

Access to Voluntary Counseling and Testing Services for Female Sex Workers and Men Who Have Sex with Men in Yemen

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Abstract

Background: Yemen is a country with a low-level HIV epidemic. Available information shows that female sex workers (FSW) and men who have sex with men (MSM) have higher HIV prevalence and underuse voluntary counselling and testing services (VCT).

Objective: This study explores factors that may affect access to VCT services for FSW and MSM in Yemen in order to find feasible approaches to increase access.

Methodology: This thesis is a review of the literature on access to VCT for FSW and MSM in Yemen and in countries with similar cultural issues and epidemic patterns.

Results: The main model used for VCT in Yemen involves a "client-initiated" approach. This approach is not ideal for promoting access to VCT. The factors that influence access to VCT for FSW and MSM in Yemen include laws that criminalize sex work and homosexuality, stigma, limited services and transport costs. Also age, gender, marital status, literacy, low perceived risk and low awareness play a role in reducing FSW and MSM from accessing VCT.

Conclusion and recommendations: To date, levels of VCT by FSW and MSM in Yemen have been low. Different approaches should be used to increase access (such as provider-initiated, mobile and web-based interventions). Further research should be undertaken to identify factors that hinder access to VCT for FSW and MSM.

Keywords: HIV; AIDS; Low epidemic; Concentrated epidemic; MARPs; SW; FSW; MSM; IDU

Introduction

Human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS) are major public health problems all over the world. In 2009, UNAIDS estimated that there are 33.4 million people living with HIV and AIDS globally, of which 22.4 million are in Sub Saharan Africa and 310,000 in the Middle East and North Africa (MENA). More than 97% of 7,400 new HIV infections per day occur in low and middle income countries [1].

Voluntary counselling and testing (VCT) is considered a gateway to prevention, treatment, care and support. Although the availability and utilization of VCT services are continuing to increase worldwide and by 2008 were reported to be available in 119 countries [2]. However, a recent review of the availability of VCT in the MENA region revealed that VCT services are either not available or limited to major cities and are underutilized [3].

Client-initiated HIV voluntary counselling and testing (VCT) is one of the key strategies of the HIV response in Yemen. VCT provides an opportunity for people to know their HIV status. Despite increasing the number of facilities providing VCT in Yemen, the number of people being tested remains below targets [4].

The objective of this study is to explore factors that may affect access to VCT services for female sex workers (FSW) and men who have sex with men (MSM) in Yemen in order to find feasible approaches to increase access.

HIV and AIDS in Yemen

Yemen is considered a country with a low-level HIV epidemic. In 2007, the estimated overall prevalence of HIV was 0.2% [5]. In 2009, the estimated number of people living with HIV (PLHIV) was 23,000 and the cumulative number of HIV reported cases (since the first case in 1987) to 2009 is 2,882 [5,6]. However, there is no available data about the cumulative number of HIV related deaths and orphans.

In 2009, the annual number of newly registered HIV cases was 318. Of these 64% were male, 51.6% were married and 81% were between 15-49 years of age as shown in figure 1. The main mode of HIV transmission was unprotected heterosexual contact 62%, homosexual 7% and through mother to child transmission (MTCT) 5% and about 24% of the reported cases did not have a mode of transmission reported as shown in table 1 [5,6].

In 2006, sentinel surveillance showed an HIV prevalence among tuberculosis (TB) patients and pregnant women of 0.6% and 0.25% respectively [7,8]. In 2008, the bio-behavioural survey carried out in the Aden Governorate among 244 female sex workers (FSW) showed that the percentage of HIV positive FSW was 1.6% [9]. Also one of the

VCT sites in the Aden Governorate reported that the percentage of men who have sex with men (MSM) who tested HIV positive was 7 (8%) out of 84 MSM who accessed and utilized VCT services in 2009 [10].

