



Opinions about and Experiences with HIV Self Tests of Men who have Sex with Men (MSM)

Bachelor thesis

Department: Behavioral Sciences

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Student: F.A.A. Drawert

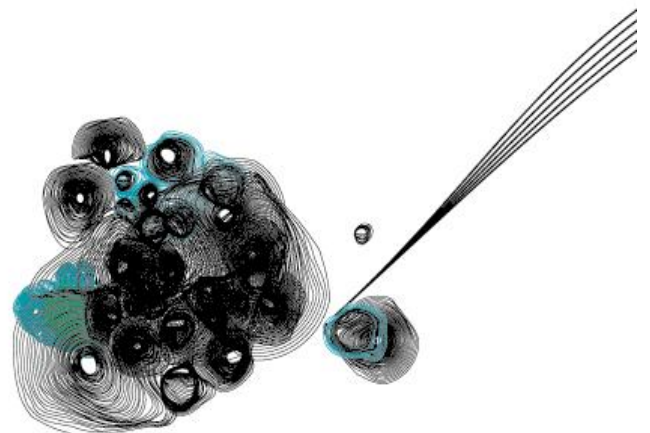
Student number: s0207195

Assessor 1: Dr. C.H.C. Drossaert

Assessor 2: R. van der Vaart, MSc.

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Abstract

Background and Aim: The literature states several advantages as well as disadvantages in relation to HIV self testing. A recent internet survey has shown that, although HIV self tests are illegal in the Netherlands, they are increasingly used by the Dutch population. Still, little is known about the reasons why potential consumers such as men who have sex with men (MSM) use HIV self tests. In order to get an understanding of the reasons to approve or disapprove HIV self tests MSM were asked for their opinions about the tests. Moreover, experiences of self test users with HIV self tests were assessed in order to explore whether proclaimed disadvantages from literature are experienced by actual consumers. **Participants and Method:** This qualitative study extracts a sample of 16 MSM who indicated having done a HIV test within the last three years (6 self test users and 10 conventional users). A semi-structured interview was developed to assess opinions and experiences concerning HIV self tests. Opinions were coded by selecting fragments or sentences from the transcripts, which were related to the components of the Attitude-Social-Influence-Efficacy (ASE) model (i.e. attitude, social influence and self-efficacy). Experiences were coded by merging reoccurring topics. **Results:** In the attitudinal component, MSM perceived anonymity, autonomy and rapid results as advantages of HIV self tests. Whereas test accuracy, a lack of support and financial costs were perceived as disadvantages. In the social influences component MSM perceived a negative attitude in society towards HIV testing and a positive image towards HIV self testing based on information on the internet. Moreover, some of the participants stated to have received warnings from public health care institutions regarding the use of HIV self tests. In the self efficacy component the majority of participants stated to be convinced to get access to HIV self tests. Exclusively non-users perceived access barriers or received public warnings regarding the use of HIV self tests. Overall, self test users mentioned more advantages and less disadvantages than non-users. While, four out of six users intended to keep using HIV self tests, six out of ten non-users intended to try self testing. Results concerning actual experiences with HIV self tests demonstrated that all of the self test users experienced self-tests as accurately and user-friendly. None of the users mentioned to lack support while conducting their HIV self tests. **Conclusions:** The fact that the majority of the participants intend to use HIV self tests and the overall positive experiences of actual users demonstrate, that HIV self tests are seen as suitable alternative to conventional HIV tests. HIV self tests can provide HIV diagnoses for people who perceive barriers and stigmatization in the use of conventional tests and can therefore be a powerful tool to increase HIV testing rates. Further con-

sumer specific, quantitative research can provide better insights in consumers' information needs. Additionally, it is very important to provide appropriate information to health care providers as well as policymakers.

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Introduction

The number of HIV infections in countries around the world is rising (Tanne, 2007). Health authorities such as The Centers of Disease Control (2011) strongly recommend regular HIV testing, in particular for risk groups such as men who have sex with men (MSM). Although HIV testing is strongly recommended as part of routine medical care, HIV infections in Europe are noticed late or not at all (Hamers & Downs, 2004). A possible solution to raise the detection rate of HIV infections would be to expand access to innovative HIV testing methods.

Within the last few years rapid HIV self tests have become available via the internet. HIV self tests can offer consumers an alternative to conventional HIV tests, which are provided to risk groups by health care institutions at no charge. Instead of consulting a doctor first, HIV self tests can be performed alone at home. It is “a test, or packet, bought via a store or via the internet, to detect a specific illness, without a mediating or intervening third party such as a doctor, or an emergency medical assistant” (Wilson et al., 2008). HIV self tests detect HIV antibodies with the help of a blood sample or oral fluids within 10 to 20 minutes (Campbell & Klein, 2006). It is important to mention that detecting HIV antibodies can take up to three month from the time of infection. The time between infection and the detection of the infection is called the “window period” (McDougal et al., 2005). During this time, test results may be false negative, which means the test will appear to be negative, even though a person might be infected with HIV. Otherwise, HIV self tests work accurately with a specificity greater than 99% (WHO, 2004).

Recent research detected several advantages of HIV self tests. HIV self testing can be an effective strategy to detect HIV diseases of people who are not willing to test themselves outside their homes (Lippman, Jones, Luppi, Pinho, Veras, & van de Wijgert, 2007; Jones et al., 2007). Self tests can be conducted in a desired environment without consulting a doctor first (Wilson et al., 2008). This alternative “[...] fit[s] in with current views about consumer autonomy and self-management, and may empower consumers to assume control over their own health care” (Ronda et al, 2009). Research found that the reasons to use self tests were to: “[...] avoid potential uncertainty, anxiety, frustration, or embarrassment” (Kearns, O’Mathuna & Scott, 2010). Self testing can be a suitable choice to check for a HIV infection without anyone outside their home knowing about it. Moreover, HIV self tests provide rapid test results. Immediate results mean shorter period where people have to deal with fear and uncertainty about their health status. Thus, HIV self tests may result in an improved quality and duration

of one's life. But for all that, access to HIV self tests can "lead to a reduction in HIV transmission and an increase in the early diagnosis and treatment of HIV disease" (Campbell & Klein, 2006) as well as reduce health costs.

Although many advantages of HIV self tests are recognized in the literature, HIV self tests are still legally forbidden in the Netherlands. Opponents of HIV self tests argue against the use of HIV self tests without educated, professional counseling and support (Greensides, Berkelman, Lansky & Sullivan, 2003). According to them lay people might use HIV self tests inappropriately and might cause application errors (Walensky & Paltiel, 2006; Whellams, 2009). Concerns against approval of HIV self test further include consumers who might misinterpret test results even though the test was appropriately conducted (Lee, Tan, Earnest, Seong, Tan, Leo, 2007). As reported by Haddow & Robinson (2005) possible test errors such as false positive or false negative test results can "[...] dramatically impact people's lives." Psychological consequences from HIV self testing could not be treated when the users remain anonymous. Following up registration at public health authorities would not be guaranteed. The financial costs that are connected to HIV self testing is also reported as a disadvantage of HIV self tests, since some people are less motivated to pay for HIV testing (Colfax, Lehman, Bindman, Vittinghoff, Vranizan, & Fleming, 2002).

