# Barriers and Enablers that Influence the Uptake of HIV Testing among Heterosexual Migrants in the Netherlands:

## Understanding Late-Stage HIV Diagnosis

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**Barriers and Enablers that Influence the Uptake of HIV Testing among Heterosexual Migrants in the Netherlands: Understanding Late-Stage HIV Diagnosis**

A thesis submitted in partial fulfilment of the requirement for the degree of

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by Veronica Martinez Martinez

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## List of Acronyms

| | |
|---|---|
| **AHF** | AIDS Healthcare Foundation |
| **AIDS** | Acquired Immune Deficiency Syndrome |
| **ART** | Antiretroviral Therapy |
| **BSN** | Citizen Service Number (*Burgerservicenummer* in Dutch) |
| **COA** | Central Agency for the Reception of Asylum Seekers (*Centraal Orgaan opvang Asielzoekers* in Dutch) |
| **EU/EEA** | European Union/European Economic Area |
| **FGD** | Focus Group Discussion |
| **GGD** | Municipal Health Service (*Gemeentelijke Gezondheidsdienst* in Dutch) |
| **GP** | General Practitioner |
| **HCV** | Hepatitis C Virus |
| **H-TEAM** | HIV Transmission Elimination Amsterdam |
| **HIV** | Human Immunodeficiency Virus |
| **HIVST** | HIV self-test |
| **HTC** | HIV Test Client |
| **IND** | Immigration and Naturalization Service (*Immigratie- en Naturalisatiedienst* in Dutch) |
| **KI** | Key Informant |
| **KIT** | Royal Tropical Institute (*Koninklijk Instituut voor de Tropen* in Dutch) |
| **MIPEX** | Migrant Integration Policy Index |
| **MSM** | Men-who-have-sex-with-men |
| **NPO** | Non-profit Organization |
| **PI** | Principal Investigator |
| **PLWH** | People Living with HIV |
| **REC** | Research Ethics Committee |
| **RIVM** | National Institute for Public Health and the Environment (*Rijksinstituut voor Volksgezondheid en Milieu* in Dutch) |
| **RMA** | Medical Care for Asylum Seekers Regulations (*Regeling Medische zorg Asielzoekers* in Dutch |
| **SHC** | Sexual Health Center |
| **SSI** | Semi-structured Interview |
| **STI** | Sexually Transmitted Infection |
| **TB** | Tuberculosis |
| **UNAIDS** | Joint United Nations Programme on HIV/AIDS |
| **VWS** | Ministry of Health, Welfare and Sport (*Ministerie van Volksgezondheid, Welzijn en Sport* in Dutch) |
| **WHO** | World Health Organization |

## Key Concepts and Definitions

**Human Immunodeficiency Virus (HIV):** A virus that attacks the white blood cells (called CD4 cells) in the body's immune system [1] and can be transmitted through blood, semen, vaginal, rectal, and breast milk fluids by engaging in unprotected anal or vaginal sex, and sharing needles [2].

**Migrant:** "Any person crossing an international border or within a state away from his/her habitual place of residence, regardless of: (1) legal status; (2) voluntary or involuntary movement; (3) causes for the movement; or (4) length of the stay." [3]

> **Economic migrant (highly skilled):** "defined by the Immigration and Naturalization Service (*Immigratie- en Naturalisatiedienst, IND* in Dutch) as an employee who works for a recognized sponsor in the Netherlands on the basis of a work contract and fulfills specific age, salary and experience requirements." [4]

**Late-stage HIV diagnosis:** "when the immune system is significantly impaired (CD4 count below 350 cells/mm$^3$)," or advanced disease (CD4 count below 200 cells/mm$^3$), or "AIDS defining event" [5].

**Indicator-condition guided testing:** "an approach where healthcare professionals routinely offer an HIV test to all individuals presenting with an indicator condition because the condition is associated with undiagnosed HIV infection." [6]

## Abstract

### Background

Heterosexual migrant men and women in the Netherlands often face barriers to accessing health services (including HIV testing), with a lesser willingness among men to test for HIV. To improve the uptake of HIV testing and reduce late-stage HIV diagnoses among heterosexual migrant men and women, this study explored factors of influence in the usage of HIV testing to determine future interventions.

### Methods

For this exploratory qualitative study, semi-structured interviews (SSIs) and one focus group discussion (FGD) were conducted during June-July 2023 with 12 heterosexual migrants and seven key informants, respectively. Using NVIVO software, an inductive approach and coding system was used to identify themes and analyze transcribed interview recordings. The Andersen's Expanded Behavioral Model of Health Services Use guided the analysis of the results.

### Results

Participants were from various ethnic backgrounds. Analysis of SSIs revealed that insufficient availability of information on HIV and testing services, and difficulty in accessing these services are barriers. The majority of HIV test client participants expressed free, rapid testing, and no appointment required as enablers to test in the future. Analysis of the FGD showed that poor health literacy and lack of clarity on the healthcare system's guidelines were barriers to accessing HIV testing services.

### Conclusion

The AHF Checkpoint was considered to be a convenient and easily accessible HIV testing facility. Psychosocial, enabling, and need factors are key in understanding why and how migrants use HIV testing services, but the inclusion of other components of the framework is also crucial in helping to assess inequalities in accessing these services.



### Key words

HIV testing, Heterosexual migrants, late-stage HIV diagnosis, barriers, enablers


**Word Count:** 12981

## Introduction

Since it first arrived on the scene in 1983, the Human Immunodeficiency Virus (HIV) continues to affect the well-being of millions of people worldwide. The misconception that it only affects gay men unfortunately continues to pervade in some societies, but the fact remains that the virus does not discriminate and could affect anyone, including heterosexual people. While great work has been done to decrease transmission of HIV infections, certain groups being affected require more attention in the fight against HIV to ensure the UNAIDS' 95-95-95 global targets. Stigma and discrimination continue to play roles in the low uptake of HIV testing.

Attending the Master of Public Health program at the KIT in Amsterdam further piqued my interest in migrant-related health issues. As a child of Mexican immigrants in the United States, I felt imbued with a sense of purpose to reach out to migrants from low- and middle-income countries (LMICs) who may be experiencing challenges on how to take control of their health.

After learning and witnessing first-hand the issues migrants face in the Netherlands, I wanted to continue in the sexual health sector because of the cultural norms and values that play a major role in this population accessing health services and care. Particularly among heterosexual migrants, attitudes and beliefs about health can pose ethical dilemmas when trying to scale-up health services. I chose to focus on HIV despite it being a difficult topic of discussion for some individuals given its sensitive nature and the emotions that can stir up.

I propose to consider the individual, cultural, and structural aspects related to HIV (testing) services, and contextualize them using the Andersen's behavioral model framework to study the patterns of HIV testing usage among heterosexual migrants and help identify challenges faced in accessing HIV testing services in the Netherlands.

Many incoming migrants, especially those from LMICs, are not accustomed to the type of health care system the Netherlands provides and may find it daunting to navigate while trying to settle and integrate into Dutch society. With different cultures having their own beliefs with respect to HIV knowledge, creating tailored interventions can be a challenge.

This research aims to explore the knowledge, attitudes and beliefs of HIV and testing services among heterosexual migrants in the Netherlands in order to analyze the factors that influence the uptake of HIV testing services to understand why there is a higher percentage of late-stage HIV diagnosis among this group.

The results will be shared with all organizations and stakeholders involved to contribute to the strategic development of improving HIV testing services to heterosexual migrants in the Netherlands. Moreover, the results pertaining to the heterosexual migrants' perceived barriers and enablers to HIV testing can be applied to other health programs in the other major cities in the Netherlands (i.e., Rotterdam, The Hague, and Utrecht) where migrants have a strong presence.

# 1. Background

## 1.1. HIV in the European Union (EU) and European Economic Area (EE/EEA)

While much has been accomplished in the past four decades in the fight against the Human Immunodeficiency Virus (HIV), it remains a global health concern, with over 2.3 million people affected in the World Health Organization (WHO) European Region [7]. HIV is a virus that affects the white blood cells in the body's immune system [1]. Body fluids that can transmit HIV include blood, semen, vaginal, rectal, and breast milk through engaging in unprotected anal or vaginal sex, and sharing needles [2]. In 2020, the Joint United Nations Programme on HIV/AIDS (UNAIDS) set out 95-95-95 global targets (i.e., 95% of undiagnosed people know their status, 95% of people diagnosed with HIV receive antiretroviral treatment (ART), and 95% of people receiving ART have viral suppression) to be reached by 2025 [8].

The impact of the COVID-19 pandemic in Europe resulted in 24% fewer HIV diagnoses being recorded in the WHO European Region in 2021 than in 2019, partly due to public health restrictions that resulted in less HIV testing [7]. In 2021, heterosexual transmission accounted for 29% of all new HIV diagnoses (12,205) in the EU/EEA, where 30% of those new diagnoses by heterosexual transmission were among migrants who originate from countries with generalized HIV epidemics [7]. The connection between the spread of HIV and migration has been a topic of interest, especially in recent years, fueled by the need to better understand the challenges migrants face in accessing services in HIV, psychosocial support, and prevention [9].

The *Paris Declaration on Fast-Track Cities* was originally established in 2014 as a political declaration to end the HIV epidemic and has since evolved into ending HIV, tuberculosis (TB) and viral hepatitis (HCV) in urban settings through integration of health services (e.g., sexual and mental) [10]. Amsterdam, Rotterdam, and Utrecht are part of the more than 500 member cities and municipalities that have signed this declaration [10]. In 2022, the *Sevilla Declaration on the Centrality of Communities in Urban HIV Responses* was developed to bolster the Paris Declaration by having cities and municipalities involve communities affected by HIV, TB, and HCV and galvanizing them into reaching the goals of the Fast-Track Cities Initiative [10]. Furthermore, the *UN 2021 Political Declaration on HIV and AIDS* supports UNAIDS efforts to expand collaborative rights-based approaches to reducing new HIV infections and ensuring health for all [11].

## 1.2. The Netherlands and the UNAIDS global targets

As of 2023, the Netherlands has a population of over 17.8 million and is comprised of 12 provinces and 388 municipalities [12,13]. The country has a prime minister who acts as head of government and a monarch who acts as head of state [13]. There are three countries (Aruba, Curaçao, and Sint Maarten) and three Caribbean territories (Bonaire, Sint Eustatius, and Saba) that are a part of the

Netherlands, however, the territories are not part of the EU [13].

The four main cities in the Netherlands are Amsterdam, Rotterdam, The Hague, and Utrecht. In 2021, there were 24,110 people living with HIV (PLWH), of whom 54% were living in these four main cities [5]. All regions had either reached or were on the verge of reaching the UNAIDS' 95-95-95 global targets. However, Amsterdam had approximately 6,350 PLWH (of whom 170 remained undiagnosed), which was more than the other main cities [5].

Despite the Netherlands' overall progress with the UNAIDS' global targets, improvements can be made given that the continuum of care at the end of 2021 for 'other men' (i.e., heterosexual men) and women was 90-91-94 and 94-93-94, respectively [5].

### 1.3. Migration in the Netherlands

Reaching people with undiagnosed HIV coupled with the ongoing issues of migration remain public health challenges for the WHO European Region [14]. Approximately 87 million migrants are living in Europe as of 2020, which is a 16% increase from 2015 [3,15]. Currently, approximately 2.5 million residents of the population in the Netherlands are migrants [12].

About one-third of the total number of migrants that arrive in the Netherlands each year are from outside the EU [16]. Migrants from Morocco, Turkey, Suriname, and the Dutch Caribbean form the four largest groups in the Netherlands of non-European origin [17]. In recent years, the diversity in origin has expanded to include those from the Americas, Africa, and Asia [12].

The international 2020 Migrant Integration Policy Index (MIPEX) highlights the Netherlands having well-developed integration policies [18]. However, the country focuses on temporary integration given that even with these well-developed policies, migrants do not benefit from long-term security to permanently settle, investment in integration, or participation as naturalized citizens [18]. Furthermore, the cultural and religious diversity that migrants bring to the Netherlands may come with different norms, values and beliefs that add an extra challenge for them to learn to adapt to their new setting. This extra challenge makes migrants more vulnerable to experiencing health inequities that put them at higher risk for HIV, making them a key population that is disproportionately affected by the disease [19,20].

Furthermore, most migrants in Europe who live with HIV are often infected postmigration, which demonstrates a need for prevention and testing in the countries of arrival. One recent study conducted in the Netherlands, and one conducted in nine European countries (including the Netherlands) focused on the acquisition of HIV among heterosexual migrants occurring within the first five years of migrating into the Netherlands or Europe [21,22]. It was found that over 50% of heterosexual migrant men and women originating mainly from sub-Saharan Africa (SSA), Latin America, and the Caribbean acquired HIV postmigration [21,22].

## 1.4. Health Care System in the Netherlands

The universal social health insurance system used in the Netherlands combines public and private insurance [23]. A gatekeeper system is used whereby patients require a referral from a general practitioner (GP) for hospital visits (patient can choose the hospital) or to receive specialized care [23]. Private non-profit organizations predominately provide health services, while the majority of doctors are independent contractors [23].

Although undocumented migrants are not allowed to obtain health insurance, mechanisms exist to reimburse costs incurred by this group [24]. The Central Agency for the Reception of Asylum Seekers (*COA* in Dutch) works together with a health organization called Doctors and Care (*Arts en Zorg* in Dutch) to provide eligible asylum seekers medical coverage through the Medical Care for Asylum Seekers Regulations (*RMA* in Dutch) healthcare [25]. While the Ministry of Health, Welfare and Sport (*VWS* in Dutch) is primarily responsible for health promotion and prevention, the health system is decentralized, with municipalities typically overseeing preventive screenings and long-term outpatient services [24,26]. While primary prevention is more commonly the focus (i.e., preventing onset or progression of a health issue), secondary and tertiary preventions are also important to identify health problems early on to enable prompt treatments and prevent existing health issues from exacerbation [26].