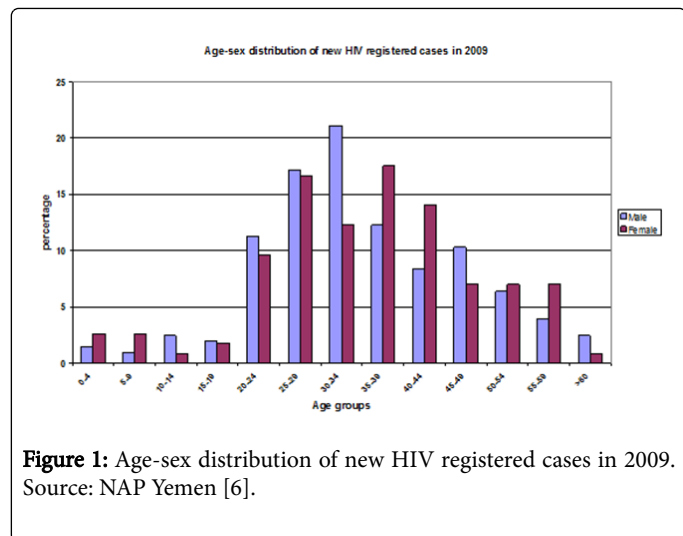


Figure 1: Age-sex distribution of new HIV registered cases in 2009. Source: NAP Yemen [6].

Mode of transmission	gender		Total	
	Female	Male	Number	%
Heterosexual	82	115	197	61.95
Homosexual	0	21	21	6.6
Mother to child	7	8	15	4.72
Blood transfusion	1	5	6	1.89
Sharp injury	2	0	2	0.63
Unknown	22	55	77	24.21
Total	114	204	318	100

Table 1: Distribution of new HIV registered cases in 2009 by mode of transmission. Source: NAP Yemen [6], UNAIDS Yemen [1].

HIV surveillance is still weak and incomplete especially among populations at higher risk [6]. It needs to be borne in mind that the data presented here mainly reflects reported cases and is subjected to sampling and reporting bias. The data is still scant for injecting drug users, prisoners, and mobile populations (refugees, internally displaced persons and migrants). WHO, UNAIDS and UNICEF considered it likely that the country is moving towards a concentrated epidemic with higher prevalence among key populations at higher risk [11].

A 2002 HIV and AIDS situation analysis in Yemen among 2,579 participants (general population, marginalized minority group, Yemenis returning from extended work abroad and refugees) found that the main factors facilitating the spread of HIV infection included poverty, socio-cultural variations among these groups, low HIV-risk perception and population movements, especially migrant workers [12].

Sex work in Yemen is illegal and mainly reflects poverty. Low incomes, high rates of dowry and unemployment might have pushed some men to have sex with men as substitutes for women [13].

The groups most susceptible to HIV infection in Yemen are FSW and MSM. There is no evidence regarding the existence of injecting drug users (IDU) as a driver of the HIV epidemic in Yemen [6].

Some men practice sex with other men for financial gain. For example a small study conducted in the Aden Governorate by El-Karouaoui [14] found that about 32 (91.4%) of 35 MSM are working as SW in Yemen. Participants had no information about protected sex such as using condoms and lubricants. Due to stigma and taboo, MSM are largely invisible in the community and they have reduced opportunities to seek care which might lead to higher risk of spreading HIV.

Almost 80% of 244 FSW who participated in a study in Aden reported low perceived risk. They are less likely to use condoms and to seek medical assistance for STI, which make them more vulnerable to HIV [9].

Regarding IDU, there is no evidence concerning the HIV epidemic among this group in Yemen, and all the studies conducted till now did not show that they have HIV prevalence higher than the wider population. However such studies among the IDU are limited in Yemen, the available data from the assessment that was conducted in Sana'a and Aden showed that most IDU identified are immigrants and foreigners, and there are no reported HIV cases among them [15]. Moreover, given the geographical position and trading history of Yemen, it may well be that IDU is being greatly underestimate by the authorities. Also the bio-behavioural survey conducted in Aden showed that 5 (2%) of 244 FSW were IDU [9]. There is little evidence regarding IDU in Yemen and its relation to HIV. The social stigma and laws make them invisible.

Populations at Higher Risk in Yemen

The NAP has undertaken studies since 2008 to analyze the situation of the populations at higher risk in Yemen. The findings of these studies suggest that FSW and MSM are considered to be drivers of HIV dynamics in the country at this stage [9,14].

FSW in Yemen are engaged in sex work largely because of poverty and they are forced to sell sex mostly at low price [13] at hotels, night clubs, streets and illegal brothels [12]. The social status of FSW ranges from divorced, married, singles and widows [9]. The population size estimate of FSW conducted in 2010 showed that the ages of FSW ranged from 15-55 years with the majority between 20-29 years. The estimated total number of FSW in 5 main governorates (as shown in annex 2) was about 9000-14000 and in Yemen as a whole is 60,000 [16]. The clients of FSW are drawn from different categories of men in Yemen and mostly among those who have good income, security forces, sailors, truck drivers, migrant workers and tourists from Gulf [12].

