23.8%). A fraction of the respondents (9.5%) indicated that the fear of fingerpricks (for drawing blood) required to perform the HIV blood test is the reason they have not yet taken any tests (**Table 1 and Chart 1**).

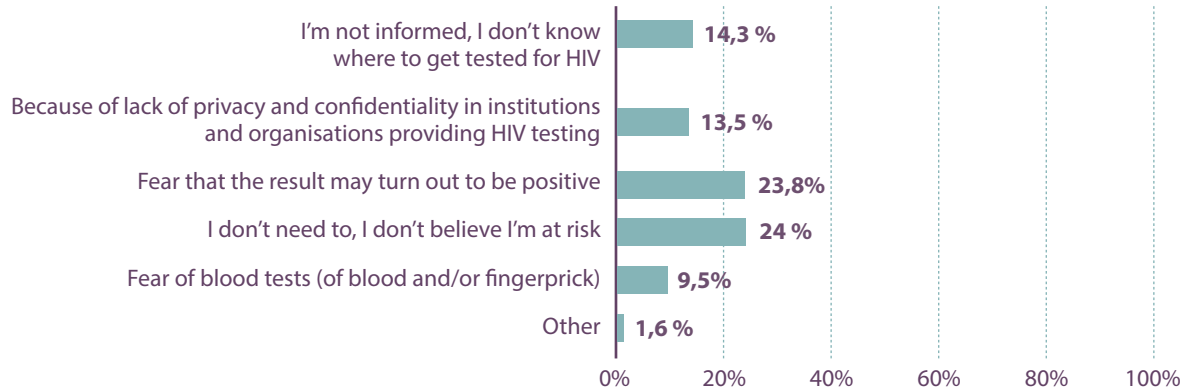
Table 1:
Demography, use of condom during sexual intercourse and HIV testing experience

VARIABLE	FREQUENCY [N]	PERCENTAGE
Age		
18–24	34	27 %
25–35	56	44,4 %
36–45	26	20,6 %
46–59	10	8 %
Education		
Primary	2	1,6 %
Secondary	62	49,2 %
Higher	62	49,2 %
No education	0	0 %
Employment		
Employed	73	58 %
Unemployed	24	19 %
On fixed-term contracts	15	12 %
Student	14	11 %
Condom use during anal sex		
I never use condoms	10	7,9 %
Sometimes I use condoms	58	46 %
I use condoms with everybody, except with the partner I am in relationship with	21	16,7 %
Always, without exceptions	34	27 %
I don't practice anal sex	3	2,4 %
HIV test taken		
Yes	54	43 %
No	72	57 %



Chart 1:

Reasons they have not yet got tested to HIV



Factors affecting the confidence to perform an HIV self-test (oral fluid or blood specimen)

Majority of the respondents reported that they have clearly understood the instructions on how to perform the HIV test using blood specimen (fingerprick) after they were shown the video (79.4%). Almost all the respondents (91.2%) feel very confident (57.1%) or somewhat confident (34.1%) to perform an HIV blood test on their own. Only 3 of the interviewed MSM persons (2.4%) felt completely unconfident to perform the HIV blood test on their own. In respect of the HIV testing using oral fluid specimen (saliva), the results have shown that the respondents have somewhat greater confidence in performing the HIV self-test compared to the blood test. Here, majority of the respondents reported (having seen the video) that they have clearly understood the instructions on how to perform the HIV oral fluid test (83.3%). Nearly all the respondents (95.2%) feel either very confident (75.2%) or somewhat confident (20%) to perform the HIV oral fluid test on their own, indicating a greater level of confidence in performing this type of

test rather than in the HIV blood test. None of the respondents answered that they find the HIV oral fluid test procedure completely unclear.

The participants shared an almost equal opinion as to their friends (gay men, bisexuals) performing an HIV blood test on their own, if it was available in the country, or more precisely, 47.6% believe that most of their friends would perform an HIV blood test on their own, while 43.7% are not sure / do not know if their friends would do one such test on their own. However, when it comes to the HIV oral fluid test, the result is almost twice as higher, with a greater majority of respondents believing that their friends would perform an HIV oral fluid test on their own (64.3%), and only 25.4% are not certain or do not know whether their friends would do one such test on their own.