## 1.5. Heterosexual Migrants and HIV in the Netherlands

While the prevalence of HIV among the general population in the Netherlands is low (0.2%) as of 2021[*data in press*], a higher prevalence exists among specific subpopulations such as migrants from HIV-endemic countries. In 2021, there were approximately 427 new HIV diagnoses, of which 28% were acquired through heterosexual contact [5]. The Netherlands currently has 21,399 people living with HIV (PLWH) in care, of whom 44% are migrants [5].

**Table 1. Region of Origin of PLWH in care in the Netherlands**

| | Number | Percentage |
|---|---|---|
| The Netherlands | 12,253 | 57 |
| Sub-Saharan Africa | 2,680 | 13 |
| Western Europe | 1,107 | 5 |
| South America | 1,701 | 8 |
| Caribbean | 975 | 5 |
| South and southeast Asia | 805 | 4 |
| Other** | 1,767 | 8 |
| Unknown | 111 | 1 |
| **Total** | **21,399** | **100** |

** Other also includes people who come from Eastern Europe
Source: Stichting HIV Monitoring (SHM) 2022 Report Summary (p.7) [27]

## 1.6. HIV Testing in the Netherlands

Sexual health centers (SHCs) and GPs are the main sources for sexually transmitted infection (STI) and HIV testing in the Netherlands. In 2022, the total number of SHC consultations was 164,715, of which 38% were women and 17% were heterosexual men [28]. Of these percentages, approximately 29% of women and 36% of heterosexual men were migrants [28].

STI/HIV testing is free of charge in the Netherlands for high-risk groups (including "those who originate from an HIV/STI endemic area") and HIV care is reimbursed through Dutch health insurance [29]. Despite this, gender has shown to play a role in the usage of HIV testing services, with an overall higher proportion of migrant women testing for HIV compared with migrant men [30]. An example of this gender difference is highlighted by pregnant women getting tested for HIV during an antenatal visit and also by a lesser willingness or awareness among heterosexual migrant men to be tested for HIV [29,31]. The latter has greater consequences for uninfected women and future partners of infected men who go less for HIV testing. Furthermore, men-who-have-sex-with-men (MSM) tend to test more than heterosexual men and women. In 2022, the number of HIV tests in the country among women and heterosexual men was 22,740 and 11,747, respectively, which was a 12% decrease from 2019 [28].

## 2. Problem Statement

Despite there being economic migrants (highly skilled) that contribute to the Dutch economy, migrants from HIV endemic countries residing in the Netherlands often face barriers to accessing healthcare (e.g., HIV testing services) and bear the burden of poverty, unemployment, and lack of education, which can influence their uptake of HIV testing [4,32,33,34,35]. This thesis addresses the knowledge gap on access to information on HIV and testing services for heterosexual migrants in the Netherlands.

Over the past two decades, a trend of comparatively low HIV testing can be seen among heterosexual migrants in the Netherlands. In south-eastern Amsterdam, a 2010 study found previous HIV testing was reported by 38% of heterosexual migrants, from which a low percentage (28%) had actively sought HIV testing [36]. In 2014, a Dutch study discovered that of those who had previously tested for HIV at a SHC (55.7%), MSM tested more often (83.1%) than heterosexual migrant women (51.4%) and men (45.9%) [37]. More recently, a 2019 Dutch study found a lesser likelihood among heterosexual migrant men and women of having been tested for HIV before their HIV diagnosis than those of migrant MSM [33]. Additionally, they were more often diagnosed with late-stage HIV infection, which indicates a barrier for heterosexual migrants in accessing HIV testing services [33].

Common factors associated with low uptake of HIV testing among heterosexual migrants include stigma, discrimination, fear of social exclusion by their communities, and low-risk perception [34]. These factors to seeking HIV testing services can result in late-stage HIV diagnosis, meaning "the immune system is already significantly impaired (CD4 count below 350 cells/mm$^3$), or advanced disease (CD4 count below 200 cells/mm$^3$), or AIDS defining event" [5].

During the first year of the COVID-19 pandemic (2020), lockdown restrictions in the Netherlands limited the availability of HIV testing services [7]. As of the end of 2021, there were 1400 people who remained undiagnosed for HIV in the Netherlands [5]. A 2018 study conducted in nine Western European countries (including the Netherlands) found heterosexual migrant men and women having more late-stage HIV diagnoses (67.1% and 60.8%, respectively) despite previous HIV testing prior to their diagnosis [38].

### 2.1. Justification

Late-stage HIV diagnosis remains a problem in the Netherlands that requires more attention, taking into consideration region of origin and age [5]. A greater focus on heterosexual migrants is needed after a 2018 systematic literature review showed low acquisition of health services related to low functional health literacy among migrants (e.g., Turkish, Moroccan, and Surinamese) in the Netherlands [39]. These health services may include HIV testing, and the

limited knowledge they receive about diseases and their gravity can lead to a low uptake of HIV testing services. Furthermore, more focus is needed on migrant community engagement, financial resources, and political support as outlined in the Sevilla Declaration [10].

An observational cohort study conducted in the Netherlands from 1994-2014 found a high percentage of late-stage HIV diagnosis among heterosexual migrants from "South-East Asia (women: 79%, men: 73%), sub-Saharan Africa (women: 63%, men: 73%) and Suriname (women: 64%, men: 69%) compared to MSM from Suriname and Southeast Asia (31%, 54%, respectively)" [40]. Among individuals in the Netherlands diagnosed with HIV in 2019 or later, those diagnosed with late-stage HIV infection were highest among non-MSM (69%) and women (62%) compared to MSM (45%) [5]. These late-stage HIV diagnoses where HIV was acquired through heterosexual transmission were most common among people originating from countries in sub-Saharan Africa, Central Europe, the Middle East, and South America [5].

A higher percentage of late-stage HIV infections in the Netherlands has been shown to be linked to older age at the time of diagnosis [5]. 83% of heterosexual men and 75% of women who were diagnosed in 2019 or later and were 50 years of age or older had late-stage HIV, as opposed to 50% of heterosexual men and 46% of women who were diagnosed below 30 years of age [5].

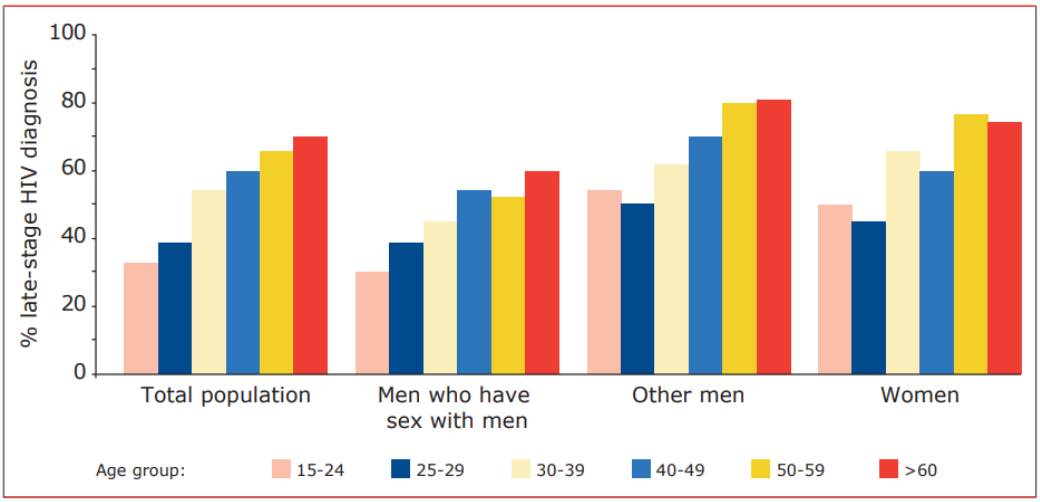


**Figure 1. The proportion of late-stage HIV diagnoses stratified by age category and various groups for the period 2019-2021**

*Source: Stichting HIV Monitoring 2022 Report Summary (p.4) [27]*

The number of migrants in the Netherlands with late HIV diagnoses coupled with the negative impact the COVID-19 pandemic had on HIV testing numbers in the Netherlands requires a strategic scale-up of HIV testing services [5,7,29]. The challenges for the Dutch healthcare system and health providers who have to deal with cultural and language barriers illustrates the need for training, education, and resources.

More importantly, inequities in HIV testing service delivery and dissemination of HIV information still exists. Therefore, this thesis attempts to better understand the factors influencing the uptake of HIV testing among heterosexual migrants in the Netherlands, thus contributing to the Paris and Sevilla Declarations of reducing new HIV infections towards ending the HIV epidemic.

## 2.2. Overall Objective

This study aimed to explore factors of influence in the uptake of HIV testing that exist among heterosexual migrants in the Netherlands in order to inform policy makers and health providers on strategies for improving the uptake of HIV testing, and reduce late-stage HIV diagnoses.

Specific Objectives

i. To explore the psychosocial factors of influence (attitudes, knowledge, social norms, and perceived control) on HIV testing usage among heterosexual migrants.
ii. To identify experiences on usage of HIV testing services among heterosexual migrants.
iii. To understand the perception of health providers and policy advisors on reasons for late-stage HIV diagnosis among heterosexual migrants.
iv. To formulate recommendations for health providers and policy makers to improve the uptake of HIV testing services among heterosexual migrants.

# 3. Methodology

## 3.1. Study Design

This research consisted mainly of an exploratory qualitative study to examine the barriers and enablers of HIV testing usage among heterosexual migrants in the Netherlands. The research table provided in Annex I provides details of the study design.

## 3.2. Study Area

The city of Amsterdam served as the study site given its fulfillment of the following criteria:

1. Densely populated area of more than 250,000 migrants [41].
2. Various ages and socioeconomic statuses.
3. Mixture of low-threshold, public, and private HIV testing facilities.
4. An overall HIV prevalence higher than 0.5% [5].

The non-profit organization (NPO) AIDS Healthcare Foundation (AHF) Checkpoint was chosen as the facility to conduct the research as it provides a low-threshold, no-cost rapid HIV testing service to everyone, which assisted in finding diverse participants. Additionally, this facility is known to have Spanish speaking clients, and the principal investigator's (PI) fluency in Spanish accommodated these study participants. The Municipal Health Service (*GGD* in Dutch), Soa Aids Nederland, and RIVM served as the main sources to access GPs, nurses, and policy advisors. Soa Aids Nederland is an NPO that serves information to the public and offers professionals, among others, tailor-made courses in HIV and STI prevention, while RIVM is a research institute that serves as a "trusted advisor to the government, professionals and private citizens [42,43]." Furthermore, the VWS was also approached, but was unable to deliver someone to participate in the study.

## 3.3. Target Population

The target population of this study consisted of heterosexual migrants aged 18 and older from LMICs in Europe, Africa, Asia, the Middle East, and Latin America. Migrants living in the Netherlands less than five years were considered to be 'short-term', while those living in the country five years or more were considered to be 'long-term.

Eligible participants met the following criteria (based on the AHF Checkpoint's HIV test assessment form):

1. Identify as female or male.
2. Were 18 years of age or older at the time of semi-structured interview (SSI)
3. Are a migrant from a low- or middle-income country (LMIC)* [3]
4. Identify as heterosexual.

* LMICs from Europe, Africa, Asia, Middle East, or Latin America.

Key informants (KIs) who participated in this study consisted of health professionals and policy advisors. The selection criteria for the KIs were that they be either a GP/doctor, nurse, or policy advisor (or similar roles) and that they have a working knowledge of the English language.

### 3.4. Sampling and Recruitment

Only participants residing in the Netherlands were used in this study (tourists were excluded). The study recruited a total of 19 participants comprised of 12 HIV test clients and 7 KIs. Maximum variation and convenience sampling were used to recruit HIV test clients on-site at the AHF Checkpoint. This was done by communicating the study guidelines to the on-site HIV test counselors to inform and invite eligible clients after their test to participate without influence or pressure. A study invitation poster in English and Spanish was posted in the lobby and HIV testing office of the AHF Checkpoint (see Annex II). Snowballing technique was used to recruit two of the 12 participants to the AHF Checkpoint who had never tested in their lifetime through a referral from their respective friends who had tested at the Checkpoint and saw the study invitation flyer. These two participants did not test for HIV at the time of the study.

Purposeful sampling was used to recruit seven KIs: one GP, one nurse, one research coordinator/nurse, one STI doctor/policy advisor, two senior project officers, and one policy advisor from the KIT, the GGD, Soa Aids Nederland, and RIVM, respectively. KIs were invited to participate in the study's focus group discussion (FGD) via email without influence or pressure.

Recruitment of participants continued until saturation of data was achieved.

**Table 2. Study participants**

| **Participants** | ***Age and Sex (≥18 years)*** | ***Ethnicity*** |
|---|---|---|
| *HIV test clients* | 3 females; 9 males<br>Various ages (see results section) | Various ethnicities (see results section) |
| *GP* | 1 male | Dutch |
| *Nurse* | 1 female | Dutch |
| *Nurse/Research Coordinator* | 1 female | Dutch |
| *Policy advisor* | 1 female | Dutch |
| *STI doctor & policy advisor* | 1 female | Dutch |
| *KI group* | 1 female; 1 male | Iranian; Dutch |

### 3.5. Data Collection

The PI conducted semi-structured interviews (SSIs) with HIV test client participants and one FGD with KIs (both face-to-face) based on the conceptual framework, using topic guides (see Annex III). Two KIs could not attend the FGD and thus submitted their input via a Word document using the FGD topic questions as a guide. One SSI was performed in Spanish while the rest, including the FGD, were performed in English. All respondents consented verbally and in writing before the SSIs and FGD (see Annex IV). Permission for the PI to audio record and take written notes of the interviews and FGD was granted by all study participants. The SSIs and FGD were transcribed immediately after each session, and the SSI performed in Spanish was first transcribed before being translated into English. Anonymity and confidentiality were ensured by not asking participants for any personal identifiers and not sharing any personal information given by key informants (i.e., name, email address, and phone number).
Data collection continued until no new data was received to make certain saturation was reached.