Many MSM in Yemen captured in the surveys to date, first engaged in homosexual practices when they were young for financial gain or gifts exchange and some of them live as couples. Homosexuality was reported in a study conducted by Busulwa [12] to occur in all categories of people: rich, poor, professionals, as well as the jobless. The majority of MSM who were identified by EL Karouaoui in Aden [14] was single and has low income and they sell sex in hotels, night clubs, on the beach, malls, Qat market or by renting apartments. The findings of the population size estimate of MSM in 2010 showed that the age group of MSM ranged from 15-55 years and the highest number was between 15-34 years. The estimated total number of MSM in 5 main

governorates (as shown in annex 2) was about 8000-12000 and in Yemen as a whole is 44,000 [16].

National Response to HIV and AIDS

The NAP in Yemen was established in 1987 and leads the health sector response to HIV and AIDS on behalf of the MOPHP. It is also responsible for non-health sector responses with the National Population Council (NPC) [5].

The Government has adopted the National Strategy for the Control and Prevention of HIV and AIDS in 2002 which was updated in 2009 for the period 2009-2015. The strategy was the result of a participatory process involving different sectors including private for profit and non-profit stakeholders and it addresses the political commitment towards HIV and AIDS; promotes prevention including condom use and harm reduction programmes; calls for action to improve access to VCT, PMTCT and ART services; and aims to reach populations at higher risk by studies and research [6].

Prevention activities were the main focus of the initial efforts and this continues to the present day. In 2007, VCT and antiretroviral treatment (ART) services were introduced with support provided by the Global Fund to fight AIDS, Tuberculosis and Malaria (GFATM). Currently there are 20 sites in the country providing VCT in 8 governorates: 9 VCT sites are in public health facilities and the rest are in non-governmental organizations (NGOs). There are 5 public hospitals providing ART in 5 governorates and 4 antenatal care clinics in 3 governorates providing prevention of mother to child transmission (PMTCT) services (3 of them public and one of them an NGO) [5].

Male condoms are distributed through reproductive health service providers. However, there are some initiatives on social marketing of male condoms and their availability in the market [6]. Recently, condoms have been distributed through VCT, PMTCT and ART sites [5].

Awareness-raising campaigns to address HIV and AIDS are carried out by NAP, National Population Council (NPC) and NGOs. Such campaigns include the production and distribution of printed materials, travelling theatre, lectures and seminars. In 2009, peer education programmes in life skills, HIV and reproductive health supported by UNICEF, reached more than 49,000 youth in five main governorates [5].

PLHIV have been encouraged by NAP to participate in the HIV and AIDS response of the country and they have a representative in the country coordinating mechanism (CCM). Currently, there are two community based organizations (CBOs) for PLHIV in Yemen. They provide peer support, awareness raising and training of PLHIV [5].

The participation of NGOs and civil society organizations (CSOs) in the national HIV response remains insufficient. However, NAP has begun to engage some in awareness raising activities and advocacy meetings that address different methods for reaching populations at higher risk [5]. In 2010, NGOs and CSOs participated in the development of the national behavioural change communication (BCC) strategy that targets populations at higher risk in Yemen [17].

Methodology

Study design

This thesis is based on a review of literature and data available on access and utilization of VCT services and the reports of the studies conducted among MSM and FSW in Yemen. The strategies that are used to increase access to services in other similar situations were also revised.

Literature search strategy

Literature search was done using electronic databases in Pub Med, Scopus and Google Scholar. Grey literature such as program reports and references and reports from WHO and UNAIDS websites has been included. The KIT library was used to review materials related to the topic.

Keywords and combinations used were HIV, AIDS, low epidemic, concentrated epidemic, MARPs, SW, FSW, MSM, IDU, utilization, access, health seeking behaviours, VCT, PITC, universal access, stigma, discrimination, peer education, integration, private sector, Yemen, Egypt, Morocco, MENA, EMRO.

Inclusion criteria

English and some Arabic articles, full texts and some important national reports were included in the study within a time limit of the last 10 years. Some additional literature outside this time frame was included if relevant.

The conceptual framework used in this study is shown in figure 2. This framework was used to describe the factors affecting access to health services.