Majority of the respondents (51.6%) do not have a permanent partner. When it comes to partners, a greater share of the respondents

believe that their partners could perform an HIV blood test on their own (30.2%), while half as much believe that they are not certain or do not know if their partners would perform HIV blood test on their own (14.3%). Similar, yet slightly higher, are the results concerning the respondents' opinion as to whether their partners would perform the HIV oral fluid test. 38.4% of the respondents believe that their partners could perform an HIV oral fluid test on their own, and only 6.4% are not certain / do not know whether their partners would perform an HIV oral fluid test on their own. **(Table 2)**

Majority of the respondents (45.2%) feel sufficiently confident (having seen the video) to perform the HIV blood test on their own and they provide no reason as to prevent them from doing so. Similar results were received in respect of

the HIV oral fluid test, where half of the respondents (50%) feel sufficiently confident to perform the HIV oral fluid test on their own and provide no reasons to the contrary. The reasons most often cited by the respondents as challenges to performing the HIV blood test on their own include fear of drawing their own blood (27%), whereas less important, yet almost equally cited were the complexity of the procedure (19.1%) and the fear of the test returning positive results (19%). As far as the HIV oral fluid test is concerned, two reasons have been identified as equally important in posing challenges to performing the HIV test on their own, namely, the fear of the test returning positive results (27.8%) and the doubt over the accuracy of the results (26.2%), which is higher than in the HIV blood tests. **(Charts 2 and 3)**

Chart 2:

Reasons for not performing an HIV blood test on their own

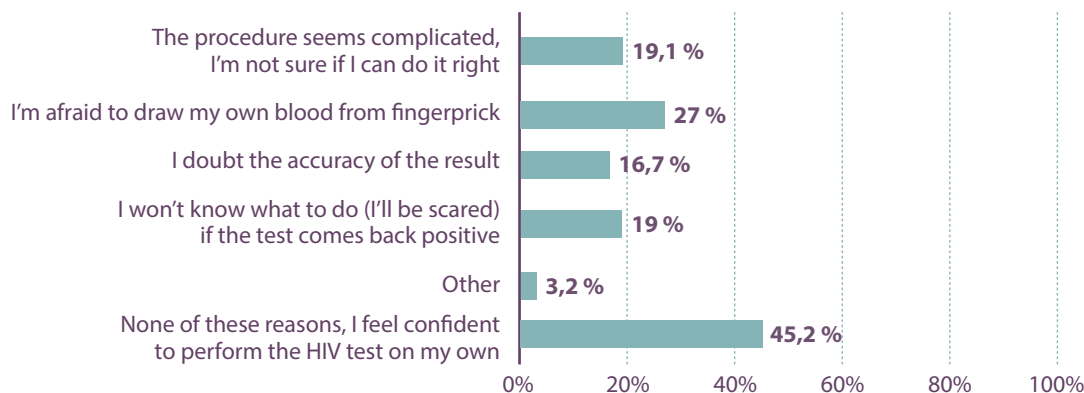
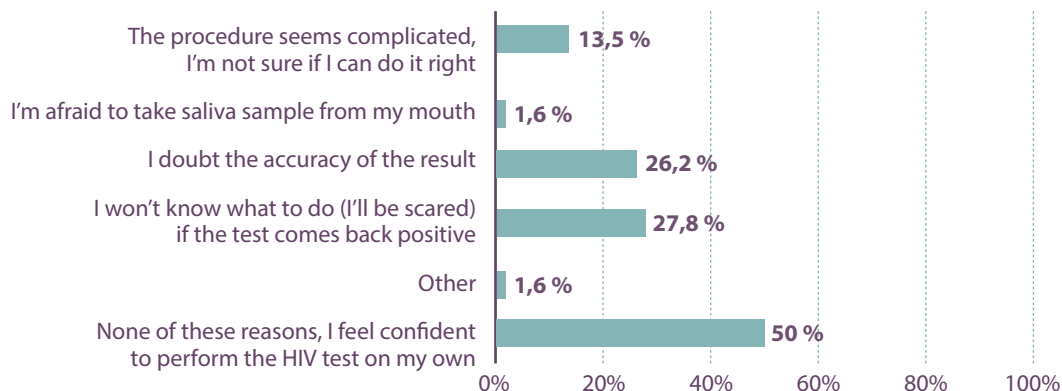


Table 2:

Factors influencing self-confidence to perform HST [using blood or oral fluid specimen]

VARIABLE	FREQUENCY [N] PERCENTAGE		FREQUENCY [N] PERCENTAGE	
	BLOOD TEST		ORAL FLUID TEST	
Clear instructions on HIV self-testing				
Yes, fully clear	100	79,4 %	105	83,3 %
Not enough clear	25	19,8 %	21	16,7 %
Not at all clear	1	0,8 %	0	0 %
Respondents confident to perform an HIV test on their own				
Very confident	72	57,1 %	94	75,2 %
Somewhat confident	43	34,1 %	25	20 %
Not enough confident	8	6,3 %	3	2,4 %
Not at all confident	3	2,4 %	3	2,4 %
Missing data			1	
Friends confident to perform an HIV test on their own				
I think majority would perform the test	60	47,6 %	81	64,3 %
I don't know if they would perform the test	55	43,7 %	32	25,4 %
I think majority would not perform the test	11	8,7 %	13	10,3 %
Partners confident to perform the test on their own				
I think majority would perform the test	38	30,2 %	48	38,4 %
I don't know / I'm not sure if they would perform the test	18	14,3 %	8	6,4 %
I think majority would not perform the test	5	4,0 %	4	3,2 %
Not applicable, don't have a partner	65	51,6 %	65	52 %
Missing data			1	



Chart 3:**Reasons for not performing an HIV oral fluid test on their own****Preferred type of HIV self-testing, required information and price**

Majority of the respondents would use both tests (saliva and blood) for HIV self-testing (36%), others would only prefer the oral fluid test (31%), and 20% only the blood test. Only a fraction of the MSM respondents would not perform HIV self-test (3.2%). A very small portion of the respondents would take an HIV test in a state-run institution (5.6%) or in a civil society organisation (4%) providing HIV testing, instead of doing an HIV self-testing.