### 3.6. Data Analysis

Data collection and transcription were done in tandem. The data collected from the SSIs and FGD by the PI was transcribed using the Microsoft Word 'Dictate' feature followed by manual transcription for more accuracy. A hybrid approach was taken, with the research topic guides informing the development of a coding frame matrix (deductive approach), including emerging themes (inductive approach), based on the Andersen's Behavioral Model of Health Service Use conceptual framework. The data was coded into 113 themes from the SSI and 36 themes from the FGD, with approximately 30 emerging themes.

The data was analyzed using this conceptual framework and the latest NVIVO software was used to classify, sort, and arrange the data in order to identify themes and patterns. Data and quotes from the Spanish-speaking participant were translated into English and compared with identified codes and themes. Manual interpretation of the data analysis was done in tandem with the ongoing data process.

### 3.7. Quality Assurance

The study aimed to reach a diverse group of participants and triangulate data through searching for overlapping themes between SSIs and FGD, and policy documents to ensure a thorough investigation into the research topic. A number of measures were employed to achieve quality assurance: piloting and adjusting the SSI topic guide, accommodating Spanish speakers, audio recording the SSIs and FGD, safe data storage techniques (including deletion of SSI and FGD audio recordings after the final publication of the scientific paper), regular follow-ups with supervisors, and coding and transcription reliability was checked by a second researcher to ensure the process went according to the study protocol and the Research Ethics Committee's (REC) recommendations.

## 3.8. Ethical Clearance and Considerations

The Royal Tropical Institute (*KIT* in Dutch) Research Ethics Committee approved the research protocol on 25th of May 2023 (see Annex V). The most important ethical aspects that were managed during the study were collecting data anonymously for the SSIs, ensuring confidentiality for the FGD, and applying participant codes when analyzing and using data in the results section.

## 3.9. Conceptual Framework

The WHO's Consolidated Guidelines to HIV testing services using the 5Cs (Consent, Confidentiality, Counseling, Correct results and Connection) was considered for this study to understand the quality and delivery of these services [44]. However, it did not encompass the relevant factors that informed a better understanding of the influences to HIV testing usage.

Therefore, the study was guided by the Andersen's Expanded Behavioral Model (HBM) of Health Service Use, which was adapted from the Andersen-Newman 1995 Framework of Health Service Utilization (see Annex VI) [45,46]. This model asserts that health service use is the result of three important components: to understand why and how people use health services, to examine disparities in access to healthcare, and to contribute to the development of policies related to equitable access to care [47]. Furthermore, individual factors (predisposition, enabling, and need) and certain environmental characteristics (external or health system) may influence health behavior, which in turn influences health outcomes [45].

The term 'predisposing characteristics' from the Andersen-Newman Framework was replaced with 'psychosocial factors' in the expanded HBM [45,48]. As this amendment was not reflected in the expanded HBM, Figure 2 illustrates the amended model that was used to support the structure of the study's findings. The use of psychosocial factors in the expanded HBM allowed for inclusion and exploration of ethnicity and the significance of health attitude and belief constructs in relation to the use of HIV testing services [48]. The study used psychosocial, enabling, and need factors as outcome variables based on the adapted conceptual framework.

These factors and their domains from the expanded framework are defined below:

*Psychosocial factors*

Psychosocial factors have an impact on decision-making about planned or intended behavior related to HIV testing, using four domains: attitudes, knowledge, social norms, and perceived control [45].

*Enabling factors*

The availability of appropriate resources and support at various levels to access health services and care: individual (e.g., demographic characteristics), contextual (e.g., motivations to test for HIV), community/social network (e.g., relationships with family, friends, colleagues), and structural (e.g., role of health care system). The ability to access these resources (e.g., low-cost HIV testing) and health facilities are essential [45]. Lack of availability may impede care that is necessary and desired due to the low supply of services, financial means, or discrimination [45]. Enabling factors may influence the frequency of usage of HIV testing services.

*Need*

Need is related to how people perceive their own level of health and functionality (including their risk perception of HIV infection) as well as the perception from a GP or HIV test counselor on an individual's health and needs [45]. The perceived severity of one's health, access to primary health care and health education, and the availability of funds and/or incentives can all have an impact on one's perceived need [45].

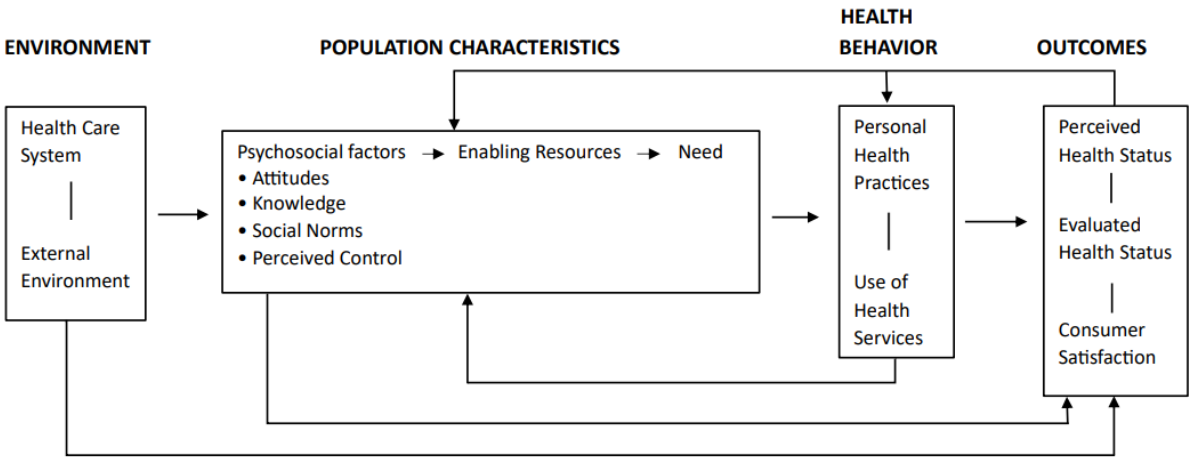


**Figure 2. Andersen's Expanded Behavioral Model of Health Service Use**

*Source: Andersen's Expanded Behavioral Model of Health Service Use [45], adapted from the Andersen-Newman 1995 Framework of Health Service Utilization [46].*

## 3.10. Limitations of Methodology

Since the selection criteria tool was only able to be written in English and Spanish for the SSI, data would not have been collected from migrants coming from other Dutch speaking countries (e.g., Sint Maarten, and Suriname) unless they spoke English. As a result, there was selection bias with migrants either speaking English or Spanish. Furthermore, given the heterogeneity of migrant populations, they cannot be seen as one cultural group, which limited the study in focusing on a specific migrant sub-group.

## 4. Results

In total, there were 19 participants: 12 HIV test client (HTC) participants (9 males and 3 females) and 7 KIs (2 males and 5 females) (Tables 3 and 4). All participants provided verbal and written consent to be interviewed for the study. Most HTC participants resided in Amsterdam, were highly educated, age range was 20- 47, duration in the Netherlands varied from 9 months up to 45 years, and several worked in IT (information technology). Regions of origin of the HTC participants were Europe, the Middle East, South-East Asia, the Caribbean, Central America, and North and West Africa. Of the 12 HTC participants, two had never been tested, six were first-time testers, and four had previously tested between 1 to 4 times. All KIs had a medical and/or public health background; six were of Dutch origin and one of Iranian origin.

The Andersen HBM framework was used to analyze the results of this study (see methods section). The framework's three main factors (psychosocial, enabling, and need) were selected as primary determinants since they provide key insights in determining usage of HIV testing services. The remaining elements of the framework were then used except for 'Consumer Satisfaction' and 'Personal Health Practices' (see discussion section 'evaluation of framework'). Some results sections include information gathered from the KIs that either support or contradict the findings.

**Table 3. List of SSIs with HIV test client participants**

| Participant Code | Age | Gender | Country of Origin | Duration in the Netherlands |
|---|---|---|---|---|
| R33F | 33 | Female | Romania | 1,5 years |
| R28M | 28 | Male | Romania | 2 years |
| I27M | 27 | Male | Iraq | 2 years |
| I22M | 22 | Male | Iran | 1,5 years |
| I35M | 35 | Male | India | 3,5 years |
| T27M | 27 | Male | Turkey | 13 years |
| I26M | 26 | Male | Indonesia | 21 years |
| B20F | 20 | Female | Bulgaria | 9 months |
| N24M | 24 | Male | Nigeria | 2 years |
| M35M | 35 | Male | Mexico | 5 years |
| S40M | 40 | Male | Suriname | 30 years |
| M47F | 47 | Female | Morocco | 45 years |

**Table 4. List of key informants for FGD**

| Participant Code | Job Function | Gender | Organization Type |
|---|---|---|---|
| K-1 | Policy Advisor | Female | Research institution |
| K-2 | STI Doctor and Policy Advisor | Female | Public health NPO |
| K-3 | Nurse and Research Coordinator | Female | Public health facility |
| K-4 | Nurse | Female | Public health facility |
| K-5 | General Practitioner | Male | General health practice |
| K-6 | Senior Project Officer | Female | Public health NPO |
| K-7 | Senior Project Officer | Male | Public health NPO |

## 4.1. Psychosocial Factors Influencing the Usage of HIV Testing Services

The psychosocial factors involved four domains: attitudes, knowledge, social norms, and perceived control, with repeat testing as an emerging theme.

### 4.1.1. Domain of Attitudes towards HIV Testing

The attitudes of HTC participants consisted of their views on the themes of HIV testing and its importance. For over half of the total HTC participants, their visit to the AHF Checkpoint was the first time they tested for HIV in their lifetime. The majority of HTC participants felt that HIV testing was an important method to prevent the spread of the disease and to not only protect one's safety, but that of others as well.

While two HTC participants had never tested for HIV in their lifetime, they still held the attitude that HIV testing is important so that one is aware of whether or not they are transmitting the virus.

As one of them who had never tested said,

*"It is important for people to do it [test for HIV] because then you're also aware of whether you're transmitting or not to other potential candidates, so it's important to be safe at any time, not only for yourself, but also towards others." – S40M*

However, a different HTC participant pointed out,

*"For me not this important, but I can imagine for a lot of other people, and yeah, maybe gay community it is very important. I've never thought about testing for HIV before." – I26M*

The theme of 'repeat testing' emerged among those who had previously tested as being equally as important in prevention of HIV infection with one stating,

*"I think it's kind of like one of those things that […] people have sex and a lot of people might not know that they might be HIV positive, so if there was like a culture which advocates for a more repeated testing of HIV, then it prevents it from leading into AIDS and then potentially creating really big consequences for the people." – I22M*

While four HTC participants tested more than once (of which one tested three times through an HIV self-test (HIVST) kit purchased online), none were regular testers. 'Regular' tester referred to an individual who tests for HIV regularly (i.e., every 3-6 months). One HTC participant who had tested for the first time in the Netherlands at the AHF Checkpoint and three times in their country of origin confirmed the importance of repeat HIV testing by stating that he wanted to make it a routine.

#### 4.1.2. Domain: Knowledge of HIV

The knowledge of HIV (including body fluids and modes of transmission) and HIV test locations were themes that were discussed. While a few HTC participants could name at least one way HIV can be transmitted and one body fluid that can transmit HIV, the overall knowledge of HIV was low. Eight HTC participants could name at least 'blood' as one body fluid, while two were uncertain and could not name any body fluids that can transmit HIV. Treatment for HIV and subsequently living a normal life emerged as a theme among three HTC participants and some key informants.

As HTC participant R33F said,

*"I know that you can get treatment. So, if you have it [HIV], you can just have a normal life. […]. I have a sister-in-law that is HIV positive. But you have a normal life, she just made a baby."*

Two HTC participants understood the need to wait the right amount of time before going for an HIV test (i.e., the window period). One mentioned that he knew to wait at least a couple of months before testing for HIV in order to get a correct result, while the other who had never tested for HIV said,

*"As I know you have to wait. I know that you have to wait three months or something like this." – M47F*

Online searches using the Google search engine were discussed as the main source of information on HIV and where to find HIV test locations. Some indicated that they briefly learned about sexual education in primary or high school, but those from eastern Europe and the Middle East stated that it was not taught in their country of origin. In addition, four HTC participants named the GGD as a place they knew where to test for HIV (of whom two are long-term migrants who had never tested for HIV in their lifetime and who visited the AHF Checkpoint solely to be interviewed). The GP was mentioned by three others as a known source to get an HIV test.

One HTC participant mentioned searching online as a way to find an HIVST:

*"Well, this one [AHF], but other than this… I remember seeing some websites where you can also like order online. Like some of these rapid testing kits, but then that's pretty much it." – I22M*

#### 4.1.3. Domain of Social Norms on HIV and Testing

Social norms consisted of the following themes: taboo, stigma, cultural perception of HIV, and cultural expectations to care, with sexual orientation as an emerging theme.

The theme of taboo was prominent among most HTC participants with many stating that sex remains a taboo subject in their respective cultures. While this was not stated as a deterrent to test for HIV, one participant who had never tested for HIV said,

*"I think looking at myself, that's [taboo] one of the barriers I had to go through myself - living in the Netherlands - because then you see also the difference is in terms of back home, we barely talk about the sex and sexuality and sexually transmitted diseases." – S40M*

HIV test-related stigma was also mentioned by several HTC participants as a result of people's perception of HIV in their culture.