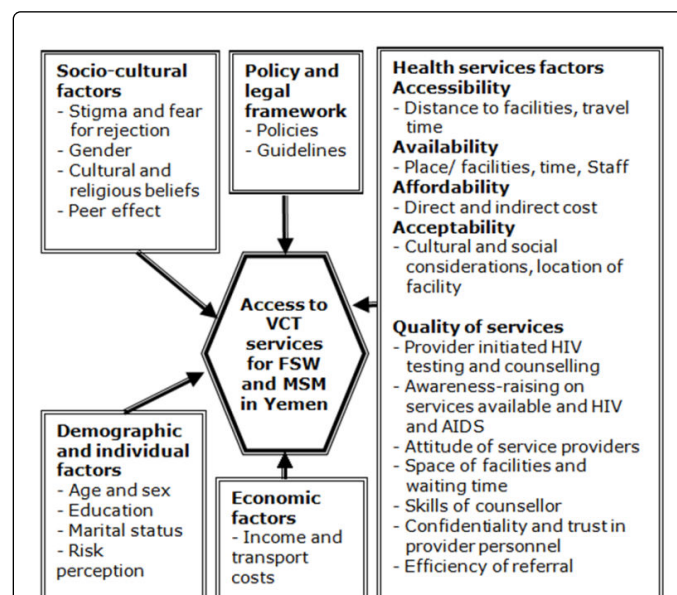


Figure 2: Conceptual framework for analyzing access and utilization of VCT for FSW and MSM in Yemen. Source: Bwambale et al. [18], Penschansky & Thomas [19].

Study Limitations

The study was based on a literature review within a limited period of time. The information was not based on a primary data collection but relies on secondary data. The data presented in this study mainly reflects reported cases and is subject to sampling and reporting bias. The data on access to VCT services for FSW and MSM in Yemen is scarce.

Relevant literature from other countries that have similar characteristics of their HIV epidemics and related cultural issues were reviewed. However, inference has to be made on their relevance to the situation in Yemen. This review could serve as the basis for future studies to be carried out among key populations at higher risk of HIV infection in Yemen.

Study Results/Findings

Coverage and Patterns of Utilization of VCT Services

In 2007, VCT services were established for the first time at 14 sites in Yemen. In 2009, services had been scaled up to reach 20 sites in 8 out of 21 governorates as shown in annex 3, and 60% of these sites are within NGOs [5].

The main model adopted for VCT services in Yemen is client-initiated visits. The VCT policy emphasizes voluntary testing, confidentiality, anonymity and the informed consent of the client [4]. In 2009, provider initiated HIV testing and counselling (PITC) was launched at 3 sites located in the hospitals where ART services exist [20].

The process of testing and counselling includes pre-test counselling, testing and post-test counselling. VCT sites use rapid HIV test kits (Determine, Stat Pack and Unigold) and the clients receive their HIV test results within 20 to 25 minutes [4].

In 2009, the total number of clients who have received pre-test counselling was 3,546 distributed over 8 governorates. The number of clients who subsequently accepted the HIV test was 3,314 representing 94% of 3,546. There is no data about the number of clients who actually received post-test counselling and who were given their HIV status. The total number of female clients during this period who received VCT services was 1,102 representing 33% of the total number of people who were tested (3,314) [6].

The number of VCT sites in the Aden Governorate is proportionality more than in other governorates (as shown in annex 4). It is therefore not surprising that the highest number of clients who accessed the VCT services in 2009 was in Aden as shown in figure 3 [6]. There is no information on the selection and the distribution of VCT services in those governorates.

No client tested HIV positive out of 111 clients who accessed and utilized VCT in 2007. But in 2008 and 2009, the number of reported HIV cases from the VCT sites was 31 (13%) and 71 (22%) of the total number of HIV reported cases per year respectively as shown in figure 4 [6]. Also in 2009, PMTCT services introduced in 4 ANC clinics in 3 governorates and PITC was used with the option to "opt out". The total number of pregnant women who were reached by PITC in these ANC clinics was 4,211 representing 0.5% of the estimated number of pregnant women per year (800,000) and the number of reported HIV positive pregnant women was 7 which is 10% of the total number of HIV reported in the same year as shown in figure 4 [5].