Until today, European self test related research is mainly based on one single dataset of a Dutch cross-sectional internet survey (Ronda et al., 2009; Van der Weijden, Ronda, Norg, Portegijs, Buntinx, & Dinant, 2007; Gripson et al., 2010; Ickenroth, Ronda, Gripson, Dinant, de Vries, & van der Weijden, 2010). In this internet survey it was asked for the use of diverse self tests such as diabetes or cholesterol. The results indicated a rising interest in self tests (Ronda et al., 2009). Internet users "over 12 years" (Ickenroth et al., 2010) were asked to join the survey. Nevertheless, the internet survey focused neither on specific self tests nor on potential consumers. The participants of the Dutch survey may not be representative for HIV risk groups or potential consumers of HIV self tests.

According to Ronda et al. (2009) "more test specific research is needed" in order to "develop appropriate information "[...] about the pros and cons of self-testing." Missing consumer-focused and test-specific research (Campbell & Klein, 2006) as well as developments towards rising interest in HIV self tests (Ronda et al., 2009) demonstrated the need to explore in which ways HIV risk groups, such as MSM, actually perceive and experience the use of HIV self tests (Phillips & Chen, 2003; Campbell & Klein, 2006). Hence, this study invited MSM who used HIV self tests and MSM who used conventional HIV tests in order to express their personal opinions about HIV self tests. Expressed opinions of MSM towards HIV self

tests were connected to components of the Attitude-Social-influence-Efficacy model (ASE) of Fishbein and Ajzen (1988) in order to get an understanding of reasons for MSM to approve or disapprove the use of HIV self tests. To the best of my knowledge, research with focus on MSM concerning the use of HIV self tests was never done before (Campbell & Klein, 2006). Therefore, in addition to opinions about the tests, self tests users were asked to report their actual experiences with HIV self testing in order to explore whether proclaimed disadvantages from the literature are experienced by actual consumers. This innovative research was done in order to develop appropriate information for health care providers, policymakers and quantitative future research – with the final goal to reach even more people with the message of HIV testing.

1.1 Theoretical Framework

The ASE model of Fishbein and Ajzen (1988) define behavioral intention as an indicator of “how hard people are willing to try or how much of an effort they are planning to exert, in order to perform the behavior” (Ajzen, 1991). This intention might be similar to the intention of consumers to use HIV self test. Moreover, *intention* mediates the effects of the ASE variables: Attitude (A), Social influence (S) and Self-Efficacy (E).

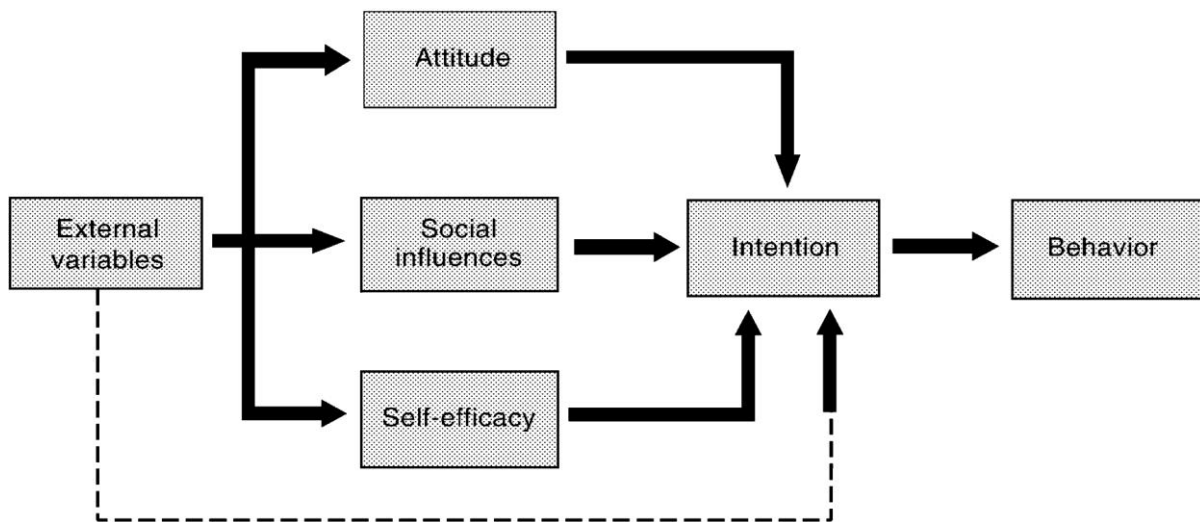


Figure 1: The ASE model (Fishbein & Ajzen, 1988).

According to the model a predictor of intention is *attitude*, which consists of perceived advantages and disadvantages of MSM towards HIV self tests. Among others expected benefits and costs of consumers determine if the use of HIV self tests is perceived as desirable. A

second predictor of intention is *social influences*. A person can be influenced by peers or family members with whom the person interacts regularly. Observed behavior of friends or other MSM might influence the intention to use HIV self tests. Moreover, an individual's intention to use HIV self tests may also derive from communications with network members or from the mass media such as television or the internet. Finally, intention is determined by one's *self efficacy*, which refers to the extent individuals believe to be able to succeed using HIV self tests. Hence, the use of HIV self tests can be predicted by assessing a person's belief about his or her self-efficacy. For instance, individuals may suffer from doubts to use HIV self tests in correct ways, although they are capable of using self tests appropriately. On the other hand, other individuals are extremely confident about using self tests accurately despite missing knowledge or skills.

In summary: The literature reported several advantages as well as disadvantages of HIV self tests. Yet, little is known about the reasons why MSM use HIV self tests and their experiences with the tests (Gripson et al., 2010; Ronda et al., 2009). Hence, this study invited MSM (6 conducted a self test; 10 a conventional test) to express their personal opinions about HIV self tests. In addition to expressed opinions, self tests users were asked to report their actual experiences with HIV self testing in order to explore whether proclaimed disadvantages from the literature are experienced by actual consumers.

1.2 Research questions

This study aims to explore the reasons why MSM approve or disapprove the use of HIV self tests. Therefore the ASE model was connected to stated opinions of MSM in order to find possible predictors of the use of HIV self tests. Hence, the following first research question was designed: 1) *“What are the opinions of MSM about HIV self tests?”*

Discussions about possible application errors and governmental sorrows about missing professional support gave rise to the question in which ways actual consumers experienced HIV self testing. Sub questions as “did MSM miss professional support while conducting their HIV self tests?” and “did MSM actually experience application errors?” were combined into one central research question: 2) *“How did men who have sex with men experience the HIV self test procedure?”*

2. Research design and Methodology

To find an answer on the research questions, semi-structured interviews were conducted with 16 MSM who had conducted a HIV test (6 conducted a self test; 10 a conventional test) within the last three years. None of the participants got any compensation. Before participating all of the participants verbally agreed with the written informed consent of this study (see appendix I). An overview over the characteristics of the participants will be presented in the results section.

Due to the fact that research with focus on MSM concerning the use of HIV self tests was never done before (Campbell & Klein, 2006) the current study used a qualitative approach to ensure that “[...] new and unexpected information” could arise (Boeije, 2008). Especially qualitative approaches yield the opportunity to enrich existing research by eliciting the consumer perspective on key topics such as the use of HIV self tests. Open ended questions can be helpful for investigating new facets that are not represented in existing research because of the fact that “(...) the private insights often escape the survey instrument” (Parker & Carballo, 1990). To explore these private insights, this study conducted face-to-face interviews to ensure that opinions of MSM as well as experiences with HIV self tests were properly understood.

2.1 Procedure

Since the extent of self test use was unknown, the snowball technique (word-of-mouth advertising) as well as personal contacts added considerably to the success of the recruitment. The president of the COC (Cultuur en Onspannings Centrum) in Enschede was asked to support the recruitment of MSM ($n = 7$). As a key respondent, the president of the COC provided entrance to a large social network of MSM. Additionally, personal contacts in Düsseldorf provided interviews with MSM who were members of anonymous gay groups ($n = 5$). Moreover, the AIDS institution in Münster was contacted via mail. Three employees agreed to participate ($n = 3$). One Dutch participant was contacted in Italy via Skype, after revealing the researcher great interest in the current research ($n = 1$).