As one stated,

*"People were mocking it [HIV testing], they weren't taking it seriously. They thought it was useless, […], but I think it's even a bigger problem about people's portrayal of HIV because then grows a stigma that is hard to break off." – I27M*

In one instance, an HTC participant stated that while HIV is talked about, sex is only mentioned in terms of abstinence-only. And, while HIV testing is available in his country, stigma remains:

*"The education system does mostly talk about the illness, but with regards to sex, it's like mostly to abstain from it. So, people are aware of it. They're also like free testing. […]. But yeah, it's like there's a bit of stigma with it," said I22M.*

The theme of sexual orientation in relation to stigma and taboo emerged from key informant K-6:

*"Among [heterosexual] migrants there are many married men who are considered as hetero but have sex with other men and do not identify themselves as gay, bisexual or even MSM due to stigma and taboo. Therefore, they never receive the information they need and the test and prevention services."*

Migrants came from different cultural backgrounds and thus, had varying views on expectations to care. Most HTC participants stated that they were accustomed to going anywhere in their country of origin for health services.

As one HTC participant mentioned,

*"…for example, back home, if I register to my GP, I don't have to be in that area. I can just go to one in another city," – R28M*

Key informant K-1 also added to this as she explained,

*"But still their expectancy from the healthcare might be quite different because of their cultural background. So, they go to a doctor, and they expect to get some medication whilst in the Netherlands. GPs are there to kind of advise and counsel. They [migrants] are also disappointed in what they get, and it's not that expensive."*

Three HTC participants came as economic migrants (highly skilled), four came when they were young (age range 2 - 14) when their families immigrated to the Netherlands. The remaining HTC participants came for other reasons such as school or a better life (i.e., more job opportunities).

HTC participant R33F described her situation in general terms:

*"Yeah, you know migrants when they come here, they come to work, they have a bad life at home. They don't earn a lot of money. So, they come here [the Netherlands] for work. They're poorly paid, most of them."*

Three HTC participants mentioned paracetamol as the most common practice by GPs for treatment of general health issues. A key informant also brought this up as a potential culture shock for migrants, stating,

*"One of the things that really is an issue, is not only the bureaucracy of it all, but also the comment: 'Start by taking paracetamol.' This can be a culture shock and can result in care avoiders in the future," – K-7*

A different key informant mentioned trust issues as a result of this,

*"People from different cultural backgrounds (they all) have some trust issues with GPs because they seem to think the GP only gives them paracetamol and advises them to come back in two weeks." said K-5.*

#### 4.1.4. Domain of Perceived Behavioral Control over HIV

Perceived behavioral control referred to HTC participants' reasoning behind deciding not to previously test for HIV and the time they took to decide to test. There were two main themes: risk perception and behavioral skills, with stable relationship and condom use as sub themes. Fear, shame, and no sexual partner were mentioned to a lesser extent. The two participants who had never tested for HIV in their lifetime and one first-time tester stated that being in a stable or long-term relationship were their main reasons for not testing for HIV.

One of the never-before HIV tester participants stated,

*"If you know somebody for a long time and you had a long-term relationship, then there's no need to test." – S40M*

Shame and not having a sexual partner were mentioned by two HTC participants, respectively. Fear was also mentioned by a few HTC participants and some key informants, and mainly came from HTC participants not wanting to know their result at the time, with one first-time tester stating that he is a hypochondriac.

*"I was afraid. I think fright is by far the biggest concern I had […] because I'm afraid of a lot of stuff and like I am hypochondriac." – R28M*

Key informant K-6 further explained in the context of HIV treatment,

*"I think it depends strongly on their country of origin and on the HIV epidemic in their country. People who come from specific African countries where they have experienced the worst aspects of the HIV epidemic fear from HIV, are not necessarily familiar with the fact that with a good treatment they can live as long as people without HIV. Therefore, they don't want to get tested and deny the risks."*

The majority of HTC participants took less than a week to decide to test for HIV from the moment they thought that they should test. For one HTC participant, it took him nine months and for another three years before his first HIV test.

## 4.2. Enabling Factors on the Usage of HIV Testing Services

The enabling factors involved three domains: the availability of HIV testing services (primarily in Amsterdam, but also other main cities in the Netherlands), including the accessibility of those services, and the openness to speak about HIV and/or testing.

### 4.2.1. Domain of Availability of HIV Testing Services

(HTC) participants mentioned the availability of HIV testing services to be overall good in the Netherlands. While one HTC participant was only familiar with the AHF Checkpoint, he also knew that AHF had other available testing sites in other cities.

As he stated,

*"I only know of this one [AHF] and I know that they go to Rotterdam every Wednesday, so it's the same organization. They have other locations. Sometimes, I know that they went to Eindhoven a few times. I don't know of any other organization that does the same." – I27M*

The three HTC participants that came as economic migrants (highly skilled) mentioned some type of assistance from their company in settling in upon arrival to the Netherlands.

As one mentioned,

*"Yeah, I was super lucky with this. So, my company brought me here from Romania and they had a software that they collaborated with, let's say. And that software is like your personal butler, let's say for a couple of months to help you settle in and they gave you all the information like where and how you can find a house, or how you should register to a GP." – R28M*

Themes such as free, without appointment, and rapid testing were seen as the more important determinants to testing at the AHF Checkpoint. Other important themes mentioned were discreet and convenience in terms of the proximity of the Checkpoint and its opening hours.

As one stated,

*"I feel like this is the easiest place [AHF] because I came here because I couldn't find anywhere open today [Saturday]. Or maybe you have to like book appointments, so it's really um…convenient and very quick for me." – N24M*

### 4.2.2. Domain of Accessibility of HIV Testing Services

Easy accessibility of HIV testing services was mentioned by several HTC participants. A few mentioned that they encountered some difficulty in accessing HIV testing services prior to finding the AHF Checkpoint. One HTC participant who is a long-term migrant said,

*"It's difficult because it's not very easy…places to find with information [on HIV testing]. Yeah, nobody talks about this. I read much people don't know they got HIV here in the Netherlands, so they live with HIV and they give to all the others because they don't know they got it." – T27M*

One HTC participant was glad to have found the AHF Checkpoint, as he said,

*" And, basically with the checking power where I can go without appointment quickly […] because making appointment is very difficult here in Amsterdam." – I35M*

The SHCs at the GGDs provide testing services to those residing in their municipality and who meet certain requirements such as age and sexual preference, as stated by key informants. HTC participants mentioned the AHF Checkpoints having no such restrictions and people from other postal code areas are also allowed to test for HIV.

With regards to the age requirement, one HTC participant said,

*"It has been pretty bad actually with the GGD because I remember that I wanted to [test] there because friends told me about that you could get free STD test until your 25$^{th}$. After your 25$^{th}$ you have to start paying for it." – I26M*

Regarding the postal code requirement, another HTC participant stated,

"*For example, if I am here, because I live in Haarlem. But if I want to search in the GGD of Amsterdam it's like at the time of putting in the post code and your post code is from Haarlem, you can do absolutely nothing in Amsterdam, and they close the questionnaire and send you to Haarlem." – M35M*

While none of the participants stated that language was a barrier when trying to access HIV testing services at the GGD or GP, one key informant discussed how the GGD provided an online system to make appointments, but encountered some challenges.

As key informant K-3 explained,

*"Actually, we changed our system for making an appointment to an online one. And, by doing it we saw that we were missing persons who were not Dutch-speaking and not online literate enough. […] But I think the online making an appointment is an extra handicap because you just cannot phone and make an appointment or ask questions. You have to fill out a form online. And that's too hard. I think even if you're Dutch and not very literate online, that's really a problem, I think."*

#### 4.2.3. Domain of Openness to Speak about HIV and/or Testing

Family, friends, and colleagues were themes used to determine whether or not HTC participants were able to bring up the subject of HIV and/or testing.

While a couple of HTC participants felt it would be fine to approach their family about the topic of HIV and/or testing and that they would feel supported, most felt that it would not be a good idea.

As one HTC participant discussed,

*"I think with my friends it would be fine, but I think if it's with family then it's a bit taboo because there's a lot of misinformation about the way it's transmitted and how it first started and who in particular is it more common with, then all these assumptions…it wouldn't be a good topic to bring up." – I27M*

Despite several HTC participants coming from conservative cultural backgrounds, the majority felt that they could speak openly with their friends without hesitation. However, one participant who had never tested for HIV in their lifetime pointed out with regards to their family and friends,

*"The topic is no problem, I think…to talk about HIV […], but if I have to do a test, then it will be another thing. Then it is 'did you sleep with somebody else?', 'did your husband sleep with somebody else?', 'Why should you take a test?' I think that would be if I told somebody in my…from my background." – M47F*

All HTC participants said they would not discuss HIV and/or testing with their colleagues due to either feeling uncomfortable or unnecessary to do so. However, one mentioned the following,

*" I think there's other STD's that are more likely to be brought up during discussion. But not HIV because where I work it's not a branch where people talk about the HIV, maybe about other STD's but honestly, I've never talked to my colleagues about it." – I26M*

### 4.3. Need Factors Influencing the Usage of HIV Testing Services

The need factors consisted of two domains: perceived need (HTC participant) and evaluated need (KI). Perceived need had the theme of HTC participants' perception of HIV risk, while evaluated need had the theme of KIs' (GPs') beliefs on an HTC participant's risk for HIV.

#### 4.3.1. Domain of Client's Perceived Need for HIV Test

HTC participants' perceived risk for HIV influenced their decision to test, with unprotected sex (mostly from a one-night stand or a new partner) and physical symptoms being emerging themes. One HTC participant further mentioned injection drug use:

*"I mean, if I'm not doing any sexual interaction with any other partners, and I don't have any drugs addiction. […]. I mean, it's not always it should happen with only sexual intercourse. For example, if we are exchanging some drugs and all the blood exchange or something like this, the injection." – I35M*

#### 4.3.2. Domain of Evaluated Need for HIV Test

Since most (HTC) participants had either tested for the first time in their lifetime at the AHF Checkpoint or had never been tested for HIV, most had not been to a GP for an HIV test. Two HTC participants who are both long-term migrants had been to a GP before to test for HIV. However, one of them who had for the first time ever had an HIV test at the Checkpoint discussed how their GP turned them away due to their low risk:

*"My doctor says it's not necessary because it's very low risk with Dutch girls. Only if I slept with [girls from] other countries. He told me that. He says not necessary for me now, because you don't sleep with in the Red [Light] districts, it's just not necessary." – T27M*

To further illustrate this point, key informant K-7 said,

*"Healthcare professionals have multiple reasons not to test for HIV. For example, they don't want to come across as stigmatizing because their patient/client is from a certain country. But sometimes healthcare professionals don't test for HIV because their patient/client isn't MSM."*

### 4.4 Use of Health Services (i.e., HIV Testing Services)

The usage of HIV testing services consisted of four main themes: expectations of the HIV test service, experience during the HIV test service, and competency of the health providers (i.e., HIV test counselor(s)). Of the 12 HTC participants, two were non-testers. There were no regular testers among the study sample.

Having a knowledgeable HIV test counselor, safe space, anonymity, no judgement, reliability of test, friendly staff, and relaxing setting were mentioned among the HTC participants as expectations they had from the AHF Checkpoint. Knowledgeable, safe space, and being nonjudgmental were the most important factors among most HTC participants, with one explaining,

*"Answering all the questions that people might have because in some cases people have a lot of fear towards this thing [HIV testing] even if, like you were positive, that it's fine. It's just like any other virus; you can contain it. But yeah…also providing a safe space." – I27M*

Another added,

*"I think the fact that I don't feel judged. Let me know that I am in a safe place. That they are not going to make any judgment or something that could affect me negatively." – M35M*

None of the HTC participants who had previously tested ever had a negative experience during an HIV test. (HTC) participants were asked what they would do or what their reaction would be if they were to ever have an HIV testing experience that was negative or uncomfortable. Some stated that if they were to ever have a negative or uncomfortable experience at the AHF Checkpoint, they would still return to test for HIV for health reasons (i.e., wanting to know the result) and because it's free. And some mentioned they would either ask for someone else at the Checkpoint to test them or go elsewhere.

One HTC participant, in particular, was direct and said,

*"Then I don't want to do with the testing. Yeah, I go to my doctor then." – T27M*

The 10 HTC participants who were recruited after their HIV test at the AHF Checkpoint expressed that they had a positive experience during their HIV test (the other two were never-before testers and did not test for HIV). Those who experienced some anxiety or panic prior to taking the test mentioned that the HIV test counselor made them feel relaxed and at ease. However, one HTC participant compared his experience to that of their country of origin when entering the Kilo Store (i.e., entrance of the AHF Checkpoint):

*"It's much different from here [the Netherlands], you know, even just going for like an HIV test. The eyes you get from people around even coming up the stairs to this place [AHF], like people in the store downstairs, they be looking like 'where you going?' They be staring, you know like 'what you doing?'" said N24M.*

All HTC participants stated that the HIV test counselor on duty had a strong level of competency: They named the following as important attributes that the HIV test counselor(s) possessed: knowledgeable of HIV, reassurance, ability to handle anxiety, and ability to explain the HIV test procedure well. One of the two participants who had never tested for HIV in their lifetime said that she would expect the person performing the test to be nonjudgmental, and the other never-before HIV tester mentioned,

*"…if that person is open and able to have good conversation skills and be able to relax with you. Help to have a good talk, a good chat…those are all the attributes that add up." – S40M*

### 4.5. Dutch Health Care System

This factor consisted of three themes: the Dutch healthcare system in relation to HIV testing (as well as general health services) and discrimination. Health literacy was an emerging theme.