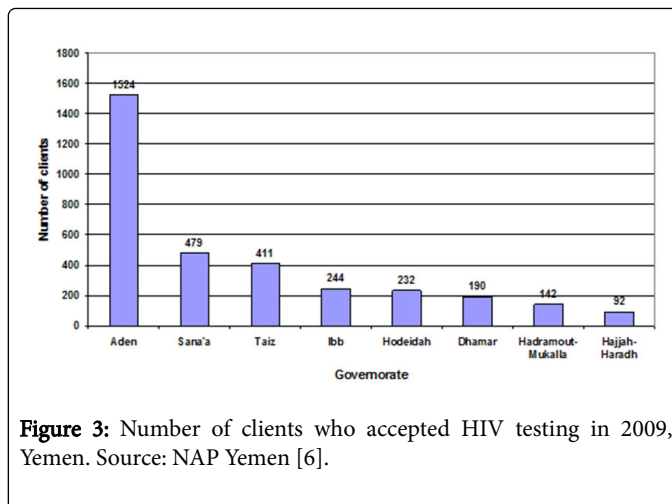


Figure 3: Number of clients who accepted HIV testing in 2009, Yemen. Source: NAP Yemen [6].

The data reveals that the number of people who accessed and utilized VCT was low in comparison to mandatory HIV testing. The majority of PLHIV in Yemen who know their HIV status learned it through mandatory HIV testing as a prerequisite for migration, surgery, employment for certain private jobs, donation of blood or residency renewal as shown in figure 4 [4].

There is no information available from VCT sites about the number of populations at higher risk who accessed VCT services in 2009 apart from one NGO that is providing VCT in the Aden Governorate. This NGO showed that 84 MSM accessed and utilized VCT services in 2009 and proactively implemented peer education programmes for MSM and offered the services to MSM [10]. Clearly the available data is the result of sampling patterns and possibly also influenced by reporting bias.

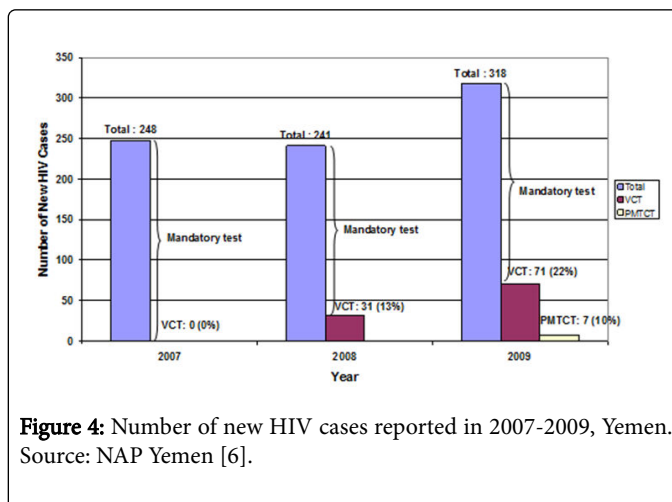


Figure 4: Number of new HIV cases reported in 2007-2009, Yemen. Source: NAP Yemen [6].

Factors Affecting access to VCT Services in Yemen

Policy and legal framework

Homosexuality and sex work are illegal in Yemen and punishable under the law [6]. Article number 263 of the Law number 12 of 1994 on the crimes and penalties provides for punishment of MSM and FSW. Prostitutes, brothel owners and some hotel owners where sex workers are available are subject to imprisonment [14].

In contrast, PLHIV law and the National Strategic Framework for the Control and Prevention of HIV and AIDS are considered the national policies on HIV and AIDS in Yemen. In 2009, the parliaments endorsed the law on PLHIV which aims to protect PLHIV rights. This law addressed HIV related stigma and discrimination and ensured that PLHIV get proper treatment and care [5].

The national strategy addresses FSW and MSM as key populations at higher risk for HIV infection in Yemen. Priority area number 10 states that identifying populations at higher risk and initiating interventions to change their behaviours should be achieved by the end of 2010. It also mentions that these groups should be involved in the design, implementation and evaluation of any interventions targeting them, including VCT [6].

There are political commitments by the government and religious leaders for HIV and AIDS prevention activities in Yemen. However, weaknesses such as low government budgets for HIV and AIDS and inadequate participation of religious leaders in HIV prevention activities remain [6].