Most of the respondents (41.3%) believe that the uncertainty of HIV test results is the major issue/concern as to not taking the test. Less concerning, yet equally important to them is

the price of the HIV self-tests (30.2%) and their not knowing any persons who could provide social or medical support in case the test turns out positive (27%). The fear of being left by their partners (4.8%) or the possible violence from their partners (0.8%) in case the test turns out positive were not recognised as significant factors that could prevent the respondents from performing the HIV test on their own. A large proportion of the respondents said none of the reasons could pose an issue for not performing the HIV test on their own (29.4%). **(Charts 4 and 5)**



Chart 4:

Preferred HIV test type for self-testing purpose

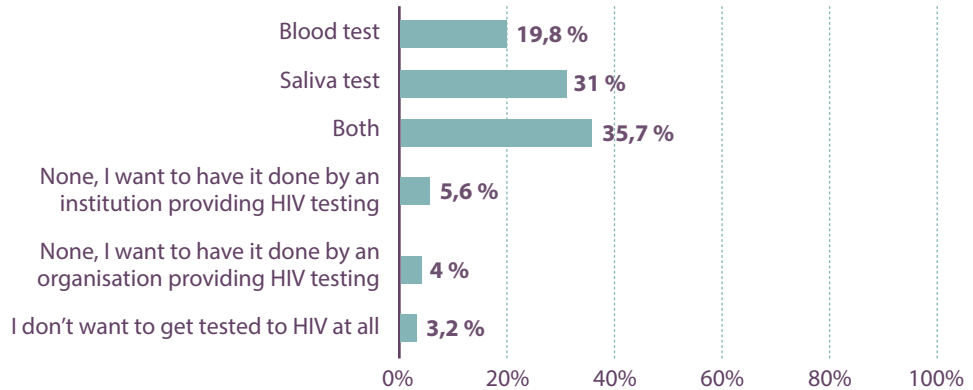
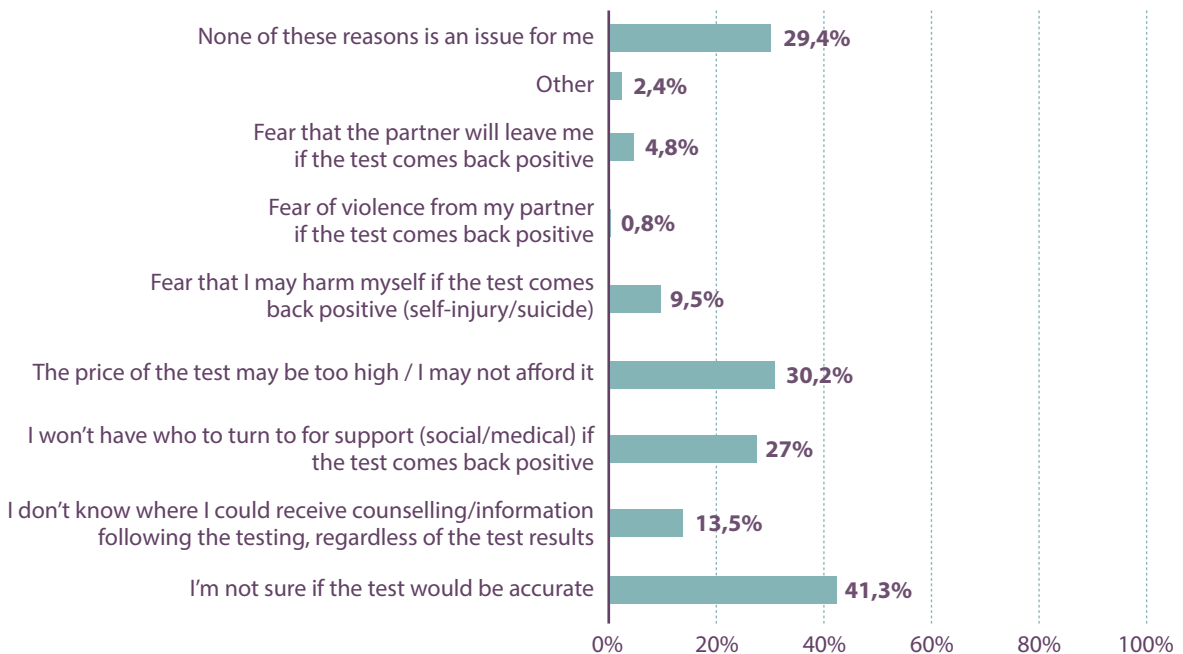