The majority of (HTC) participants claimed to not know very much about the healthcare system in the Netherlands. Three HTC participants stated knowing that one must first register with a GP before obtaining any type of health service (including HIV testing), and that the GGD also offers HIV testing. One HTC participant expressed, however, that he already expected the GGD to not be a useful resource for him and his partner in terms of testing for HIV:

*"And, so we already knew it was going to be like ok, let's review what options the GGD offers and after GGD it's like, ok well, we saw that the GGD does not work, let's look for other options," said M35M.*

Another HTC participant knew of a private clinic in Utrecht, but the cost was a barrier as he said,

*"I know this place [AHF] yeah, and [clinic] in Utrecht - it's fast test, 14 days [after risk] it says, and they want €300. But I don't do that, too much money." – T27M*

One key informant mentioned that the health system in the Netherlands is decentralized, with GGD facilities serving as additional resources to the regular healthcare. With regards to the responsibility to offer HIV testing and prevention services, she added,

*"But it's not a governmental task. That's exactly the point. That's the decentralized system we have in the Netherlands and that means that this task is at the GGDs. They are the ones that have to address preventive measures towards the people within their region and they can issue leaflets or whatever in any language you want if you have the finances for that," said K-1.*

Moreover, this key informant added to the complexity of the health care system in terms of STI/HIV testing:

*"But it's a complicated system […], it's not clear what is paid for, what is not, […] who has access to it."*

Also, various key informants stated that poor health literacy among migrants was the biggest problem because it impedes their ability to know how and where to go for health services.

As one key informant stated,

*"I think health literacy in general is the biggest problem because they [migrants] don't know where to go or have the knowledge that it [HIV testing] might be useful," said K-2.*

All (HTC) participants stated that they did not experience discrimination during their HIV test consultation at the AHF Checkpoint or when acquiring general health services in the Netherlands.

### 4.6. External Environment

In this study, external environment and its influence on the use of HIV testing services referred to two themes: place of residence, and health policies and guidelines.

Most (HTC) participants resided in Amsterdam. Four participants each resided in a different city. Of these, three resided in cities at a distance of more than 30 kilometers from Amsterdam. Despite those who reside far away still coming to test for HIV at the AHF Checkpoint, one key informant stated that factors influencing the increase of HIV testing included geographical availability.

With regards to HIV prevention awareness geared towards migrant groups, one key informant stated,

*"There's hardly anything there because that's not the policy of the ministry. […] We do want to address for instance the condom use, so we want to make a campaign that's broader for a lot of the public. Advertising the use of condoms. But they are absolutely directed towards the general public. There is no emphasis towards migrants at all." – K-1*

Currently, there is a general guide from the RIVM regarding which groups to include for STI/HIV testing at SHCs at the GGDs, on which financial payment is based. In practice, however, GGDs have some liberty to make their own priorities but the financial agreement with RIVM is tight, as mentioned by some key informants. Additionally, HIV testing guidelines for GPs include an

indicator-condition approach as well as offering routine testing to at-risk groups, however missed HIV testing opportunities still exist, as mentioned by some key informants.

One key informant explained that testing for STIs, including HIV, is offered at the GGD, but a full STI screening may not always be offered even if the clinic is not at full capacity. Individuals wanting further testing will be referred to their GP.

Although national guidelines include people from an endemic STI/HIV country for HIV testing, in reality it is not guaranteed that these individuals could test for HIV at their local GGD due to financial constraints.

As key informant K-1 explains,

*"They [GGD] will prioritize those who are warned for an STI or who have symptoms of an STI. So, just being young or just being from an endemic country doesn't give you access."*

Furthermore, this key informant explained how her team addressed to the ministry the importance of integrating sexual health at the national level so that local cities will integrate it into their local advisory. She further discussed that the general attitude of municipalities does not make it easy to find financing.

Key informant K-3 added,

*"And that's why we are always very happy that we have the finance only partly from the municipality and the larger part is governmental."*

To which key informant K-2 replied,

*"And that is especially important in the Bible belt."*

Moreover, it was said by a key informant that the GGDs currently ask for one's postal code before being able to make an appointment, which she considered a barrier. Another key informant added,

*"But they [migrants] don't have to show proof. So, I mean they [GGD] can never check if they're really living there. So, you can call to Haarlem, and you say you're from Haarlem and you might be accepted at the Public Health Service, and they won't ask for proof," said K-4.*

When key informant K-4 was asked whether or not people knew of this fact, she replied,

*" No, they don't know."*

In addition, two key informants mentioned that despite current guidelines at asylum centers allowing those who had tested positive for tuberculosis (TB) to include testing for HIV as well, there is not much implementation by the health professionals on-site.

### 4.7. Perceived Health Status

The perceived health status factor referred to (HTC) participants' perception of their overall health and the influence it has on seeking health services (including HIV testing). If participants had a

perceived overall good health status, they were less likely to go to the doctor for any health service. In a few cases, sex behavior was the main reason to visit the doctor.

As one HTC participant stated,

*"Yeah sometimes you know, you have maybe a flu, and it takes longer to go away and it's like, 'why is it taking so long?,' you know, stuff like that. But mainly it's personally just because of sex." – N24M*

One of the participants who had never tested for HIV discussed that if she experienced symptoms of any kind, she would go to the doctor, but would not think it was HIV:

*"If I have symptoms, I don't know if I think about HIV. It's not the first thing I think 'Oh, maybe I have HIV.' […]. If I had headache or I think my blood pressure is low then I will go to the doctor, but I wouldn't think about HIV at this moment," explained M47F.*

### 4.8. Evaluated Health Status

The evaluated health status factor referred to HTC participants' health being assessed by a health professional at a medical facility (i.e., GP or nurse), in relation to going for an HIV test. Only one HTC participant who had previously tested for HIV with a GP in the Netherlands discussed the following,

*"Yeah, but I don't go there with the idea I want to do an HIV test I just go there with things that I feel maybe are bad and then they said 'you know, just to be sure, let's do an HIV test.' It's not that I went there because I wanted to take one. Since I was already there they brought it up because of the symptoms I was having to make sure." – I26M*

Three key informants mentioned there being a lack of HIV testing even with the introduction of indicator-condition guided HIV testing due to its broad nature and GPs being uncertain of when to offer the test.

Another key informant (K-5) said,

*"So, in the general GP training, there's no HIV specific curriculum, but we of course have training in STDs but it's pretty superficial. As GP's we try to assess 'risk behavior' and give our patients some education about sexual behavior and its risks. STD tests/diagnostics are offered according to (risky) behavior and/or patients' wishes, however, we do not outreach to all our patients."*

However, key informant K-2 mentioned the efforts in trying to remedy this,

*"Soa Aids Nederland has been trying to train GPs, especially in Amsterdam, but also outside, in diagnostic testing, which is about you're not going to find HIV, you're going to be sure there is no HIV."*

### 4.9. Suggestions from (HTC) participants and Key Informants

(HTC) participants and key informants were asked about their suggestions on how to increase the uptake of HIV testing in the Netherlands among heterosexual migrants. All HTC participants who

had an HIV test at the AHF Checkpoint were pleased with their experience. However, most of them brought up the importance of awareness campaigns, outreach activities, and promotion and normalization of HIV testing (services). All the key informants highlighted the need to improve the health literacy of heterosexual migrant groups, particularly men since they tend to enter into HIV care at a later stage due to the difficulty of finding their way into the healthcare system. Many HTC participants felt the need to have more free testing services in order to remove financial barriers. One HTC participant suggested having more HIV testing services available on Saturdays. Also, several HTC participants mentioned not having enough available information regarding where to test for HIV.

As one pointed out,

*"I do not feel that there is as much promotion of 'come get tested' or 'come to these places' [...]. I mean, I see more things like, I don't know, 'do your taxes,' you know, things like this. It's not like we enter the country and the first thing they tell you is 'ah, you have just arrived, take all your things, this is your welcome kit', no." – M35M*

A key informant corroborated this by saying,

*"The GP is there for people who expect they have a problem, but a lot of migrants wouldn't know they had risk behavior or that they are at risk of contracting any HIV. […] I mean, for somebody who's entering the Netherlands as an adult, there is not a single moment in their life that they will be getting any information apart from the Internet but also then you will have to have an incentive to be looking for information, and if you don't have that incentive then you're lost." – K-1*

A couple of key informants mentioned past initiatives and interventions that were successful in reaching at-risk groups such as the HIV Transmission Elimination Amsterdam (H-TEAM), and the integration of HIV testing into other health services (e.g., prenatal screening and STI testing). However, it was mentioned by a few key informants that the integration of HIV testing into STI testing encountered financing issues.

Other suggestions among (HTC) participants and key informants included,

**(HTC) participants**

- Have more HIV (testing) information available
- Normalize HIV and testing services
- Train GPs to bring up HIV testing
- Use a mobile unit to outreach throughout neighborhoods to deliver HIV information

**Key Informants**

- Have HIV (testing) information available in more languages
- Normalize HIV and testing services
- Better access to low-threshold HIV testing

## 5. Discussion

The study aimed to identify factors that influence the uptake of HIV testing services among heterosexual migrants in the Netherlands, with a focus on major cities. The study identified various psychosocial, enabling and need factors that contributed to a low uptake, namely HTC participants' low knowledge of HIV (including where to test), perception of limited accessibility of GGD facilities, insufficient available information on HIV (testing) services, and low perception of HIV risk. Unclear policies and guidelines on accessing HIV/STI testing services at GGDs as well as potential missed opportunities for HIV testing with GPs were also contributing factors as illustrated by key informants.

What stood out in our findings was that the overall knowledge of HIV among HTC participants was low despite SSIs having been conducted after the participants' HIV test counseling session (with the exception of two who had never tested in their lifetime, but were interviewed at the AHF Checkpoint). A few knew slightly more than others but no one could name all the body fluids that can transmit HIV even though the majority mentioned sexual transmission. In two instances, saliva or urine were mentioned as possible body fluids that can transmit HIV. Despite the overall knowledge of HIV being low, the majority of (HTC) participants believed that HIV testing was of high importance. Furthermore, long-term migrants were surprisingly not very familiar with the Dutch healthcare system, much less in relation to HIV testing services, despite four being raised

or living in the Netherlands since their youth.

Psychosocial, enabling, and need factors influenced the use of HIV testing services (including repeat testing), and the experience HTC participants had also influenced whether or not they would return to the AHF Checkpoint. The AHF Checkpoint is a community-based, low-threshold HIV testing facility with other locations in major cities that allows people who experience barriers to HIV testing at the GGDs or GPs such as finding available appointments, as was mentioned by HTC participants and key informants. The main reasons HTC participants tested at the AHF Checkpoint were because they provide free, rapid testing, with no appointment required.

The cost of HIV testing services was seen as a barrier or enabler depending on the context. The free HIV testing service that the AHF Checkpoint provides was an enabling factor that the majority of HTC participants stated when searching for HIV testing services. Conversely, a couple of HTC participants mentioned private clinics being a deterrent to testing for HIV. While an online HIVST was mentioned by an economic migrant HTC participant as a better alternative to the high costs at a private clinic, it was still felt that the cost would be a deterrent for most migrants.

Despite the accessibility of HIV testing services in the Netherlands being viewed by HTC participants as overall good, it remains a main issue as several found it difficult. In addition, insufficient information on HIV and testing services was also presented as an issue influencing accessibility. The postal code requirement and the online appointment system of the GGD was perceived as a barrier by both HTC participants and key informants. Key informants explained the challenges that some migrants face regarding accessibility and availability of test services, which included migrants not knowing that they actually do not have to show proof of their city of residence at the GGD since they will not be asked for it. Interestingly, the participants who had never tested for HIV in their lifetime perceived the accessibility of HIV testing services to be very good, but also felt that most migrants they know are completely unaware of where to test and of the requirements. Any information on HIV and testing services was mainly accessed on the internet with unavailability of information in multiple languages, as mentioned by HTC participants and key informants. Moreover, (HTC) participants came from different regions of the globe with varying cultures, and thus had different views on expectations to care. However, this was more reflected in acquisition of general health services.

The issues of availability and accessibility remain a challenge in the Netherlands despite its major cities committed to translating HIV and testing information into multiple languages and improving the access of this information that goes beyond the conventional methods used by public health institutions, as outlined by the Sevilla Declaration [10]. This translates to more attention being needed on outreaching to community-based organizations who are the leaders in providing services and support to vulnerable affected communities [10]. Moreover, additional resources and implementation is needed towards improving indicator-condition guided HIV testing (including

TB and HCV) to avoid late-stage HIV diagnoses since it has been shown to be efficient in identifying newly diagnosed people [49].

The (HTC) participants in this study perceived their risk of HIV to be low, which led to some of them feeling an HIV test was previously unnecessary and some feeling that future HIV testing is needed in cases of unprotected sex during a one-night stand or having a new partner. An outlying factor mentioned in this study was the personal risk perception of HIV being low due to the view that HIV testing is more important for the gay community. However, as mentioned by a key informant, heterosexual men may not consider themselves to be gay or bisexual despite sexual interactions with other men. Also, some (HTC) participants viewed one's sexual behavior (i.e., condom use) and being in a stable relationship as not being a cause for alarm to test for HIV since they perceived these situations to be safe. As studies in the Netherlands have shown, low risk perception of HIV was more likely among heterosexual migrant men and women [40,50]. Among participants in our study, this was also shown given that the majority came from countries where HIV remains a strong presence and where it is widely spoken even if not always in the context of sex (education).