The national plan and initiatives from some NGOs targeting populations at higher risk are considered good opportunities that have helped to reach these populations [6]. Estimation the size of FSW and MSM in 2010 by NAP may help to design interventions to improve their access to VCT services. Also, conducting a bio-behavioural survey among FSW in Aden in 2008 by NAP helped to document risky behaviours and HIV prevalence [9]. Peer education programmes for MSM were implemented in ISSA in Aden as I mentioned previously and although limited in scope are considered to be a successful model for MSM to access VCT services [21].

NAP used the National Counselling and Psychological Support Guidelines to train service providers at VCT sites. In 2009 NAP developed national VCT guidelines and training curriculum. In 2008, three rapid HIV tests (Determine, Stat Pack and Unigold) were made available at VCT sites according to the national algorithm as shown in annex 5. This helped to reduce the waiting time for test results [4].

Demographic and Individual Factors

Age and sex

Age and sex play an important role in access to VCT services. The older people are, the less likely they are to use VCT [18].

The total number of clients who accessed and utilized VCT services for the period July-December 2009 was 1,668 and of them 94% were aged between 15-39 years as shown in figure 5. The male to female ratio was 1.5:1. 29 of 45 clients (64%) who tested HIV positive at VCT sites belong to the 15-39 age groups [6].

Of the MSM who accessed VCT in 2009, 84 were aged 15-46 and all of the 7 MSM who tested HIV positive are aged 15-24 [10].

The data presented above indicate that most of the clients who accessed VCT and tested HIV positive were young. This may be because young accessed VCT more readily. Female clients were less likely to access VCT services. This may reflect socio-cultural barriers such as inability of female to access VCT alone or may be due to the presence of male counsellors at VCT sites that prevents them from accepting the services.

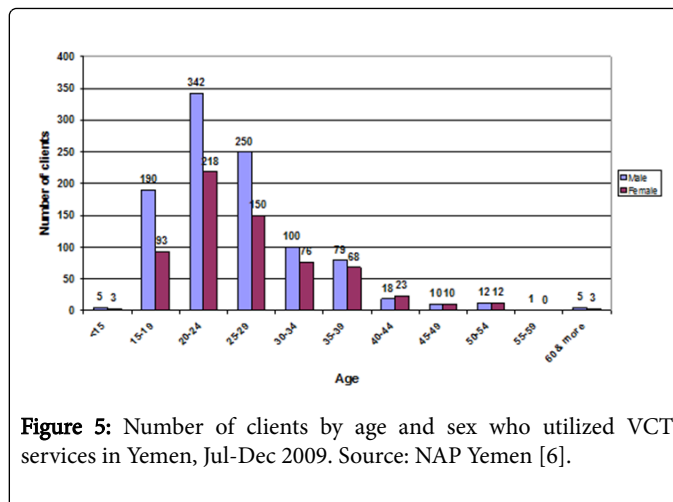


Figure 5: Number of clients by age and sex who utilized VCT services in Yemen, Jul-Dec 2009. Source: NAP Yemen [6].

Education

Education is an effective way to promote access to HIV and AIDS related information and services. It has been argued that people who have lower education are more likely to be in denial regarding their HIV status [18] and less likely to have access to HIV information.

The data collected from the VCT sites for the period July-December 2009 revealed that the total number of clients who accessed and utilized VCT was 1,668. Of these, the largest category of clients who accessed and utilized VCT had secondary education (663) which represents 39% of 1,668 and the smallest category was 260 (16%) among illiterate clients as shown in figure 6 [6]. To put these figures into perspective, it should be noted that 40.7% of the general population is illiterate [22].

The total number of clients who tested HIV positive at VCT sites for July-December 2009 was 45. Of them 24 (53%) were among illiterate clients as shown in figure 7 [6]. There are no data from the VCT site in ISSA concerning the level of education among MSM who accessed and utilized VCT services in 2009.

These findings suggest that illiteracy is playing a role in accessing VCT services and increasing vulnerability to HIV infection and this possibility needs to be studied further.

Marital status

The available data for the period July-December 2009 reveal that 59% of 1,668 of people who accessed and utilized VCT services were single and 38% were married (as shown in figure 8). However, among those who tested HIV positive, only 18 (40%) were single and 21 (47%) were married out of 45 which is the total number of HIV tested positive clients at VCT sites [6]. The report of the VCT site in ISSA reveals that all MSM who attended the VCT services in 2009 were single [10]. But this figure needs to be interpreted with caution as it is quite possible that married MSM were recorded as “heterosexual” and went unrecognised.