Chart 5:

Reasons [concerns] for not performing an HIV test on their own



For most of the respondents, the listed problems/concerns that could prevent them from performing the HIV test on their own are not very serious and could be overcome, if proper information was provided (31%). A large share (23.8%) of the MSM participants do not list any problem that could prevent them from performing an HIV test on their own, or do not believe that the listed reasons could pose greater concern or problem at all (20.6%). 16.6% of the respondents believe that the listed reasons pose a significant problem, for which they would not use HIV self-testing. For majority of respondents

(79.4%), understanding the HIV self-testing instructions is most important for taking the decision to perform the HIV test. For more than a half (51.6%) it is also important to know who they can seek for advice and support if the test turns out positive. The HIV test price, too, influences the decision-making significantly (48.4%). The respondents attach least importance to the presence of a trained person (near them) that could provide support when they perform the test (27%), as a factor that could influence their decision to perform an HIV test on their own, although not so insignificant (Charts 6 and 7).

Chart 6:
Level of importance of the listed concerns for HIV test performance

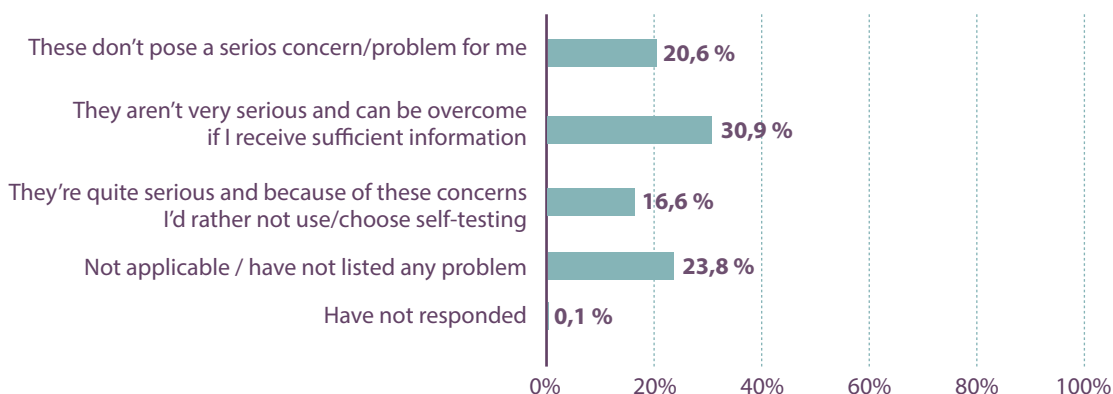
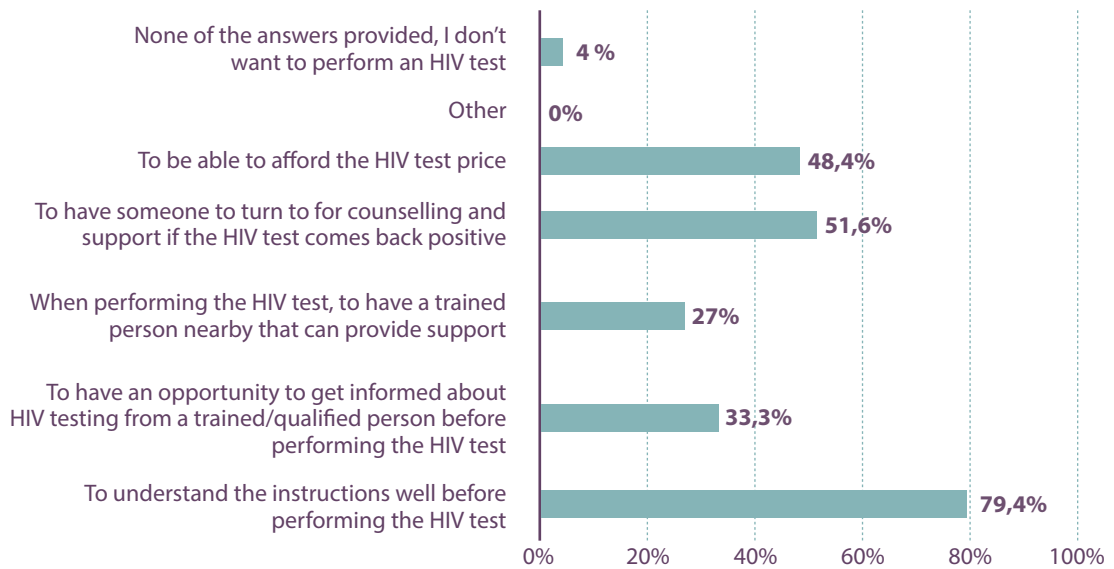


Chart 7:

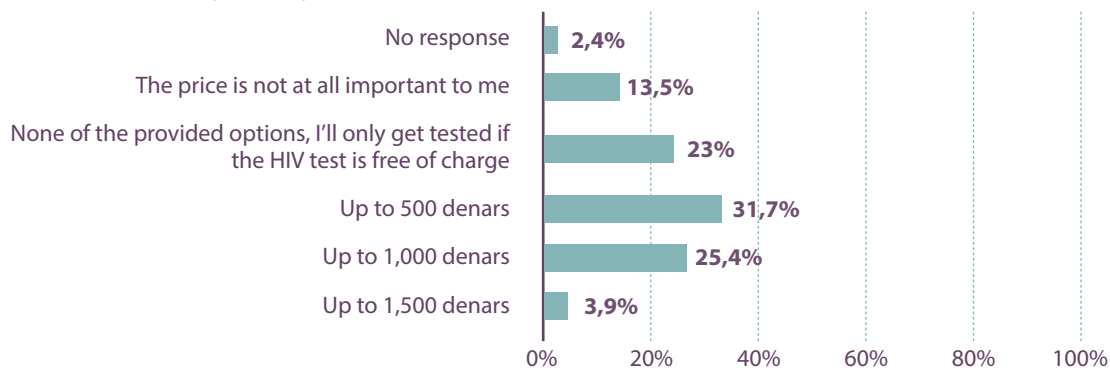
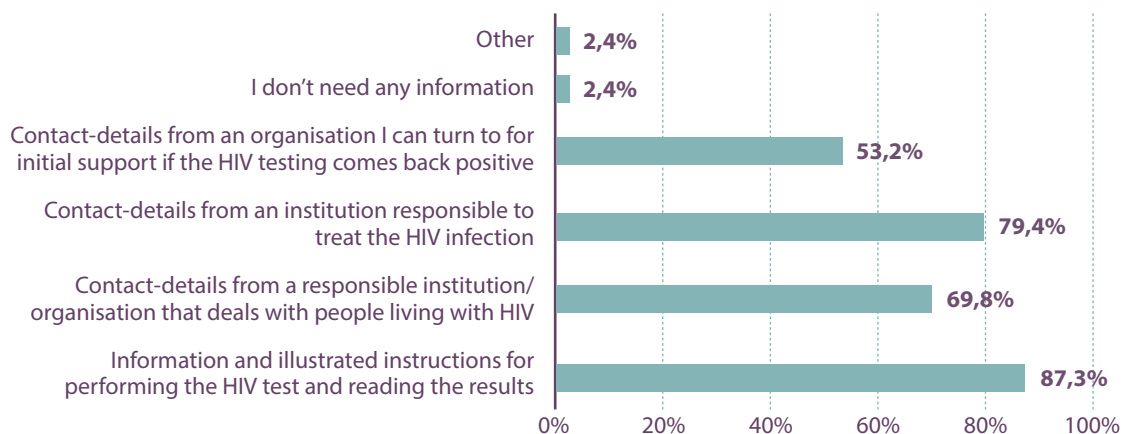
What is important to me to perform an HIV test on my own [oral fluid or blood]?



Most of the respondents would pay 500 denars to buy the HIV self-test (31.7%). An almost equal share of respondents reported that they could afford up to 1,000 denars to buy the HIV self-test (25.4%) and that they would use one such test only if it was free of charge (23%). Only a fraction of the participants reported that they could spend up to 1,500 denars to buy and perform the HIV test (3.9%). To a number of respondents, the test price does not play a role in determining to perform the self-test (13.5%).

For almost all the respondents it is of utmost importance that the HIV self-test kit includes sufficient information and illustrated instructions on how to perform the test and how to read the results (87.3%). Also, it is important that the HIV self-test kit includes information about the institution responsible for treating the HIV infection (79.4%). For half of the respondents it is important to be provided with contact details of organisations they can turn to for assistance and support if the test returns positive results (53.2%). Only 3 of the respondents (2.4%) reported that they do not need any information. (Charts 8 and 9)



Chart 8:**How much would you pay for the HIV test?****Chart 9:****Required information contained in the HIV self-test kit****HIV self-test kits distribution and information channels**

For most of the MSM respondents, HIV self-test kits should be made available in pharmacies (77.8%) or through civil society organisations (72.2%). Only a third of the participants believe that state-owned health facilities (34.9%) or

privately owned clinics (34.9%) are adequate locations for distribution of HIV self-test kits. The least preferred sites to collect this type of tests are the general practitioners' offices (14.3%). For the respondents who prefer to receive their HIV self-



test kits from civil society organisations or from field workers, the best way to this is to collect the kit from the organisations' offices (62.5%) or have it delivered by field workers (67%). The least preferred option for the respondents is

to have to perform the HIV self-testing in the premises of the civil society organisations or with the assistance from a trained person who provides support (21.6%). **(Charts 10 and 11)**

Chart 10:

Where / how should the HIV self-test kit be distributed?