This study found only a couple of HTC participants that mentioned fear as their reason for not having previously been tested for HIV, but many said that in their respective cultures fear of the result does play a major role in people not wanting to test for HIV. Previous related inter(national) studies have shown that fear of finding out HIV results plays a big role in not seeking HIV testing services due to perceived consequences of a diagnosis, which include social stigma from communities discovering their result [50,51,52]. Few HTC participants used 'treatment for HIV' to refer to ART treatment and stated that one can live a "normal" life on treatment, but none commented on whether or not this knowledge would reduce their fear of HIV. This could indicate a need to further educate heterosexual migrant groups on how the life expectancy of PLWH on ART treatment is similar to those living without HIV.

Slight improvements have been made in GP-initiated HIV testing in the Netherlands; however, missed opportunities remain, as illustrated in Dutch and European studies [38,51,53,54]. Insufficient STI/HIV training and mainly having patients initiate the conversation around HIV testing was mentioned by key informants and an HTC participant.

Literature on never-before HIV tested heterosexual non-Western migrants in Europe and the Netherlands showed the main barriers to testing being the belief of migrants not being positive for HIV and the lack of knowledge of HIV, including where to test (for no or low cost) [55,56,57]. This was also found to be partially the case in the two never-before HIV testers in our study who did not feel they were at risk for HIV. However, despite knowing of places to test for HIV, they had a lack of knowledge of the topic.

A successful initiative in Amsterdam has been the H-TEAM, which uses biomedical, behavioral,

and structural interventions to reach MSM and people who originate from countries with a high HIV prevalence [58]. However, there are more MSM that are reached than heterosexual migrant groups, as mentioned by key informants. A study in Sweden that focused on Syrian and Iraqi migrants saw that interventions on "language-adapted information" about sexual health and testing services improved accessibility [59]. Additionally, outreach activities are especially vital in reaching migrant subgroups that may be more at risk [59]. This intervention could be applied to the Netherlands given the lack of HIV (testing) information in multiple languages, and should be financially feasible.

While no participants in our study experienced discrimination when trying to access health services (including HIV testing) in the Netherlands, it is somewhat surprising given that other recent Dutch studies showed the contrary [33,60]. This could be due to gender differences given that MSM migrants and migrant women were the ones who experienced discrimination in one study and in the other, the focus was on specific migrant groups (Turkish and indigenous Dutch). In our study, 75% of the HTC participants were heterosexual male migrants from various ethnic backgrounds.

### 5.1. Evaluation of Framework

The expanded framework used in this study guided the analysis on the issues raised, but using a hybrid approach (deductive and inductive) helped to create and find themes and/or domains that were not explicitly laid out in the framework. The adaptability of the framework makes it useful in future health service utilization studies, but I would propose to include the 'predisposing characteristics' from the earlier framework alongside the psychosocial factors instead of replacing it since it would capture more of the e.g., gender, race, socioeconomic and family size issues related to the usage of HIV testing services. In this study, the factors 'Consumer Satisfaction' and 'Personal Health Practices' were excluded since the former was already reflected in section 4.5 subheading 'Experience during HIV Test.' The latter factor was excluded since there was no difference seen between individuals with a healthy or not so healthy lifestyle linked to (ever) testing for HIV.

### 5.2. Strengths and Limitations

The successful inclusion of heterosexual male participants in this study was a strength that provided new insight into the lesser willingness of heterosexual migrant men in HIV testing. Despite the HIV test counselors on duty being female (with the exception of a male test counselor on one day of data collection), a larger willingness to participate was among males. Our study managed to recruit two people who had never before been tested for HIV and six first-time testers. Different cultural perspectives were obtained through the recruitment of participants from various countries: Romania, Iraq, Iran, India, Turkey, Indonesia, Bulgaria, Nigeria, Mexico, Suriname, and Morocco. Additionally, a variety of key informants from different work backgrounds provided a well-rounded discussion on reasons for late-stage HIV diagnosis among heterosexual migrants.

Having a diverse group of participants was also considered as a limitation due to not always having a male or female within each migrant group. Convenience sampling may have affected representativeness since it is not known how the sample reflects the Netherlands given that Amsterdam was the main city of residence, the setting of (HTC) participants (i.e., rural or urban) was not known, and four of them resided in other cities in the Netherlands. Since participants from rural areas were not found in this study, potential issues (e.g., distance to SHCs) that were found in recent Dutch studies were missed [61,62].

Research bias from key informants may have affected perceptions on barriers to HIV testing that lead to late-stage HIV diagnosis. Furthermore, as data from HTC participants were collected using SSIs, there was a potential for social desirability bias.

For the purposes of this study, knowing where to find participants who had never been tested for HIV was a limitation. The recruitment of participants was in a setting where people already came for HIV testing and it was unpredictable to know the daily amount of those coming to test. Therefore, participants who were eligible were not turned away even if they had tested previously despite the study protocol looking in particular (but not exclusively) for first-time testers. Not being able to do more than one FGD or more SSIs (given the time constraints of the study) limited the opportunity to gain more perspectives that could have been useful for our research, which missed the opportunity to better understand barriers to accessing HIV testing services. There was limited literature on never-before HIV testers in Europe, and what was available mainly focused on migrants from sub-Saharan Africa.

Language was not presented by HTC participants as a major barrier in this study. However, it does not mean that this barrier does not exist, especially given the parameter of our study recruiting only English or Spanish speaking participants. Similarly, factors like poverty, employment, and lack of education remain an issue in accessing HIV information and testing services, but were not the main focus of this research, and our participants were relatively well-educated. Moreover, our study was unable to delve into the political aspect of health system financing (except for some statements about a broader involvement of the municipality in providing additional finance for testing) and its influences on the use of health facilities and health providers in providing HIV information and testing services.

# 6. Conclusion and Recommendations

## 6.1. Conclusion

The AHF Checkpoint was considered by HTC participants to be a convenient and easily accessible HIV testing facility. The benefits of HIV testing in the effort to diagnose the disease early are widely known, with the necessary detection instruments made available. However, the study found several factors that still pose a barrier to HIV testing among heterosexual migrants in the Netherlands. Psychosocial, enabling, and need factors are key in understanding why and how migrants use HIV testing services, but the inclusion of other components (of the framework) is also crucial in helping to assess inequalities in accessing these services. Recognizing the importance of all components can guide policy makers in using evidence-informed interventions to improve the access and availability of HIV information and testing services in the Netherlands.

## 6.2. Recommendations

Upon reviewing the available literature on barriers and enablers to HIV testing usage among migrant groups in the Netherlands and Europe, a broader perspective of the evidence-informed available interventions was gained to improve HIV testing services for heterosexual migrants.

Based on the input received from (HTC) participants and key informants, recommendations have been created which are geared towards policy makers, health providers, and further research development to improve accessibility of HIV testing services among heterosexual migrants and the promotion of these services.

### 6.2.1 Recommendations for Policy Makers:

- **Integrate health literacy and knowledge of HIV testing facilities**
  Health literacy and knowledge of HIV testing facilities should be part of the integration process for new arrivals, for instance, by developing an app that newcoming migrants can use to find general and health services in the Netherlands. The app and/or HIV (testing) information can be provided at first points of entry such as the municipalities when people register for their citizen service number (*BSN* in Dutch) or during their first visit at the GP.

- **Improve GP-initiated HIV testing**
  To improve GP-initiated testing, Soa Aids Nederland can collaborate with migrant community organizations that work specifically with PLWH to better train GPs on how to best bring up HIV testing among various migrant populations.

- **Expand low-threshold HIV testing services to improve accessibility**
  Existing health organizations and facilities can expand low-threshold HIV testing services by having (no or low cost) availability on Saturdays twice a month with the help of staff or trained volunteer HIV test counselors. These services can also be offered through discreet mobile units (i.e., no HIV-related insignia) going to rural areas where access to SHCs is a barrier.

### 6.2.2. Recommendations for Health Providers:

- **Loosen or remove the postal code requirement**
  The postal code requirement laid out by the GGDs makes it difficult to reach migrants who may be at risk for HIV infection. The GGD's should loosen or remove this restriction and make it clear to the public on their website to allow people to test for HIV at a GGD outside their city of residence.

- **Bundle initiatives with other health providers**
  Health providers (including GPs, nurses, and AHF) can learn from each other's interventions and bundle initiatives through collaboration on HIV testing projects to reach more heterosexual migrant groups.

- **Improve online appointment system (GGDs)**
  The GGD can improve their online appointment system by providing the option to call for an appointment to accommodate those who may be online illiterate, and having it available

in more commonly spoken languages.

- **Make information on HIV and testing services available in multiple languages**
  Health facilities and organizations (including GGD, hospitals, and AHF) can make information on HIV and testing available in multiple languages through either allocating funding for translation services or seeking volunteer translators.

- **Normalize HIV and testing**
  Health providers can increase the knowledge of HIV and testing through neighborhood campaigns and/or combine HIV testing with other health tests that are non-stigmatizing (e.g., cholesterol, iron, glucose, etc.) during primary care visits to embed it as a routine.

### 6.2.3 Further Research Development:

Further research is needed on heterosexual migrant groups who have never before tested for HIV and the factors related to HIV testing usage, including subgroups, to make more tailored interventions that are more effective and meet the specific needs of different cultural groups. Engaging with migrant (sub)groups in an effort to understand their main health concern(s) can help relevant stakeholders create culturally appropriate messages and innovative service delivery programs to better integrate sexual health and HIV testing into other health services.

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# 8. Annexes

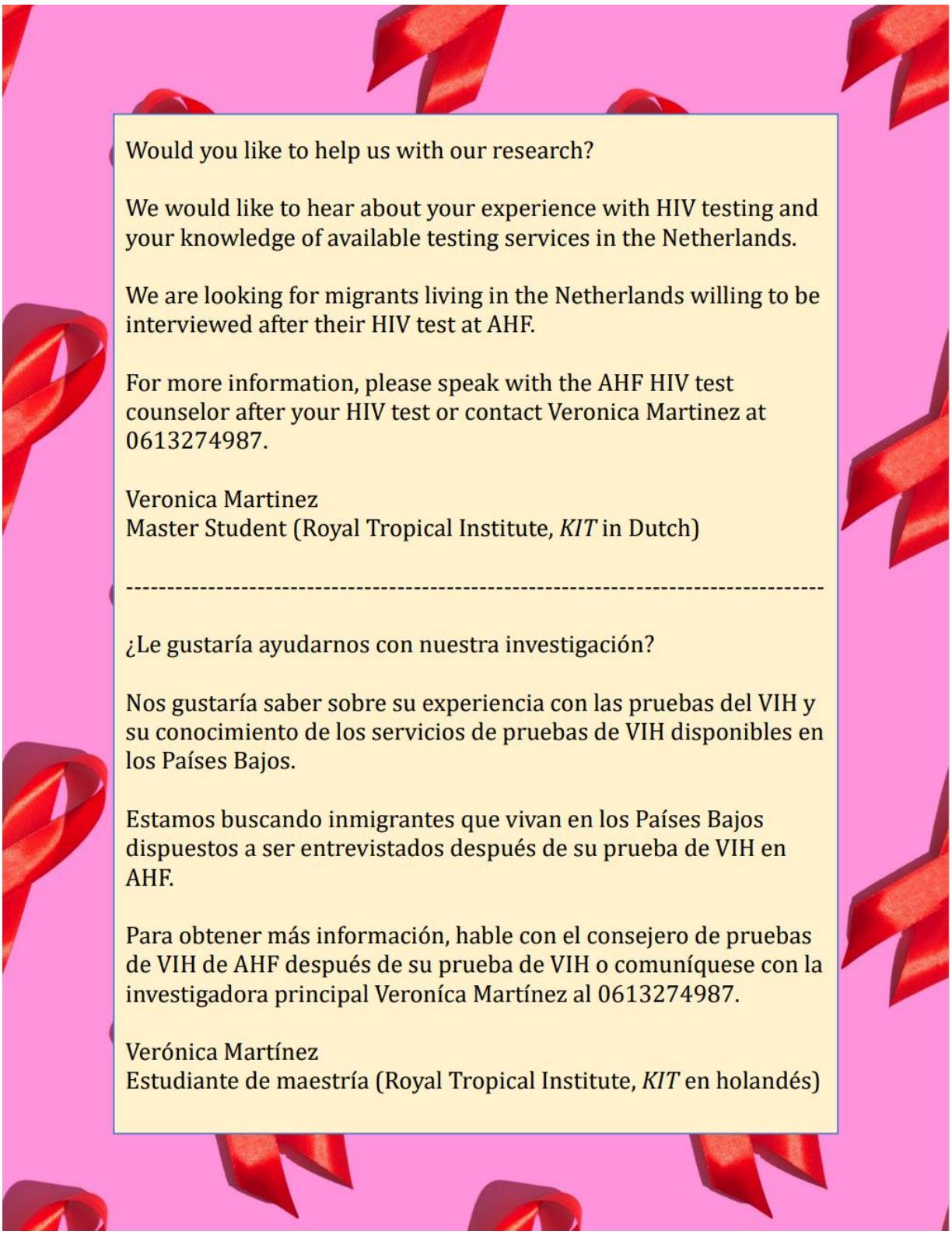
## Annex I: Research table

Overall Objective: To explore factors of influence in the uptake of HIV testing that exist among heterosexual migrants in the Netherlands in order to inform policy makers and health providers on strategies for improving the uptake of HIV testing, and reduce late-stage HIV diagnoses.