2.2 Interview schedule

The three-part interview scheme was conducted for the first time (see appendix II). The first part of the interview was designed to access demographic variables and information about the participants, including age, occupation, number of sexual partner within the last year, having unprotected sex and number of HIV tests within the last three years. The second part of the interview was based on the ASE model and related to the first research question. The aim of this part was to explore opinions about HIV self tests. Opinions of self test users and conventional HIV test users were integrated into components of the ASE model. Finally, the third and last part of the interview only addressed HIV self test users. In this section self test users were asked to describe their actual experiences with HIV self tests. Reported experiences were divided into six categories: frequency of HIV self test use, source of information, order process, conducting procedure, test results, and impact of HIV self test. This part is related to the second research question and consisted out of many detailed questions regarding the actual use of HIV self tests.

2.3 Analysis

The taped interviews were converted into transcripts. Identifiable information about participants was removed. Transcripts were coded by selecting fragments or sentences, which included opinions of MSM about HIV self tests. Selected fragments were related to the components attitude, social influence and self-efficacy of the ASE model. Additionally, experiences of MSM with HIV self tests were coded by selecting similar fragments concerning experiences with HIV self tests in order to find common concepts within collected data. Common concepts were systematically compared, interpreted and reduced to topics which were related to the research questions. Especially the systematic comparison of diverse concepts led to an improvement and a specification of codes. This comparing process did not stop until the codes appeared to be stabilized. This means that no changes did occur in fixed codes. Finally, the core concepts were determined and elaborated. Those core concepts will be presented in the following result section.

3. Results

3.1 Description of the study group

Table 1 presents the characteristics of all participants ($N = 16$). Most of the participants were young age and from higher educational backgrounds. Nearly all of the participants mentioned to have had unprotected sex within the last three years. Furthermore, a majority of the participants had conducted one or two HIV tests within the last three years.

3.2 Attitude: Advantages of HIV self tests

Table 2 (see table 2 on the following page) presents a summary of all mentioned advantages regarding HIV self tests.

Certainty about health status: All of the participants ($N = 16$) mentioned that getting certainty about their current health status was the biggest advantage of HIV self tests. This is valid for self tests as well as for conventional HIV tests. Approximately half of the participants ($n = 7$) associated relief with HIV testing. One participant described his pleasant sense of relief, after he had performed his HIV test as followed: *“Het is goed voor je eigen geest... voor je eigen gevoel dat je weet dat je gezond bent, dan ben je opgeluchter.”*

Anonymity: Anonymity was perceived as a positive aspect of HIV self testing by almost all of the participants ($n = 15$). Some of the participants ($n = 7$) appreciated anonymous HIV testing because of feeling no need to justify their behavior (see table 2). One participant expressed his concerns about the possibility of being requested to justify his past behavior when visiting a doctor: *“Ich wollte nicht (...) dass der Doktor komisch fragt und ich dann irgendwas daher stottern muss... über warum ich da jetzt sitze.”*

Table 1: Characteristics of participants

Characteristics	Total ($N = 16$) n
MSM	16
<u>Age</u>	
21-30	12
31-40	3
41 or older	1
<u>Occupation</u>	
low	0
medium (MBO)	4
high (HBO of universiteit)	12
<u>Sexual partner within last year</u>	
1-2	4
3 or more	12
<u>Unprotected sex within last three years</u>	
Yes	14
No	2
<u>Number of HIV tests within last three years</u>	
1-2	12
3-4	0
5-6	3
7- more	1

Another participant supported the idea of anonymous HIV self testing by telling a story about a friend of him who had made bad experiences when visiting a health care institution: *"Een vriend van mij die bij de GGD een test heeft laten doen... hij bleek een SOA te hebben. Hij werd dus echt aangevallen, zo van, als je zo doorgaat met je levensstijl dan komt het niet goed met jou (...) hij wilde zich gewoon niet verklaren (...) met name voor die vriend van mij, denk ik dat het heel ideaal is."*

Table 2: Perceived advantages of HIV self tests

Advantages	Quotes	Total (N = 16) n
<u>Certainty about health status (+)</u>		
Urge for certainty	<i>"(...) dat ik veilig weet of het positief is of niet. De onzekerheid is nog veel erger."</i>	16
Urge for relief	<i>"Dan voel je je beter (...) ik was hartstikke blij dat ik verder niks had (...) op dat moment was ik daar zo opgelucht over dat ik in feite een groot spandoek, niet letterlijk maar, toen mocht iedereen dat wel weten, ja!"</i>	7
<u>Anonymity (+)</u>		
No need to justify behavior	<i>"Mich können Menschen in das Institut reingehen sehen, die Menschen die dort arbeiten sehen mich und (...) nachher wollen sie wissen was du da machst (...) ich habe keine Lust Rede und Antwort zu stehen. Das geht sie einen Dreck an!"</i>	7
Avoiding embarrassment	<i>"En dan kom je in de wachtkamer aan (...) en dan zitten daar een hele rij mensen. Iedereen kijkt je aan van: Oh jij ook dus. -Afschuwelijk! (...) En je ziet er mensen lachend uitkomen maar je ziet er ook mensen anders uitkomen. Dan wil ik er niet aan denken, dat de buurvrouw in het ziekenhuis werkt. (...) de hele straat weet het anders ook meteen"</i>	8
<u>Rapid test results (+)</u>		
Urge for quicker reassurance	<i>"Het is afschuwelijk om een week te moeten wachten. Dat is een ramp, puur een ramp (...) eigenlijk kun je niet wachten. Je kunt niets meer doen. Je bent alleen maar met een ding in je hoofd bezig"</i>	6
<u>Autonomy (+)</u>		
Urge for control over test results	<i>"Man hat 's selbst in der Hand, das bedeutet man würde selbst das Ergebnis lesen. Man bekommt es nicht von jemandem gesagt"</i>	5
Urge for being independent of time	<i>"Die Kreisbehörde hat zu bestimmten Zeiten offen, aber da kann ich nicht"</i>	7
Urge for familiar environments	<i>"Ik mag beslissen waar ik de zelftest gebruik. Ik kan dat dus in een gebruikelijke omgeving doen"</i>	1

Furthermore, some of the participants ($n = 8$) mentioned concerns about possible embarrassments when going to public health care institutions. One participant argued against going to public health care institutions because of feelings of shame: *"Es war Scham (...) ich dachte mir, shit, niemand soll jemals erfahren, dass ich vielleicht eine Geschlechtskrankheit"*

mit mir herum trage.“ By assuming that some men were married but nevertheless active in the gay scene another participant mentioned understanding for potential feelings of embarrassments. The participant further assumed that if those men would get concerns about potential infections, they would probably favor HIV testing in an anonymous setting in order to avoid embarrassments: *“Männer, die verheiratet sind, die aber Sex mit Männern haben, für die ist es einfacher nicht darüber zu sprechen. Besonders, sie können ja nicht zu ihrem normalen Hausarzt. Der Hausarzt weiß meistens auch über die generelle Lebenssituation.”*