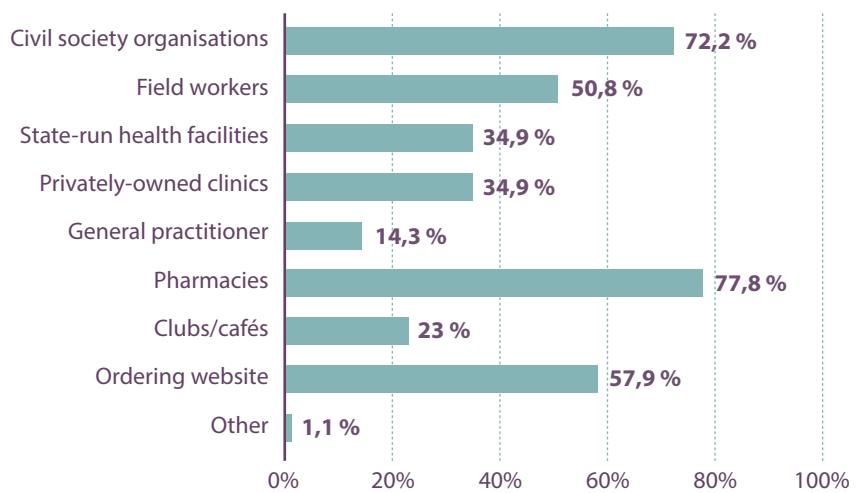
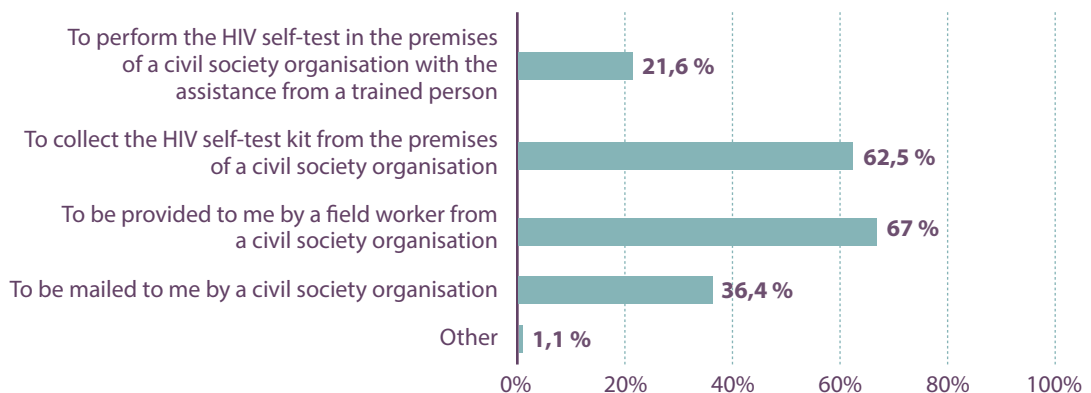


Chart 11:

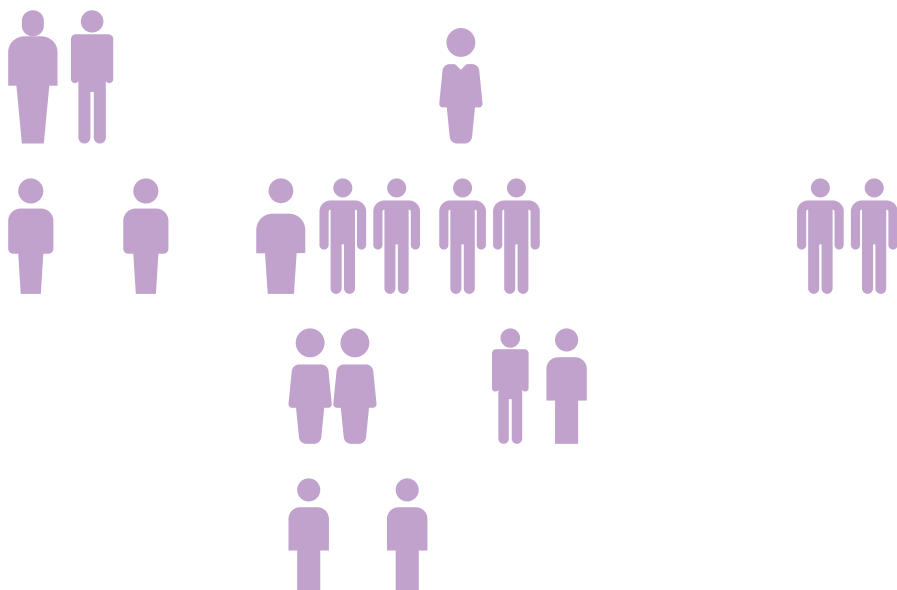
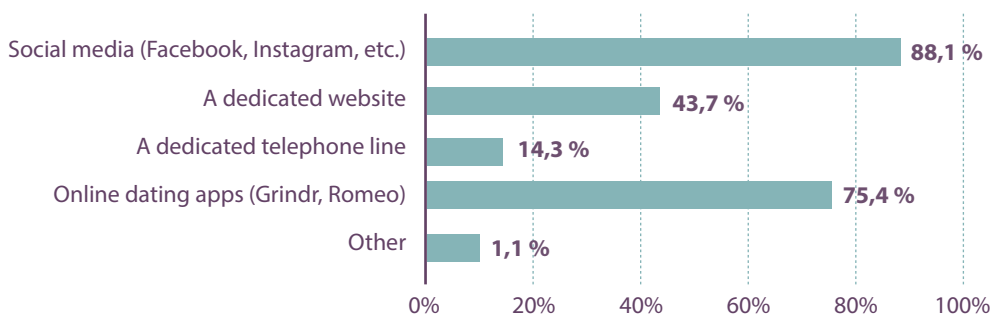
Method of availability of the HIV self-test kits in civil society organisations or through field workers