| Specific Objectives | Issues | Methods | Participants |
|---|---|---|---|
| To explore the psychosocial factors of influence (attitudes, knowledge, social norms, and perceived control) on HIV testing usage among heterosexual migrants. | • Knowledge of HIV<br>• Knowledge of HIV testing procedure<br>• Cultural beliefs<br>• Sources of information on where to test for HIV<br>• Fear of stigma and/or discrimination<br>• Health literacy | • SSI | • Clients testing at AHF<br>• GP<br>• Nurses<br>• Policy Advisors<br>• Researcher<br>• Senior Project Officers<br>• STI doctor |
| To identify experiences on usage of HIV testing services among heterosexual migrants. | • HIV testing costs<br>• Language<br>• Perceived need/risk<br>• Previous HIV testing experiences<br>• Usage of needle/finger prick<br>• Distance of HIV testing facilities<br>• Professionalism of GP during HIV test<br>• Quality of HIV test service | • SSI | |

| | | | |
|---|---|---|---|
| To understand the perception of health providers and policy advisors on reasons for late HIV diagnosis among heterosexual migrants. | • Knowledge of HIV and referral process<br>• Equity regarding service provision<br>• Language<br>• Cultural norms<br>• Mental health<br>• Health system<br>• Client-centered approach<br>• GP-initiated HIV testing | • FGD | |

## Annex II: Study invitation poster



## Annex III: Study topic guides - SSI (English and Spanish); FGD (English only)

Demographics

1. What is your age?_____
2. What is your gender? Female Male
3. What country are you originally from? _____
4. How long have you been living in the Netherlands?_____
5. Place of residence?_____
6. What is your level of education?_____
7. What kind of work do you do?_____

| **Objectives** | **Main question (s)** | **Probes** |
|---|---|---|
| *To explore the knowledge, attitudes, and perceptions of HIV and available HIV testing services among heterosexual migrants.* | What is your knowledge of HIV? | Can you tell me how it is transmitted? |
| | Where have you received education or information about HIV? | What fluids transmit HIV? |
| | How many times have you tested for HIV (including today) or how often do you test for HIV? | What are your attitudes and beliefs about HIV testing? |
| | [If you have tested before today]: What are reasons that influence your decision to test for HIV? | [If first time ever testing today]: What made you not want to test before? |
| | Which places do you know of where you can test for HIV in the Netherlands? | How long did it take you from the time you thought about testing for HIV to actually doing to test? |
| | How do you think your friends, colleagues or family members would react if you brought up the topic of HIV and/or HIV testing? | What reasons will make you want to test again? |
| | | How did you find out where you can test for HIV? |
| | | How do people talk about HIV and/or testing in your personal and/or professional life? |

| | | |
|---|---|---|
| *To identify experiences on usage of HIV testing services among heterosexual migrants.* | What has been your experience(s) when going for an HIV test in the Netherlands?<br><br>- If this was your first time ever testing for HIV, what expectations did you have?<br><br>What is important for you in order to have a good experience during an HIV test?<br><br>What would you do (what would your reaction be) if you had a bad or uncomfortable HIV test experience with a health provider or HIV test counselor?<br><br>Have you ever experienced discrimination when trying to access HIV testing services? If so, can you describe this experience? | How were you treated by the health provider or HIV test counselor?<br><br>How do you feel the doctor or HIV test counselor did their job?<br><br>How did the experience make you feel?<br><br>Can you tell me some things that have caused you to have a bad or uncomfortable experience during an HIV test?<br><br>Can you tell me some things that would make you feel calm during an HIV test?<br><br>How would this influence your decision to test again for HIV in the future? |
| *To formulate recommendations for health providers and policymakers to improve the uptake of HIV testing services among heterosexual migrants.* | What do you think about the availability of HIV testing services in Amsterdam and/or the Netherlands?<br><br>What do you think needs to be improved when it comes to HIV testing in the Netherlands?<br><br>Is there anything else you would like to share? | How difficult or easy is it to find available HIV testing services in Amsterdam and/or the Netherlands?<br><br>What do you think could help migrants learn more about where to test for HIV?<br><br>What do you think would make migrants want to test for HIV?<br><br>What is HIV testing like in your country? Is it easily available and affordable?<br><br>Do people openly talk about it? |

**Guía temática para participantes de la prueba del VIH (español)**
Demografía

1. ¿Cuál es su edad?_____
2. ¿Cuál es su género? Femenino Masculino
3. ¿Cuál es su país de orígen? _____
4. ¿Cuánto tiempo lleva viviendo en los Países Bajos?_____
5. ¿Lugar de residencia?_____
6. ¿Cuál es su nivel de educación? _____
7. ¿A qué se dedica? (trabajo)_____

| **Objetivos** | **Pregunta principal** | **Preguntas de sondeo** |
|---|---|---|
| *Explorar el conocimiento del VIH y los servicios de pruebas de VIH disponibles entre los migrantes heterosexuales para identificar las barreras y los facilitadores que influyen en el uso y repetición de las pruebas del VIH.* | ¿Cuál es su conocimiento sobre el VIH?<br><br>¿Dónde ha recibido educación o información sobre el VIH?<br><br>¿Cuántas veces se ha hecho la prueba del VIH (incluso hoy) o con qué frecuencia se hace la prueba del VIH?<br><br>[Si se ha hecho la prueba antes de hoy]: ¿Cuáles son los factores o razones que influyen en su decisión de hacerse la prueba del VIH?<br><br>¿Puede nombrar algunos lugares donde haya escuchado que se puede realizar la prueba del VIH en los Países Bajos?<br><br>¿Cómo cree que reaccionarían sus amigos, colegas o familiares si mencionara el tema del VIH y/o la prueba del VIH? | ¿Puede decirme cómo se transmite?<br><br>¿Qué fluidos transmiten el VIH?<br><br>¿Cuáles son sus actitudes y creencias acerca de la prueba del VIH?<br><br>[Si es la primera vez que realiza la prueba hoy]: ¿Qué hizo que no quisiera realizar la prueba antes?<br><br>¿Cuánto tiempo pasó desde que pensó en hacerse la prueba del VIH hasta que realmente se la hizo?<br><br>¿Qué factores harán que desee volver a hacerse la prueba?<br><br>¿De quién o dónde se enteró de otros sitios de prueba del VIH?<br><br>¿Cómo hablan las personas sobre el VIH y las pruebas en su ambiente personal y/o profesional? |

| | | |
|---|---|---|
| *Identificar experiencias sobre el uso de servicios de pruebas de VIH entre migrantes heterosexuales* | ¿Cuál ha sido su experiencia (anterior) al hacerse la prueba del VIH en los Países Bajos?<br><br>- Si esta era la primera vez que se hacía la prueba del VIH, ¿qué expectativas tenía?<br><br>¿Qué es importante para usted para tener una buena experiencia durante una prueba de VIH?<br><br>¿Qué haría (cuál sería su reacción) si tuviera una mala o incómoda experiencia con la prueba del VIH con un proveedor de salud o un consejero de pruebas de VIH?<br><br>¿Alguna vez ha experimentado discriminación al tratar de acceder a los servicios de pruebas de VIH? Si es así, ¿puede describir su experiencia? | ¿Cómo lo trató el proveedor de salud o el consejero de pruebas de VIH?<br><br>¿Cómo fue el nivel de competencia del proveedor de salud o del consejero de pruebas de VIH?<br><br>¿Cómo fue su nivel de comodidad durante la prueba del VIH?<br><br>¿Cómo le hizo sentir la experiencia?<br><br>¿Puede decirme algunas cosas que lo/la tranquilizarían durante una prueba de VIH?<br><br>¿Cómo influiría esto en su decisión de volver a hacerse la prueba del VIH en el futuro?<br><br>¿Puede decirme algunas cosas que le han hecho tener una experiencia mala o incómoda durante una prueba de VIH? |
| *Formular recomendaciones para proveedores de salud y formuladores de políticas que tienen como objetivo la mejoría del uso de los servicios de pruebas de VIH entre los migrantes heterosexuales.* | ¿Qué opina sobra la disponibilidad de servicios de pruebas de VIH en Ámsterdam y/o en los Países Bajos?<br><br>¿Cómo se puede mejorar la política de pruebas de VIH en los Países Bajos?<br><br>¿Hay algo más que le gustaría compartir? | ¿Qué cree que podría ayudar a los migrantes a aprender más sobre dónde hacerse la prueba del VIH?<br><br>¿Qué cree que animaría a los migrantes a hacerse la prueba del VIH?<br><br>¿Cómo es la prueba del VIH en su país? ¿Es fácilmente disponible y económico? ¿La gente habla abiertamente de ello? |

**Topic guide for Key Informants**

Focus Group Discussion Guide:

Key Informants (KIs): GPs, nurses, policy maker

**Total Participant Time Required: 1 hour**

EQUIPMENT NEEDED:

Paper and pens for participants

Recording equipment

OVERALL QUESTIONS TO ANSWER IN FOCUS GROUP DISCUSSION:

The purpose of this focus group among KIs in Amsterdam is to determine the following:

- What are their perceptions on reasons for late-stage HIV diagnosis among heterosexual migrants and what can be done about it?
- How frequently do heterosexual migrants seek HIV testing at their health facilities?
- What are the barriers to seeking HIV testing?

**INTRODUCTION** [5 minutes]:

Good evening. My name is Veronica, and I am a student researcher at the Royal Tropical Institute (*KIT* in Dutch) in Amsterdam, the Netherlands. I am currently conducting a qualitative study to explore the factors that influence the use of HIV testing services among heterosexual migrants in Amsterdam. The purpose is to gather information that will help gain understanding into late-stage HIV diagnosis among heterosexual migrants. First, I want to thank you all for taking the time to be here today.

We will be discussing your thoughts and ideas about barriers to HIV testing, late-stage HIV diagnosis, and HIV risk. Our discussion will provide guidance needed to create attractive and culturally appropriate strategies to promote HIV testing among heterosexual migrants.

You will be asked to share your thoughts and ideas about today's topic through a series of questions that I will ask. There are no right or wrong answers – this is simply an informal discussion. I encourage everyone to participate in the conversation with how you feel about the topic I bring up or on other people's responses. The more points of view shared, the better.

In order to create a safe space for everyone, there are a few 'ground rules' I am hoping we can all agree on before getting started.

*(1) Please turn off your cell phones during the discussion.*
*(2) Please try to protect each other's confidentiality.*
*(3) Please respect each other and each other's opinions.*
*(4) Please try to speak one at a time, so we can listen to what other colleagues have to say. This will also make it easier to transcribe the discussion accurately.*

Are there any questions or concerns about these ground-rules?
Does anyone have any questions?
Before we start the recording, let's begin by getting to know a little about each other.

**WARM-UP.** [5-10 minutes]

Okay, let's begin by getting to know a little about each other. Please share your first name, profession, where you are from, favorite hobby and answer the following icebreaker: If you could be in any movie, what would it be and what character would you play?

Great. Let's begin recording.

[PRESS RECORD ON iPHONE]

**HIV RISK** [15 minutes]

Q1. What would you say are the greatest health concerns for heterosexual migrants in Amsterdam?

⇒PROBE: Where do people go for care for those health concerns?

Q2. How do you think heterosexual migrants in Amsterdam and/or the Netherlands feel about HIV?

⇒PROBE: How serious of a problem do you think it is? Why or why not?

Q3. How much of a threat do you think HIV is to heterosexual migrants? What kinds of things influence how much risk someone has of becoming HIV-infected?

⇒PROBE: Compared with other subgroup populations, such as MSM, do heterosexual migrants have a higher or lower risk of HIV? Why?

**HIV TESTING AND LATE-STAGE HIV DIAGNOSIS** [25 minutes]

Q4. What do you think makes heterosexual migrants decide to get HIV tested? What are some factors that influence their decision?

⇒PROBE: Psychosocial factors? Health system factors?

Q5. What are your thoughts about information being delivered to heterosexual migrants about HIV and available testing services? Is there enough information being given? Please explain.

⇒PROBE: Can you share your thoughts about provider-initiated HIV testing? Are there missed HIV testing opportunities?

Q6. When someone comes to you to get HIV tested, what is the procedure and what information is provided? How often do you see the same people return to get tested again at your facility?

Q7. What do you think would make HIV testing more attractive for heterosexual migrants to use regularly?

⇒PROBE: What help does this population need to go for HIV testing? Does the location of testing services matter? Have there been past interventions that have worked? If so, can you elaborate on what went well and what needed improvement?

Q8. What do you think are some reasons for late-stage HIV diagnosis among heterosexual migrants in the Netherlands?

⇒PROBE: In what way do you think stigma and discrimination play a role?

Q9. Can you share your thoughts about PEP and if there is a need to discuss this (more) with heterosexual migrants in the Netherlands?

⇒PROBE: How does PEP education/information play a role in reducing late-stage HIV diagnosis among heterosexual migrants in the Netherlands?

Q9. What do you think are some ways to decrease the amount of late-stage HIV diagnoses among heterosexual migrants in the Netherlands?

**WRAP UP** [5 minutes]

Thank you very much for coming here today to participate in this focus group discussion. I greatly appreciate your thoughts as they will be very useful in this study.

## Annex IV: Consent forms - SSIs (English and Spanish); FGD (English only)

**AHF Client Informed Consent Form (English)**

Hello, my name is Veronica M. Martinez. I am a researcher from the Royal Tropical Institute (*KIT* in Dutch) in Amsterdam, the Netherlands. I am currently conducting a qualitative study to explore the factors that influence the use of HIV testing services among heterosexual migrants in Amsterdam. The purpose is to gather information that will help health providers and policy makers understand late-stage HIV diagnosis and create strategies to increase the use of HIV testing services among heterosexual migrants. The study will be done face-to-face at the AIDS Healthcare Foundation (AHF) Checkpoint in Amsterdam between **01 June 2023 – 29 June 2023**.

*Procedures including confidentiality*

If you agree to participate in the study, you will be interviewed about your knowledge of HIV and available testing services, and your experience with HIV testing services.

You are also free to not participate without any consequences for you.

The interview will take place in a private office at AHF Checkpoint and will last approximately **45-60 minutes**.