Rapid test results: Rapid test results were appreciated by six participants (see table 2). One participant argued that HIV self test results were available within minutes, without the hassle of waiting time: *“Die Testergebnisse kriegt man ja auch ziemlich schnell, das wär dann auch der nächste Vorteil, dass man das Ergebnis nach 5 Minuten hat. Dann muss man nicht so aufgeregt sein”* By adding that waiting on his HIV test results had catastrophic characteristics another participant described his inability to think about something else while waiting on his test results: *“Het is afschuwelijk om een week te moeten wachten. Dat is een ramp, puur een ramp (...) eigenlijk kun je niet wachten. Je kunt niets meer doen. Je bent alleen maar met een ding in je hoofd bezig.”*

Autonomy: Some of the participants ($n = 5$) favored having the control over seeing their test results without depending on others (see table 2). Moreover, one participant preferred conducting HIV self tests in familiar environments. According to this participant HIV self tests provided him the possibility to decide not only when to use the test but also where to use the test (see table 2). Another participant emphasized the possibility to use HIV self tests independently at any time: *“Man kann ihn zu jeder Zeit machen, man ist nicht so an die institutionellen Rahmenbedingungen geknüpft das man irgendwie sagt ich muss heute um 5 Uhr dahin weil von 5 bis 6 gibt es da diese Angebote.”*

3.2.1 Attitude: Disadvantages of HIV self tests

Fear: About half of the participants ($n = 9$) were afraid of HIV positive test results (see table 3 on the following page). This is valid for self tests as well as conventional HIV tests. Because of being afraid of HIV positive test results one participant explained that he had put off HIV testing several times: *“Ich hatte schon immer vor mal früher los zu gehen (...) aber ich hab’s immer wieder verschoben (...) es war die Angst vor den Testresultaten (...) ich will mich mal testen lassen...heute...morgen...übermorgen...mal schauen.”*

Table 3: *Perceived disadvantages about the use of HIV self tests*

Disadvantages	Quotes	Total (<i>N</i> = 16)
		<i>n</i>
<u>Fears (-)</u>		
Having the fear about positive test results	"Het was wel een beetje eng, ik was wel bang (...) Je probeert er niet aan te denken (...) ik ben misschien een beetje dramatisch maar ik vroeg me af of ik dan nog wel door kan leven"	9
<u>Test accuracy (-)</u>		
Concerns about application errors	"Da können Fehler unterlaufen, man könnte zum Beispiel zu wenig Blut nehmen (...) Ich glaube eine Laie der bei sich zu Hause den Test macht ist bestimmt nervös, deshalb können einfach Fehler passieren"	8
Concerns about test errors	"(...) es gibt ja halt das Problem, dass ein falsches positives Ergebnis möglich ist. Also, dass ich denke ich hätte HIV, wobei ich kein HIV habe"	14
<u>Limited testing (-)</u>		
HIV self test does not test for other STD's	"Bij de GGD heb ik een volledig pakket van testen. Waarom zou ik dan een test voor alleen maar HIV gebruiken (...) het zou prettiger zijn als er een pakket van testen voor thuis zou bestaan net als bij de GGD"	3
<u>Financial costs (-)</u>		
Health care institutions offer HIV tests for free	"Als je voor iets moet betalen wat je gewoon via de verzekering kunt doen...Ja, daar heb ik problemen mee, dan ga ik liever naar de GGD of de huisarts toe. Net zo makkelijk"	4
<u>Lack of support (-)</u>		
Missing professional support	"Wat nou als er wat positief uitkomt, wie is er dan op dat moment om jou in de wereld te gaan ondersteunen (...) in dat proces ga je met zo veel vragen zitten die geen enkele vriend of wie dan ook kan beantwoorden want niemand is een arts"	9
Missing emotional support	" (...) wenn man zu Hause ist, ist es wahrscheinlich besser wenn einer dabei ist, weil man Geborgenheit braucht. Ja, ein bisschen Geborgenheit, man sollte schon jemanden dem man Vertraut dabei haben, also jemand dem man gerade mal so flüchtig kennt nicht. Das gibt einem dann mehr Sicherheit"	3
<u>Misuse of test results (-)</u>		
Concerns about possibility of cheating	"Ik vind het een heel groot gevaar. Mensen kunnen heel makkelijk frauderen (...) Als ik geen SOA's heb en ik weet een vriend van mij die heeft aids en ik zou die test voor hem doen en geef hem die test mee, dan zou hij aan zijn partner die test kunnen laten zien"	1
<u>Rapid test results (-)</u>		
Concerns about less learning effects because of rapid results	"Laat ze eens bang zijn (...) Het is wel eens goed dat ze die angst voelen als ze een week moeten wachten (...) het is absoluut psychologie. Het is echt mensen laten beseffen wat ze fout hebben gedaan"	1

Test accuracy: Some of the participants ($n = 8$) stated major concerns about possible application errors regarding HIV self tests (see table 3). Besides concerns about possible application errors a majority of participants ($n = 14$) emphasized potential test errors. One participant mentioned that some people might go on sleeping with partners because of being convinced of having HIV negative test results. Nevertheless, test errors could have happened: " (...) wenn's wirklich ein falsches Testergebnis ist und man ist dann eigentlich positiv und denkt

man es ist negativ und hat danach ungeschützten Geschlechtsverkehr ist das natürlich auch nicht so super (...) könnte halt ein Fehler entstehen.“

Limited testing: Approximately a quarter of the participants ($n = 3$) criticized HIV self tests by arguing that the tests could exclusively detect the HI- virus but no other possible sexually transmittable diseases (table 3). Hence, one participant stated clear and brief that he would not consider using HIV self tests unless home testing kits were constructed to detect most of the sexually transmittable diseases: *“Het probleem is, het zou ja dan alleen tegen HIV zijn en niet tegen andere SOA ‘s.”*

Financial costs: A few participants ($n = 4$) mentioned financial costs as perceived disadvantage of HIV self tests (table 3). One of these participants added that he would not use HIV self tests as long as health care institutions would provide free access to HIV tests: *“Waarschijnlijk is zo een test ook heel duur! En bij de GGD is het gratis.”*

Lack of support: A majority of the participants ($n = 12$) declared that they would lack professional support when using HIV self tests on their own (see table 3). Some other participants ($n = 3$) mentioned that it was only important to them that a friend or a familiar person would join them: *„Es fehlt einfach diese Auffanghilfe (...) einfach eine Person, die der Person dann auch Hilfe gibt. Hilfe, mit der Sache umzugehen (...) das kann auch ein Freund sein“*

Misuse of test results: One participant assumed the possibility of cheating with HIV self test results (see table 3). More precisely, he saw a danger in people who might exchange their HIV test results. According to him MSM might exchange their HIV test results with others in order to pretend to be HIV negative.

Rapid test results: Furthermore, one participant criticized the speed of HIV self test results by arguing that there was too few learning effect for HIV self test consumers (see table 3). The participant added that out of his point of view especially long and exciting waiting periods were very important for people in order to understand what they would have done wrong.