The respondents list the social media – Facebook, Instagram and other (88.1%) – and the online dating sites for gay men – Grindr, Planet Romeo (75.4%) – as the best way to inform about the HIV self-test kits and to promote them. The least useful option, according to the

respondents, from where their friends could be informed about the availability and possibility of using HIV self-test kits is to operate a special telephone line that could provide all the required information (14.3%). **(Chart 12)**

Chart 12:
How best can gay, bi... persons get informed about availability of HIV self-test kits?



DISCUSSION



Our survey into the acceptability of HIV self-testing, involving 126 respondents, has revealed that men who have sex with men show a relatively high level of acceptability of this HIV testing model. Contrary to the available research where MSM population prefers the HIV self-testing to be performed in institutions/clinics [6, 14], we found that this type of testing would be more acceptable if it was made available in pharmacies and from civil society organisations' field work.

The concerns that might possibly prevent the men who have sex with men from using this type of testing, including the complexity of the procedure for performing the test on one's own, would not be considered so great and insurmountable if sufficient information and support was provided for the testing. Although the fear of testing positive and not knowing who to turn to in such a case, and the suspicion in the accuracy of the results could be significant factors that may influence the decision-making regarding the HIV self-testing, their significance could be reduced if these issues were addresses more comprehensively during the HIV self-testing promotion. The fear of a positive test when performing the HIV self-testing is consistent with other research [15], as a reason that could affect the use of HIV self-testing kits. However, this reason is not specific to HIV self-testing, as it is mentioned as a factor influencing the decision-making regarding HIV testing among men who have sex with men who have never in their lives taken any HIV test,

regardless of the HIV testing models available in the country. Psychological factors, such as the fear of partners becoming violent or leaving them, or the possibility of the respondents inflicting harm to themselves upon learning the positive results were not listed as significant reasons preventing them from HIV self-testing, in contrast to some research carried out in Africa, where the necessity of pre- and post-test counselling was found to be particularly important to be addressed when implementing this testing model. Nevertheless, an overview of more than 300 papers has provided little evidence of serious psychological, medical or social consequences among people who have performed HIV self-testing [16].

As regards the HIV self-testing preferences, our survey has suggested that both tests (using oral fluid and blood specimens) are quite acceptable for men who have sex with men, though greater preference is attached to the HIV oral fluid test. The preference of the HIV self-testing on oral fluids over the blood test is more significant in the perception of men who have sex with men regarding their gay or bi friends, rather than themselves. The differences in the personal preferences between the two tests are not so significant as not to make both these HIV self-testing options available, so as to increase the HIV testing coverage in gay men and other men who have sex with men. Although the available pieces of research illustrate a greater acceptability of the oral fluid test [17, 18], other research exist where men who have sex

with men would sooner choose the blood test [5], so these, rather inconsistent findings in the literature may not significantly influence the HIV self-testing choice when introducing this model. Hence, a better understanding of the acceptability of particular type of HIV self-test could be obtained if a pilot study was carried out into the actual HIV self-testing among the target group. If oral fluid tests are used for HIV self-testing, a particular attention will have to be paid to the quality of the tests, because men who have sex with men have expressed their greatest doubts as to the accuracy of the results, which does not imply that this reason is not attributed to the blood tests, too, however, it is not so prominent there. On the other hand, if blood tests were to be procured, what is most important in the communication and information to men who have sex with men is to address and reduce the personal fear of drawing one's own blood by fingerprick, as the most significant reason preventing them from using the blood test for HIV self-testing.

Van Royen. H et al. [19] suggest that HIV self-test kits should include adequate information and instructions on how to perform the test, and particularly, what needs to be done following the testing, especially if the result is positive. In our survey, majority of the respondents have said that the information provided in the kit's user manual should be well elaborated and clear, so that they could perform the HIV self-testing with great accuracy, and more than half need to know who they can turn to for further care and support in case they test positive. It is therefore important, when procuring the HIV self-testing, to establish a solid connection with the programmes and institutions providing treatment and care to persons living with HIV