To ensure the quality of data collection, the answers you provide will be audio recorded, upon your consent. If you do not consent, written notes will be taken. Your responses are completely anonymous and will be kept strictly confidential. No personal identifying information will be collected. All anonymous information will be kept in a secured locked cabinet and only the researcher will have access to the information. The data collected will be analyzed and deleted two years upon completion of the study. Audio recordings will be deleted after copying and writing them on paper.

In publications, your answers will represent general findings on HIV testing at AHF to ensure confidentiality.

*Risk, discomforts, and right to withdraw*

Your decision to participate in this study is voluntary. You are free to withdraw from the study at any time without giving a reason. If some questions trigger emotions, the interview can be stopped immediately and/or a referral can be provided (e.g., HIV test counselor).

*Benefits*

The results of this study will help inform health providers and policy makers on strategies to improve the uptake of HIV testing among heterosexual migrants.

*Sharing the results*

After the study is completed, results will be shared through a meeting with relevant organizations, health facilities, and other stakeholders. In addition, the results will be translated into an infographic and made available on AHF's website by September 2023. If you would like to participate in the stakeholder meeting or receive a copy of the report, please contact Eline op de Coul at eline.op.de.coul@rivm.nl or Veronica Martinez at vm.martinez3@gmail.com.

*Consent and contact*

I have read and understood the information about this research study. YES/NO

I have been able to ask questions about the study and my questions have been answered to my satisfaction. YES/NO

I consent voluntarily to be a participant in this study, and I understand that I can refuse to answer the questions and I can withdraw from the study at any time, without having to give a reason. YES/NO

I agree to the interview being recorded. YES/NO

I agree to the researcher taking notes during the interview. YES/NO

I agree that my information can be quoted in research writings/papers. YES/NO

I understand that any personal information that can identify me – such as my name, address, email, identification card number, will be kept confidential and not shared with anyone other than the researcher. YES/NO

I give permission for the (anonymous) information I provide to be stored in a data archive. YES/NO

**DECLARATION: TO BE SIGNED BY THE RESPONDENT**

Participant agreement:

The purpose of the interview has been explained to me, all questions and concerns have been addressed, and I agree to be interviewed (name of interviewee).

_____

Signed Date

WITNESS SIGNATURE

_____

Signed Date

If you have any questions or want to file a complaint about the research, you may contact:

| Contact for AHF organization | Contact for Ethics Committee |
|---|---|
| Veronica M. Martinez | Sandra Alba |
| vm.martinez3@gmail.com | s.alba@kit.nl |

Thank you for your time and participation.

**Formulario de consentimiento informado para clientes de AHF Checkpoint (español)**

Hola, mi nombre es Verónica M. Martínez. Soy investigadora de la universidad Royal Tropical Institute (KIT en holandés) en Ámsterdam, Países Bajos. Actualmente estoy realizando un estudio cualitativo para explorar los factores que influyen en el uso de los servicios de pruebas del VIH entre los inmigrantes heterosexuales en Ámsterdam. El propósito es juntar información a través de una entrevista en persona que ayudará a los proveedores de salud y a los encargados de formular políticas a comprender el diagnóstico de VIH en etapa tardía y crear estrategias para aumentar el uso de los servicios de pruebas de VIH entre los migrantes heterosexuales. El estudio se realizará en el AIDS Healthcare Foundation (AHF) Checkpoint en Ámsterdam entre el **01 de junio de 2023 y el 29 de junio de 2023.**

*Procedimientos que incluyen la confidencialidad*

Si acepta participar en el estudio, se le entrevistará sobre sus actitudes, percepciones y conocimiento del VIH y los servicios de pruebas de VIH disponibles, y su experiencia con los servicios de prueba del VIH. También es libre de no participar sin ninguna consecuencia para usted.

La entrevista tendrá lugar en una oficina privada en AHF Checkpoint y tendrá una duración aproximada de **45-60 minutos**.

Para garantizar la calidad de la recolección de datos, las respuestas que proporcione se grabarán en audio con su consentimiento. Si no da su consentimiento, se tomarán notas por escrito. Sus respuestas son completamente anónimas y se mantendrán estrictamente confidenciales. No se recolectará información de identificación personal. Toda la información anónima se guardará en un gabinete cerrado y seguro y solo la investigadora tendrá acceso a la información. Los datos recolectados serán analizados y eliminados dos años después de copiarlas y escribirlas en papel. En las publicaciones sus respuestas representarán los hallazgos generales sobre las pruebas de VIH en AHF para garantizar la confidencialidad.

*Riesgo, molestias y derecho de desistimiento*

Su decisión de participar en este estudio es voluntaria. Usted es libre de retirarse del estudio en cualquier momento sin dar una razón. Si algunas preguntas desencadenan angustia emocional, la entrevista puede detenerse de inmediato y/o se puede brindar una referencia (p. ej., un consejero de pruebas de VIH).

*Beneficios*

Los resultados de este estudio ayudarán a informar a los proveedores de salud y a los encargados de formular políticas sobre las estrategias para mejorar el uso de las pruebas del VIH entre los migrantes heterosexuales.

*Compartir los resultados*

Una vez que se complete el estudio, los resultados se compartirán a través de una reunión con las organizaciones relevantes, los centros de salud y otras partes interesadas. Además, los resultados se traducirán en una infografía y estarán disponibles en el sitio web de AHF en septiembre de 2023. Si desea participar en la reunión de partes interesados o recibir una copia del informe, comuníquese con Eline op de Coul en eline.op.de.coul@rivm.nl o Veronica Martinez en vm.martinez3@gmail.com.

*Consentimiento y contacto*

He leído y entendido la información sobre este estudio de investigación. SI/NO

He podido hacer preguntas sobre el estudio y mis preguntas han sido respondidas a mi entera satisfacción. SI/NO

Doy mi consentimiento voluntariamente para participar en este estudio y entiendo que puedo negarme a responder las preguntas y puedo retirarme del estudio en cualquier momento sin tener que dar razón. SI/NO

Acepto que la entrevista sea grabada. SI/NO

Acepto que el/la investigador/a tome notas durante la entrevista. SI/NO

Doy permiso para que la información (anónima) que proporciono se guarde en un archivo de datos. SI/NO

**DECLARACIÓN: A SER FIRMADO POR EL PARTICIPANTE**

Acuerdo del participante:

Se me ha explicado el propósito de la entrevista, se han abordado todas las preguntas e inquietudes y acepto ser entrevistado/a (nombre del entrevistado/a)

_____

Firmado Fecha

FIRMA DE TESTIGO

_____

Firmado Fecha

Si tiene alguna pregunta o desea presentar una queja sobre la investigación puede comunicarse con:

| Contacto para la organización AHF | Contacto para el Comité de Ética |
|---|---|
| Veronica M. Martinez<br>vm.martinez3@gmail.com | Sandra Alba<br>s.alba@kit.nl |

Gracias por su tiempo y participación.

**Key Informant Informed Consent Form**

Hello, my name is Veronica M. Martinez. I am a researcher from the Royal Tropical Institute (*KIT* in Dutch) in Amsterdam, the Netherlands. I am currently conducting a qualitative study to explore the factors that influence the use of HIV testing services among heterosexual migrants in Amsterdam. The purpose is to gather information that will help health providers and policy makers understand late-stage HIV diagnosis and create strategies to increase the use of HIV testing services among heterosexual migrants. The focus group discussion (FGD) will be done face-to-face sometime between **01 June 2023 and 27 June 2023.**

*Procedures including confidentiality*

If you agree to participate in the study, you will be asked to share your perspectives and thoughts on reasons for late-stage HIV diagnosis among heterosexual migrants in the Netherlands. You are also free to not participate without any consequences for you.

The FGD will take place in a private conference meeting room at KIT and will last approximately **60 minutes**.

To ensure the quality of data collection, the discussion will be audio recorded, upon everyone's consent. If everyone does not consent, written notes will be taken. No personal identifying information will be collected and only the researcher will have access to the information. If you decide to share a story about a patient during the FGD, please do not use any identifying information about the patient. The data collected will be analyzed and deleted two years upon completion of the study. Audio recordings will be deleted after transcription. In publications, your answers will represent general findings on late-stage HIV diagnosis among heterosexual migrants in the Netherlands to ensure confidentiality.

*Risk, discomforts, and right to withdraw*

Your decision to participate in this study is voluntary. You are free to withdraw from the FGD at any time without giving a reason. If some questions trigger emotional distress, the FGD can be stopped immediately and/or a referral can be provided (e.g., counselor or therapist).

*Benefits*

The results of this study will help inform health providers and policy makers on strategies to improve the uptake of HIV testing among heterosexual migrants.

*Sharing the results*

After the study is completed, results will be shared through a meeting with relevant organizations, health facilities, and other stakeholders. In addition, the results will be translated into an infographic and made available on AHF's website by September 2023. If you would like to participate in the stakeholder meeting or receive a copy of the report, please contact Eline op de Coul at eline.op.de.coul@rivm.nl or Veronica Martinez at vm.martinez3@gmail.com.

*Consent and contact*

I have read and understood the information about this research study. YES/NO

I have been able to ask questions about the study and my questions have been answered to my satisfaction. YES/NO

I consent voluntarily to be a participant in this study, and I understand that I can refuse to answer the questions and I can withdraw from the study at any time, without having to give a reason. YES/NO

I agree to the interview being recorded. YES/NO

I agree to the researcher taking notes during the interview. YES/NO

I agree that my information can be quoted in research outputs. YES/NO

I understand that any personal information that can identify me – such as my name, address, email, identification card number, will be kept confidential and not shared with anyone other than the researcher. YES/NO

I give permission for the (anonymized) information I provide to be stored in a data archive. YES/NO

**DECLARATION: TO BE SIGNED BY THE PARTICIPANT**

Participant agreement:

The purpose of the FGD has been explained to me, all questions and concerns have been addressed, and I agree to participate in the FGD (name of participant).

_____

Signed Date

WITNESS SIGNATURE

_____

Signed Date

If you have any questions or want to file a complaint about the research, you may contact:

| Contact for AHF organization | Contact for Ethics Committee |
|---|---|
| Veronica M. Martinez | Sandra Alba |
| vm.martinez3@gmail.com | s.alba@kit.nl |

Thank you for your time and participation.

## Annex V: Ethical Clearance

KIT Royal Tropical Institute

**RESEARCH ETHICS COMMITTEE**

Contact: Sandra Alba
s.alba@kit.nl

To: Veronica Martinez
By E-mail: v.martinez@student.kit.nl

*Amsterdam, 25 May 2023*

**Subject** Decision Research Ethics Committee *S-209*

Dear Veronica Martinez,

The Research Ethics Committee (REC) of the Royal Tropical Institute has reviewed your application for ethical clearance for a study on the Uptake of HIV Testing among Heterosexual Migrants (S-209) that was originally submitted on April 3, 2023.

The Committee has reviewed the adapted protocol and has taken note of your amendments and clarifications and is pleased to see that you have addressed our concerns and questions to our satisfaction.

The Committee is of the opinion that the proposal meets the required ethical standards for research and herewith grants you ethical approval to implement the study as planned in the aforementioned protocol.

The Committee requests you to inform the Committee when substantive changes to the protocol are made, important changes to the research team take place or researchers are added to the research team.

Moreover, the Committee requests you to send the final report of the research containing a summary of the study's findings and conclusions to the Committee, for monitoring purposes by the REC.

Wishing you success with the implementation of the research,

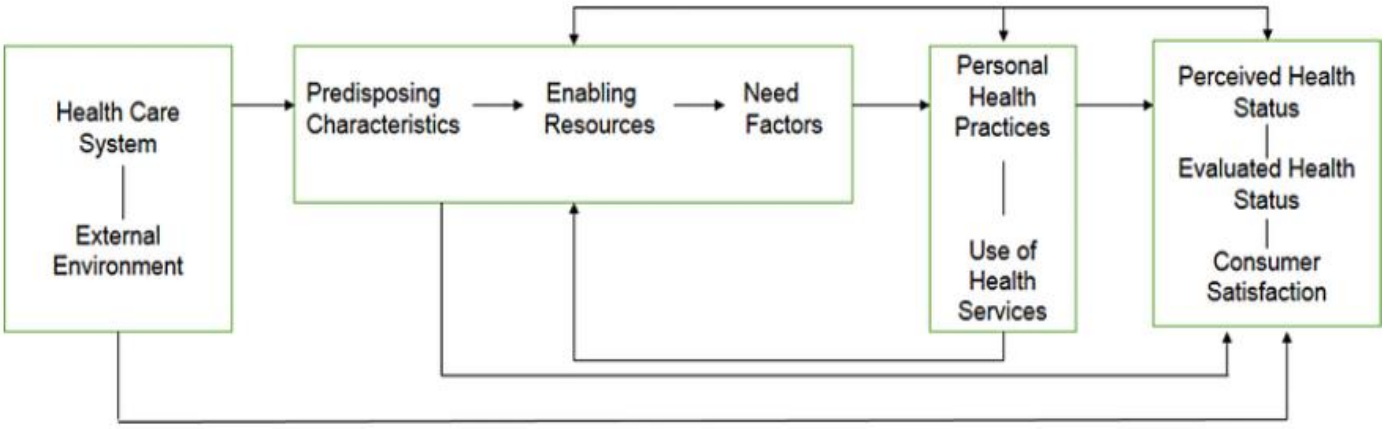
Dr Sandra Alba

Co-Chair
KIT Research Ethics Committee

The Netherlands
Fax +31 (0)20 568 8444

ABN AMRO 40 50 05 970
ABN AMRO USD 62 62 48 183

## Annex VI: Original framework (third version)




Andersen-Newman 1995 Framework for Health Services Utilization [46]