3.3 Social influences

Approximately half of the participants ($n = 9$) had heard of a HIV self test before (see table 4). Exact two out of nine participants, who had heard of a HIV self test before, had spoken with their friends or family about their idea to conduct HIV self tests (see table 4). The other six participants preferred not speaking about their use of HIV self tests: *“Nein, mit niemandem. Das hat keinen zu interessieren (...) das war mein persönliches Ding.”*

One participant perceived warnings about HIV self tests within the internet. According to this participant German internet websites openly advised people to better go to public health care institutions in order to guarantee absolute certainty about test results (see table 4). Moreover, some other participants ($n = 3$) received warnings from health care institutions regarding reliability concerns: *“De GGD zegt dat de betrouwbaarheid nog wel eens de vraag is.”*

Table 4: Social influences concerning the use of HIV self tests

Social influences	Quote	Total ($N = 16$) n
Heard of HIV self test	<i>“Ik heb daar al wel van gehoord (...) van het internet. Ik probeer zo veel mogelijk informatie die vrij komt over dat hele HIV gebeuren, dat probeer ik bij te houden”</i>	9
Communication around use of HIV self tests with immediate environment	<i>“Beim Selbsttest habe ich (...) mit meinen Eltern (...) drüber gesprochen und die meinten, wenn du es machen willst dann mach’s”</i>	2
Perceived warnings regarding test reliability issues	<i>“(...) da wird ganz stark von abgeraten (...) da können Fehler unterlaufen, man könnte zum Beispiel zu wenig Blut nehmen (...) dass wurde mal besprochen in einer Teamsitzung bei uns (...) also beim Aidsschutzinstitut”</i>	4
Perceived positive images of HIV self tests from the internet	<i>“(...) das Internet hatte relativ gute Worte für den Selbsttest übrig (...) hab einige Erfahrungsberichte gelesen (...) die sagten, der Test sei schon sicher”</i>	5
Perceived prejudices of society towards HIV testing	<i>“Dan gaan ze jou toch anders zien (...) dat ze denken van (...) heb je onverstandig seks gehad?”</i>	12

In contrast to perceived warnings, some other participants ($n = 5$) received positive images about HIV self tests (see table 4). All of those five participants mentioned that HIV self testing was touted on diverse websites in the internet. One participant was assured of an internet website that the HIV self test would be reliable: “(...) *da stand dann halt eben, dass es 99,9 % sicher ist und dann dacht ich halt eben ja dann ist es gut.*“

Furthermore, almost all of the participants ($n = 12$) stated concerns about being judged by society because of testing their HIV status (see table 4). Half of the participants thought of prejudices of society concerning unprotected sex: “(...) *ze vinden het allemaal maar raar omdat ze zo iets hebben van, ja het is toch niet nodig, als je het veilig doet dan hoef je je niet te laten testen.*” Moreover, two participants added that from their point of view the society might possibly assume that people who get HIV tested consequently had many sexual partners: “*Diese Stereotypen hängen halt daran (...) dass die Person jede Nacht mit zwei, drei anderen Menschen im Bett war und sich sonst wo herum gevögelt hat.*“ Some other participants acknowledged that the society might assume that people who would go to public health care institutions could carry a disease. One participant put his concerns about potential prejudices of society against him in words: “*Straks gaan ze denken dat ik een SOA heb juist omdat ik daar naartoe ga.*”

3.4 Self-efficacy

All of the participants ($N = 16$) were convinced to get access to HIV self tests (see table 5). Nevertheless, some of the participants ($n = 4$) remarked concerns regarding access barriers to HIV self tests. One participant quoted that he would not have the appropriate payment instruments in order to buy HIV self tests via the internet (see table 5).

Table 5: *Self-efficacy concerning access to HIV self tests*

Self-efficacy	Quotes	Total ($N=16$) n
Convinced to get access to HIV home-test	<i>"De zelftest die koop ik gewoon. Punt."</i>	16
Perceived access barriers	<i>"(...) bei der Bestellung über Internet. Also ich habe keine Visa Karte oder Kreditkarte"</i>	4

Some other participants ($n = 2$) noticed concerns about possible language difficulties because of ordering HIV self tests from abroad. According to those participants enclosed test instructions were accessible only in English or other non-mother tongue languages. Different languages might consequently lead to a lack of understanding what in turn might lead to difficulties while conducting HIV self tests: *“Ik spreek slecht engels (...) er zouden problemen kunnen ontstaan omdat het niet in het nederlands beschreven staat.”*

3.5 Intention future HIV self test use

Approximately three quarters of participants ($n = 10$) declared their intention to use a HIV self test in the future (see table 6). Nevertheless, some of those added requirements regarding the potential future use of HIV self tests. One of this mentioned requirements for the use of HIV self tests in the future was having certainty about the reliability of HIV self tests: *“Ik denk dat het wel prettig is als ik weet dat de test even betrouwbaar is als bij de GGD, dat zou ik heel belangrijk vinden.”* Another mentioned requirement for the use of HIV self tests was that health care institutions possibly refuse free access to HIV tests in the future: *“Als het bij de GGD niet meer kosteloos zou zijn zou ik een thuistest kopen.”*

Table 6: *Intention future HIV self test use*

Intention	Quotes	Total ($N=16$) n
Yes	<i>“Ja, absoluut, 100%. Ik zou de zelftest ook verder aanbevelen”</i>	10
No	<i>“Ich würde es bei mir selber nicht machen. Ich hätte Angst, dass ich selber was falsch mache“</i>	6

3.6 Experiences of HIV self test users

Frequency of HIV self test use: As mentioned, six of the sixteen participants had used a HIV self test within the last 12 month. Most of the self test users ($n = 5$) had used a HIV self test once or twice. Only one participant declined to use HIV self tests on a regular base (see table 7).

Source of information: All of the participants ($n = 6$) received their information about HIV self tests over the internet (see table 7). Two participants did not remember their searching path at all. However, some other participants ($n = 4$) could roughly remember their search path within the internet and mentioned the search machine “Google”: *“Google ist dein Freund, du rufst es auf, gibst HIV Test ein und die schlagen dir dann sofort Seiten vor.”*

Table 7: Experiences of users with HIV self tests

Experiences	Quotes	Total ($N = 6$) n
<u>Frequency of HIV self test use</u>		
1 time	<i>"Das kann ich ganz genau sagen, dass war genau 1 mal"</i>	2
2 times	<i>"Ja, jetzt schon 2 mal"</i>	2
3 times or more	<i>"Meer dan 15, denk ik"</i>	1
<u>Source of information</u>		
Internet	<i>"(...)heb ze in ieder geval toen op het internet gevonden"</i>	6
<u>Order process</u>		
Recall name of internet website	<i>"Nicht wirklich (...) Ich müsste jetzt in den Verlauf meines Browsers gucken. Das merkt man sich ja nicht wie das hieß"</i>	0
Recall name of self test	<i>"Ik heb hier nog de Miratustest liggen, maar die is uit de markt gehaald. De ministerie in nederland heeft die daaruit gedrukt (...) Die andere heet TysonBio researcher"</i>	1
Perceived difficulties on pricking oneself with a lancet	<i>"50% komt door de grens heen. De andere worden tegengehouden, dus die komen nooit aan. En als ze niet aankomen, dan bel ik op en dan sturen ze een nieuw pakketje en dan komt het wel aan"</i>	1
<u>Perception of price</u>		
low	<i>"Genau 14.99 Euros. Ich konnte es kaum glauben, das ist ja ein spott Preis"</i>	3
acceptable	<i>"Ze verkopen ze voor 20 Euros per stuk (...) Vind ik prima. Alles is beter dan naar een dokter te moeten gaan"</i>	3

Table 7 (continued)