[17]. The fact should be taken into account that HIV self-testing is not a typical method for confirming HIV-positive status, so this testing model should be harmonised with the national HIV testing policies. HIV counselling and testing are some of the most effective and most important interventions for HIV epidemic management [20]. Sufficient evidence exists that clearly indicates that increased HIV counselling and testing reduces the HIV infection rate [21, 22]. Our survey, as with most other available studies, has confirmed that confidentiality and privacy ensured by this type of testing are one of the most important benefits from the HIV self-testing. This perception from our survey can be illustrated with the fact that majority of men who have sex with men would prefer that this test was made available in pharmacies, and that they require the least the presence of another person for support when performing the test. However, the strongest arguments against introducing the HIV self-testing refer exactly to the concerns about having no trained person that could offer pre- and post-test counselling to the person tested, which has come to stand as a symbol/value of the traditional voluntarily counselling and testing [23]. Although, in our survey, men who have sex with men have not contributed significant attention to the presence of another person that could provide support before the HIV self-testing, the pre- and post-test HIV counselling plays a crucial role. This is particularly important for adolescents and youth who attach great significance to counselling, because they are in the stage of their development when they acquire new skills that would be particularly important for taking better care of their health throughout their future lives [14].

If sold freely (e.g., in pharmacies), the price of HIV self-test kits may significantly affect the coverage of this type of testing. The available documents that were reviewed for the purpose of this survey illustrate that persons who wish to perform this type of HIV test would pay for this service. When it comes to which price is deemed acceptable, it ranges from 6 to 12 dollars in the countries in Africa [19], to 20 euros in the European countries [5, 24], and to 40 dollars in USA [25]. Our survey, where majority of the respondents were employed or otherwise generated income, has shown that they could afford the test even if its cost 1,000 denars (around 18 dollars), though majority would prefer to pay 500 denars (around 9 dollars) for the test. However, because of the fact that HIV testing programmes provide the HIV testing service free of charge, the HIV self-testing may not be accepted by those men who have sex with men who are of lower socio-economic status or are unemployed, also considering that a number of persons covered with this survey would only accept the self-testing model if it was available free of charge. Therefore, the planning should carefully consider the socio-economic characteristics, so that a larger share of the population could afford the HIV self-testing, particularly men who have sex with men, so that this model, too, could contribute to an increased number of tests taken in the country.

The proliferation of information and communication channels over the last decade has created new opportunities in the area of public health. The documents that were reviewed for the purpose of this survey demonstrate the importance of the new technologies in terms of greater coverage of gay men and other men who have sex with men with HIV prevention and healthcare promotion messages [25, 26, 27, 28]. The mobile social apps used for promotion of HIV self-testing (e.g., Grindr) can boost the demand for self-testing among men who have sex with men and have large potential to absorb the persons not yet tested, and connect them further to appropriate care and treatment services, in case of a positive result [29]. Consistent with this evidence, our survey, too, has shown that social networks (Facebook, Instagram) and mobile apps for MSM dating (Grindr) are the more acceptable information channels for HIV self-testing, rather than operating a special, dedicated info-line.



CONCLUSION

Gay men and other men who have sex with men have shown great interest in the introduction of HIV self-testing as a new HIV testing model in the Republic of North Macedonia. Privacy and confidentiality are considered the most important benefits for the persons who would opt for this type of testing, especially if it became available in pharmacies or in civil society organisations. Doubts in the accuracy of the results, the fear of receiving positive test results, and the lack of information about further support (post-test counselling), are factors that can affect the HIV self-testing acceptability. Although from the respondents' perception it can be concluded that there is a greater level of acceptability for the HIV oral fluid test over the HIV blood test, still, the differences are not so prominent.

It is worth giving it a thought to run a pilot project where both tests would be made available, so as to obtain a better insight into the acceptability of the test types. Easy-to-understand and illustrated information inserted in the HIV self-test kits, to help the persons perform the test on their own, and ensuring a good connection with the support services for persons living with HIV should be considered. The test price may influence the level of acceptability of the HIV self-testing, especially among persons of a lower economic and social status. The employed persons and those otherwise provided with income would find it acceptable if the price of HIV self-test kits did not exceed 1,000 denars (around 18 dollars), although it is recommendable to keep the price below 500 denars (around 9 dollars).

Social networks and mobile dating apps are particularly important in the promotion of HIV self-testing, in that they can increase the testing coverage among gay men and other men who have sex with men, unlike the traditional media or other means of information (e.g., telephone line).

RESTRICTIONS

This is the first ever survey into the HIV self-testing in the country, the findings of which can serve as an orientation for introducing this testing model in the national prevention programmes. The survey can be used to develop other studies that will explore in greater depth the factors shaping the acceptability of HIV self-testing among men who have sex with men, and among other key populations affected by HIV. This survey is restricted in the fact that the findings have resulted from the respondents' perception of the HIV self-testing, rather than from their experience with using this type of tests. This is why it is necessary to launch an HIV self-testing pilot project that will better explore its acceptability from the aspect of practice, rather than perception. Also, the survey was conducted only in the City of Skopje, which is an urban setting, and therefore we cannot generalise that similar findings would be established if the survey was extended to other towns (semi-urban areas) and to rural areas.

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