Experiences	Quotes	Total
		(N = 6) n
<u>Conducting procedure</u>		
Perceived difficulties	<i>„Es war eine Überwindung mir selber in den Finger zu stechen, schon ein bisschen, aber es war ja nur ein kleiner Pikser“</i>	1
Good comprehension of test instructions	<i>"Ik heb die vroeger gelezen maar nu niet meer. (...) Die was toen heel duidelijk, ja die was echt perfect"</i>	6
Low perceived risk of application error	<i>"Eigentlich nicht hoch, weil (...) die Beschreibung ist wirklich haargenau...also wenn dann vielleicht 1%, nicht mal, ein ½%."</i>	6
<u>Test results</u>		
Perception of waiting time		
excitement	<i>"Das waren 5 oder 7 Minuten, ich glaube ich hab mir da 3 oder 4 Zigaretten geraucht (...) nervös war ich"</i>	5
even-tempered	<i>"Ich dachte, dass ich sowieso negativ bin, deswegen war ich eigentlich nicht so aufgeregt (...) Ich habe einfach Fernsehen geguckt"</i>	1
Identification of test results by one line	<i>"Und dann sah ich eine Linie...eine Linie ist negativ und zwei positiv"</i>	6
HIV negative results	<i>"Es war eindeutig negativ"</i>	6
Relieved after seeing test results	<i>"Ein erleichterndes Gefühl, weil ich sicher war, dass ich auf keinen Fall HIV-positiv bin"</i>	6
Trust in test results	<i>"Ik geloof daar in ieder geval in (...) er is geen enkele test die 100 % is (...) meer dan 99 % is voor mij voldoende"</i>	6
<u>Impact of HIV self test</u>		
Sexual behavior change after conducting HIV self test	<i>Ja, (...) ich war erst mal super froh, dass ich es nicht hatte und habe mir auch gedacht, dass ich in so eine Situation erst mal nicht mehr kommen muss (...) ich versuch schon besser zu verhüten (...) es ist ein Glückspiel gewesen, dass ich gewonnen habe, Gott sei Dank. Und man muss nicht zu oft Glücksspiel betreiben, weil irgendwann verliert man halt.</i>	4

Order process: None of the participants were able to recall the name of the internet websites where they had retrieved their HIV self test from (see table 7). Further, only one of the participants perceived difficulties when ordering his HIV self test via the internet (see table 7). This participant had ordered a HIV self test but did not receive anything. Hence, the participant called the HIV self test company in order to inform them about the failed order process. Thereupon, the HIV self test company send him a new HIV test kit. Furthermore, all of the participants ($n = 6$) perceived prizes of HIV self tests in the range between 14.99 Euros and 35 Euros as low or at least acceptable: *"(...) das kostet ja wirklich fast nichts, irgendwie 35 Euros oder was habe ich dafür bezahlt."*

Conducting procedure: One of the participants perceived difficulties while conducting his HIV self test because of perceiving discomfort when pricking in his finger with a provided needle. It took him quite an effort to prick in his finger (see table 7). However, a majority of participants ($n = 5$) did not experience any problems while conducting their HIV self tests. According to most of the participants it was almost impossible to create application or other test errors: *“Ich würde sagen, dass es auf jeden Fall idiotensicher war. Ich weiß (...) dass die Schritte jeweils nummeriert waren und dass du dann chronologisch wusstest was mach ich zuerst und so weiter. Ich hab das so in Erinnerung, dass die Anwendung überhaupt kein Problem war.”*

The package insert was clear to all participants. Nevertheless, one participant expressed his concern about possible language difficulties for people who might lack an understanding of English test instructions: *“(...) wenn man kann halt kein Englisch kann, dann können, denk ich, Fehler wegen Missverständnissen entstehen (...) weil die Verpackungsbeilage nicht Deutsch war.”*

All of the participants perceived low risks of possible application errors (see table 6). One participant noticed the fact that he was not an expert in conducting HIV self tests. Nevertheless, he could not imagine what could have gone wrong: *“Ich als Laie muss sagen, das Risiko ist unvorstellbar gering, aber ich bin auch kein Molekularbiologe und Virologe und ich weiß gar nicht was alles schief gehen kann und deshalb schätze ich es gering ein.”* Another participant called it even difficult to create application errors because of perceiving the conduction procedure as absolutely easy. This participant rather assumed misinterpretations of test results than the possibility of application errors: *“Ich denke, Anwendungsfehler sind schwierig, weil sich in die Hand piksen und einen Blutropfen auf den Streifen packen, da kann man nicht allzu viel falsch machen. (...) Es gibt sicher eher Interpretationsfehler.”*

Test results: After conducting the HIV self test almost all of the participants ($n = 5$) felt excitement while waiting for their test results. According to one participant, waiting five minutes felt like waiting one hour: *“5 Minuten vorher kam Kribbel auf und bin ich unsicher geworden, das war schon unangenehm und in der Wartezeit ...ehrlich gesagt hab ich mich abgelenkt. Ich wusste, dass 5 Minuten die man auf einer Sanduhr abzählen kann, sich anfühlen wie eine Stunde.”* Only one participant stated that he would have been even-tempered

while waiting on his HIV test results. He argued that he had expected his test results to be negative; therefore, he did not feel the need to be excited (see table 7). All of the participants ($n = 6$) received HIV negative results, which were recognized by one line. One participant described seeing his HIV negative test results as followed: *“Und dann sah ich eine Linie...eine Linie ist negativ und zwei positiv.“*

According to all of the participants seeing only one line implied gigantic feelings of relief. One participant highlighted his relieved feelings because of his new acquired certainty about not being HIV positive: *“Ein erleichterndes Gefühl, weil ich sicher war, dass ich auf keinen Fall HIV-positiv bin.“*

Sexual behavioral changes: Four out of six participants declared changes in their sexual behavior towards more protected sex after using HIV self tests. Primary exertion about possible bad test results were most of the times converted into feelings of relieve: *“Ja, ich hab den Test gemacht und war wahnsinnig erleichtert und danach hab ich alles komplett geändert, danach hatte ich nochmal 2 One-Night-Stands und bei denen habe ich beide Male verhütet (...) Also da hat sich auf jeden Fall was verändert. Es ist so eine große Anspannung diesen Test zu machen... und auch diese 3 Monate warten... du denkst diesen Stress tue ich mir nie wieder an, auch wenn ich noch so betrunken bin (...) ich glaube das passiert mir nicht mehr.“* Because of remembering concerns and uncertainties another participant started using condoms more frequently to prevent negative feelings from now on. This participant called his sexual behavior gambling before using his HIV self test: *“Ja, weil ich den begründeten Verdacht hatte eventuell HIV zu haben, war ich erst mal super froh, dass ich es nicht hatte und habe mir auch gedacht, dass ich in so eine Situation erst mal nicht mehr kommen muss. (...) ich versuch schon besser zu verhüten. (...) Es ist ein Glückspiel gewesen, dass ich gewonnen habe, Gott sei Dank. Und man muss nicht zu oft Glücksspiel betreiben, weil irgendwann verliert man halt.“*

In contrary, two other participants stated that they would not have changed their sexual behaviors after conducting their HIV self test. One of them explained that he was in a fixed relationship. Therefore, this participant mentioned to go on using no condoms: *“Nein ich hab es nicht verändert. Habe immer noch meinen Freund. Mit ihm schlafe ich weiterhin ohne Kondom.“*

4. Discussion

Although the sample size in the current study was relatively small, the present findings gain an insight into the determinants of the use of HIV self tests. The ASE model appeared to be an appropriate choice for representing explored opinions about the use of HIV self tests. Opinions, which were attached to the ASE components, seemed to influence the participants' intention to use HIV self tests. It is assumed that there might be correlations between opinions about HIV self tests and the intention of MSM to use one. Nevertheless, the only way to approach cause and effect is quantitative research (see future research).

Regarding the attitudinal component, MSM perceived anonymity, autonomy and rapid results as advantages of HIV self tests. These factors seemed to facilitate the use of HIV self tests and are consistent with existing research (Kearns, O'Mathuna & Scott, 2010; Ronda et al., 2009; Kassler et al., 1998). MSM who are scared about being seen in health care institutions, can use HIV self test without anyone outside their home knowing about it (Kearns, O'Mathuna & Scott, 2010). HIV self tests can be ordered via the internet and can be an option for those who do not have transportation opportunities to local health care institutions (Ronda et al., 2009). Moreover, waiting periods seem to hinder the use of conventional HIV tests (Kassler et al., 1998). Therefore, particularly rapid test results seem to facilitate HIV self testing for groups who are scared of waiting periods. Furthermore, the lack of support, accuracy and financial costs were factors which were perceived as disadvantages of HIV self tests. Those factors can be found in the research archive of HIV self tests (Walensky & Paltiel, 2006; Whellams, 2009; Colfax et al., 2002; Greensides et al., 2003).

In contrast to factors, which were already mentioned in literature, unexpected results were found concerning the misuse of HIV self test results. One participant emphasized that people might exchange or tamper with their HIV self tests. Lying about or falsifying test results might lead to new HIV infections. However, it is assumed that people who want to cheat will always find ways and measures to carry out illegal behavior. HIV test results provided by health care institutions are therefore also not immune to fraud, if intended.

Mentioning concerns about people who might tamper with their test results in order to prove to be HIV negative, implies that some of the participants assume that seeing HIV negative test results means being HIV negative. However as mentioned before, during the "window period" test results may appear to be false negative, even though a person might be infected with HIV (McDougal et al., 2005). Additionally, a person could be infected with the virus after conducting the test. Thus, it is impossible to rely on negative HIV test results. The

HI- virus can be passed from person to person by unprotected sexual contact – however, 14 out of 16 participants had unprotected sex within the last three years. Maybe some of the participants trusted their partners due to HIV negative test results. Unfortunately, this may lead to new infections of sexually transmittable diseases.

Striking was that almost none of the self test users noticed the disadvantages mentioned above. Most of the users did neither miss professional support, nor did they criticize financial costs or the accuracy of HIV self tests. A possible explanation for this phenomenon is a biased search for information regarding HIV self tests. Users, who strongly desire using HIV self tests because of disliking other HIV test methods, might exclusively find evidence or support for the use of HIV self tests. Studies demonstrated the so called “self-fulfilling prophecy” in which people behave in ways which make their expectations come true (Darley, & Gross, 2000). An alternative explanation for the overall positive attitude of users towards HIV self tests, might be connected to the fact that users made their own personal experiences with HIV self testing. This study has demonstrated that users made good experiences with user friendly, accurate HIV self tests, consequently users may not be concerned about possible disadvantages.

Findings within the *social influence* concept of the ASE model indicated that a majority of the participants perceived negative prejudices of society concerning HIV testing. Participants’ perceptions of the subjective norm seem to be in a line with the urge for anonymity and privacy. Stigma, rather than embarrassments, may be a barrier to go to public health care institutions. Most of the participants did not communicate with peers or family members about HIV testing - probably to avoid perceived prejudices of society. Almost none of the self test users perceived public warnings or access barriers regarding the use of HIV self tests. Instead, a majority of HIV self test users perceived positive images of HIV self tests which derived from the internet.

Results on the concept *self efficacy*, which is also considered to be a possible predictor of HIV self test use (Gripsen et al., 2011), showed differences between self tests users and non-users. Only non-users perceived possible access barriers. This might explain why some of the non-users did not favor using HIV self tests. Nevertheless, all of the participants reported to be convinced to get access to HIV self tests. This might be connected to the fact that a majority of the participants were under the age of thirty. Therefore, participants are used to internet access as well as internet banking from early on.

Furthermore, a majority of the participants intended to use HIV self tests in the future. Obviously, HIV self testing is likely to increase. These results fit in with existing literature

(Ronda et al. 2009). Nevertheless, non-users often mentioned the requirement that the accuracy of HIV self tests should be affirmed by public health care institutions. Perceived disadvantages of HIV self tests as well as perceived access barriers appeared to have a negative influence on the participants' intention to use HIV self tests. Therefore, only some of the non-users mentioned their intention to use HIV self test. The same applies to self test users. Users who experienced discomforts, such as pricking in one's finger, did not intend to use HIV self tests again. Nevertheless, it can be assumed that if public legislation would allow access to HIV self tests, probably even more risk groups might intend to use HIV self tests in the future.

This study accessorially made a first attempt to explore in which ways MSM actually experienced the use of HIV self tests - no research to date has examined experiences of users with HIV self tests. Surprisingly, almost none of the participants could recall the name of their used HIV self tests. A possible explanation might be that current legislation in the Netherlands prohibits selling HIV self tests. Still, HIV self tests have an illegal character and do not get supported by the Dutch government. Hence, providers of HIV self tests often do not give trade names to the tests in order to protect themselves against possible prosecution of people or governments. An alternative explanation for not remembering the name of used HIV self tests might be that a majority of self test users had used a HIV self test only once or twice.

Against expectations of perceiving financial costs as a hindering factor (Colfax et al., 2002), most of the participants alluded to perceive existing HIV self test prices in a range between 14.99 Euros and 35 Euros as low. In general, users perceived nearly no barriers when ordering HIV self tests via the internet. Nevertheless, shipping HIV self tests sometimes failed. It was assumed that only about 50 % of all ordered HIV self test pass the border. The other HIV self tests might be hold back because of legislation which bans using HIV self tests. In these cases, proponents of HIV self tests might argue that current legislation even hinders people to test their HIV status.

None of the users experienced any problems when conducting their HIV self tests although most of the users conducted the test for the first time. Test instructions were clear to all of the self test users. Expressed experiences of actual consumers seem to challenge the view of an inappropriate test use and potential application errors (Walensky & Paltiel, 2006; Whellams, 2009). Results of this study indicate user friendly, accurate HIV self tests. Nevertheless, test instructions were not provided in the first language of the participants – but provided in English. HIV self test users might not have perceived test instructions as a hindering factor because of higher educational levels. Still, problems may arise if people cannot understand English. If legislation regarding HIV self tests changes in the future, designers of HIV

self tests will likely adapt to the needs of consumers.

Most of the users were extremely excited while waiting on their test results although they had to wait short periods of time -about 10 till 20 minutes- in comparison with conventional HIV test users, who often had to wait one week before getting their HIV test results. It is hard to imagine how difficult it is to carry feelings such as fears and uncertainties around until “the moment of truth”. Immediate test results might enhance a persons’ quality of life more quickly.

All of the users trusted their HIV negative test results and accordingly felt relieved. It could be assumed that possible other test results, as HIV positives, might lead to different reactions of people. Still, impacts of HIV self tests are barely studied (Gripsen et al., 2011). Nevertheless, it is important to mention that studies reported that “(...) no significant increase in suicide risk has been observed in association with the transmitting of positive HIV test results to patients. Moreover, the reporting of negative HIV test results has been associated with relief of stress” (Campbell & Klein, 2006).

Overall, this study has shown that HIV self tests can provide a higher quality of life as well as increase HIV testing rates. The fact that there are people out there who want to keep control about their personal health and their personal lives (Ronda et al., 2009) and who are not willing to test themselves outside their homes (Lippman, Jones, Luppi, Pinho, Veras, van de Wijgert, 2007; Jones et al., 2007) stresses the importance of providing alternative HIV testing methods to guarantee as few barriers as possible. This study focused on MSM; however, there are several risk groups as well as other people who might use HIV self tests instead of living in uncertainty and fear about their current health status.

4.1 Study limitations and strengths

The study had some limitations that need to be acknowledged. First, findings of this study cannot be generalized to the population because of recruiting a non-random sampling. Hence, the study may have been subject to a selection bias. Additionally, the chosen sample is relatively small. For this reason it is not a representative sample of the total population but a good reflection of MSM’s opinions about and experiences with HIV self tests. Nevertheless, generalizations are possible with regard to the content- findings could be applied to similar, analogous situations.

Furthermore, some of the participants might have given socially desirable answers. However, to minimize the chance of socially desirable answers, the interviewer explained -in

advance- in the informed consent (see appendix I) to all of the participants that it would really come to their personal opinions and perceptions. Finally, in addition to qualitative conducted data, this study also collected quantitative data. Presented numbers in the result section differ from objective statistics. Nevertheless, numbers can lead to a better understanding of explored results.

Despite some limitations, the current study provided an understanding and description of participants' personal opinions about and experiences with HIV self tests. Gaining such insight is best acquired through the use of focused samples. The openness of the qualitative procedure made it possible to discover new, previously unknown facts and accessorially created highly complex responses. The result is rich, subjective, in-depth data with insight unobtainable from quantitative research techniques.

4.2 Future research

Determinants which might predict the use of HIV self tests need to be confirmed in collaboration with quantitative research in order to reach more people with the message of HIV testing. Moreover, innovative research has to identify consumers' needs and use of information regarding HIV self tests in order to familiarize consumers with limitations of HIV self tests such as false positive or false negative test results. It is essential to investigate more appropriate experiences of consumers in order to revise the political view on HIV self tests. Especially impacts of HIV self tests have to be assessed at risk populations in order to understand possible psychological as well as behavioral reactions, in particular under the condition that undesirable HIV test results appear.

Finally, it has to become established if health counseling services can ensure access to care for people who were newly diagnosed with HIV because of new testing methods - health care institutions often face capacity limits already.

5. Conclusion

The fact that the majority of the participants intend to use HIV self tests and the overall positive experiences of actual users demonstrate, that HIV self tests are seen as suitable alternative to conventional HIV tests. HIV self tests can provide HIV diagnoses for people who perceive barriers and stigmatization in the use of conventional tests and can therefore be a powerful tool to increase HIV testing rates. Further consumer specific, quantitative research can pro-

vide better insights in consumers' information needs. Additionally, it is very important to provide appropriate information to health care providers as well as policymakers.

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Appendix

Appendix I Informed consent

Informed consent

CONSENT STATEMENT FOR PARTICIPATION IN SCIENTIFIC RESEARCH

Researcher: I am Antje, I am studying psychology in the Netherlands and I just started writing my bachelor thesis.

--Thank you very much for your time.

Purpose: My topic addresses men who have sex with men and their perceptions of HIV self tests. I am interested in your personal opinion about HIV self tests.

Procedure: First I am going to explain you what is going to happen: I am going to ask you questions about your experiences with HIV testing and your perception of HIV self tests. I think our conversation will take us about 1/2 hour -----There is the opportunity to stop our conversation at any time.

What will happen with contact details: This interview is absolutely confidential. Names will be changed –it's all anonym. It would be very helpful for me to tape our conversation to make sure that no information is left out. Later our conversation will be tipped out without using any name. All tapes will be deleted when my research is finished. Would you agree to tape our conversation?

Invitation: I am planning to finish my bachelor thesis in August. If you were interested in my results I would send you a digital copy of my thesis.

Questions: Do you have any questions or concerns? Please feel free to ask.

Alright, should we get started?

Appendix II Interview schema

Interview schema

- Alter?
- Ausbildung?
- Wie viele Sexualpartner hatten Sie innerhalb des letzten Jahres?
- Ist es mal vorgekommen, dass Sie ungeschützten Geschlechtsverkehr hatten innerhalb der letzten drei Jahre?
- Wie oft haben Sie in den letzten 3 Jahren ihren HIV Status testen lassen?

Zuerst würde ich gerne allgemein wissen, warum sie sich persönlich entschieden haben, sich HIV testen zu lassen

1) (Vor-) und Nachteile HIV Selbsttest

1.1) Attitude

- Was finden sie vorteilhaft an dem Gedanken seinen HIV Status zu kennen?
- Welche Vorstellungen missfielen Ihnen bei dem Gedanken an einen HIV Test?

Jetzt frage ich konkret nach ihrer Meinung rund um HIV Selbsttests

- Haben Sie schon mal gehört von einem HIV Selbsttest?
- Haben sie schon mal einen HIV Selbsttest gemacht?
- Was finden Sie von der Idee sich zu Hause testen zu lassen?
- Was spricht dafür einen HIV Test zu Hause durchzuführen?
- Was finden sie bedenklich an der Idee sich alleine zu Hause testen zu lassen?
- Welche Aspekte fehlen Ihnen, wenn Sie sich zu Hause testen lassen?

2.2) Social Influences

- Mit wem haben Sie über die Idee gesprochen, sich HIV testen zu lassen?
- Hat ihnen jemand einen Selbsttest empfohlen?
- Hat sie jemand gewarnt vor einem Selbsttest?
- Wie viele Leute kennen Sie, die einen HIV Selbsttest durchgeführt haben?
- Was denken Sie, was die Gesellschaft findet von Leuten, die einen HIV Test machen?

2.3) Self-Efficacy

- Sind sie davon überzeugt einen Selbsttest durchführen zu können, wenn Sie ihn durchführen wollen würden?
- Was könnten für Schwierigkeiten entstehen bei dem Versuch einen Selbsttest zu bekommen?
- Planen Sie nochmal einen HIV Test zu machen?
- Würden Sie (jetzt oder wieder) einen Selbsttest durchführen?

Jetzt werde ich Sie konkret nach den Erlebnissen rund um ihren Selbsttest fragen.

2) HIV Selbsttest Gebrauch/Erfahrungen

- Wie oft haben sie einen Selbsttest durchgeführt?
- Wussten Sie zu dem Zeitpunkt von verschiedenen Arten sich testen zu lassen?
- Wie war der Name des Selbsttests?
- Wie haben Sie vom Selbsttest erfahren?
- Was hat Sie vom Selbsttest überzeugt (Informationen/Leute?)
- Woher haben Sie Informationen über den Selbsttest erhalten?
- Was hat ihnen geholfen bei ihrem Unternehmen einen Selbsttest zu bekommen?
- Welche Schwierigkeiten sind entstanden während des Versuchs den Selbsttest zu erhalten?

Könnten Sie mir über die Anwendung des Selbsttest erzählen? Wie ist die Testdurchführung für sie gewesen?

Wie wurde der Selbsttest genau durchgeführt?

- Haben Sie die Verpackungsbeilage gelesen?
- Wie beurteilen Sie die Deutlichkeit der Testanweisung?
- Welche Schwierigkeiten haben Sie erfahren während der Ausführung des Selbsttests?
- Welche Anweisungen waren ihnen undeutlich?
- Wie lange mussten Sie warten auf ihr Testergebnis?
- Was für ein Gefühl verbinden Sie mit der Wartezeit?
- Was haben Sie für ein Testergebnis erwartet?
- Wie konnten Sie die Testresultate erkennen?

Die folgende Frage bezieht sich auf ihr Testergebnis. Würden sie mich wissen lassen, was ihr Testergebnis war?

- Welches Gefühl verbinden Sie mit dem Testergebnissen?
- Haben Sie nach dem Test ihr sexuelles Verhalten geändert?
- Wie hoch schätzen Sie das Risiko von Anwendungsfehler?
- Wie viel Vertrauen haben Sie in die Betraubarkeit der Testergebnisse?

Jetzt frage ich abschließend, nach ihren Plänen ihren HIV Status nochmal testen zu lassen

- Planen Sie nochmal einen HIV Test zu machen?
- Würden Sie (jetzt oder wieder) einen Selbsttest durchführen?