Risk perception

Knowledge and education are considered to be a motivation for utilizing VCT services [18]. Low perceived risk is among factors that make people refuse VCT [23].

Low perceived risk in Yemen appears to be heavily influenced by lower education and awareness of reproductive health issues especially HIV and AIDS [12]. According to UNAIDS, the majority of PLHIV knew about AIDS before getting the infection and one of the problems that assisted the spread of HIV was that Yemenis generally felt it was a problem for foreigners [24].

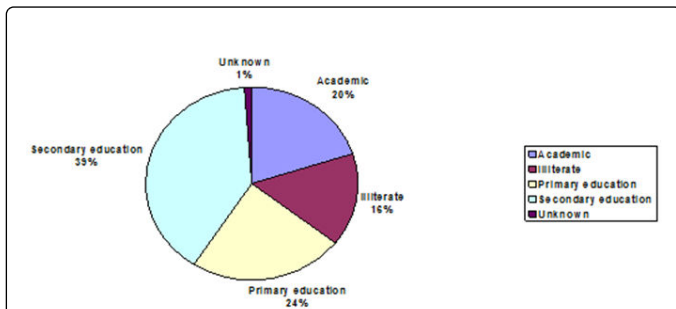


Figure 6: Percentage of education level of clients who utilized VCT in Yemen, Jul-Dec 2009. Source: NAP Yemen [6].

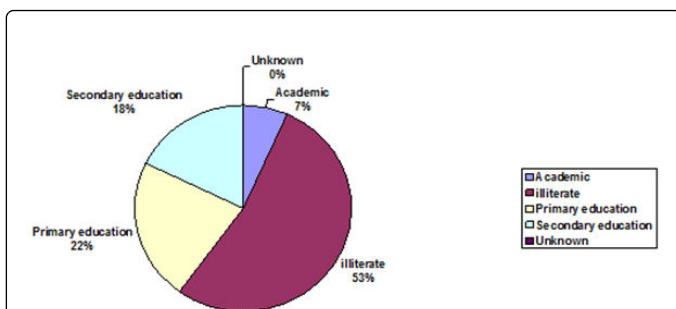


Figure 7: Percentage of HIV positive clients by level of education, Yemen. Source: NAP Yemen [6].

However, the study conducted by Busulwa [12] in Yemen showed that 24% of 2,579 reported symptoms consistent with STI among both single and married women. Furthermore, the women who participated in the study were generally unaware that of the symptoms of STI require treatment and instead, they would wait for the symptoms to go away on their own. This approach is problematic both because STI should not be assumed to be cured simply because symptoms disappear, but also because at any point in time, most people with STI are have no symptom [25,26].

Almost 80% of 244 FSW who participated in the bio-behavioural survey in Aden were self-assessed HIV risk as low or non-existent [3,9]. The MSM who were interviewed in Aden were not using condoms with regular partners and use them with new customers only sometimes [14].

In addition to people in Yemen (including FSW and MSM) perceived that they have low risk of STI including HIV. It is also the case that health care providers (HCP) perceived that HIV and AIDS patients do not exist in Yemen [27].

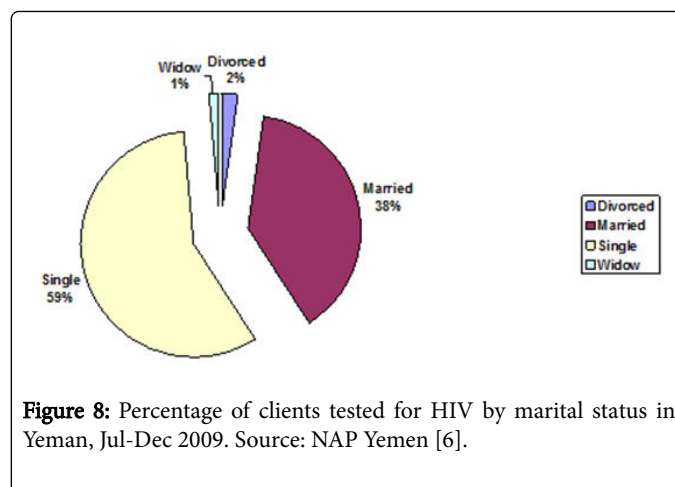


Figure 8: Percentage of clients tested for HIV by marital status in Yemen, Jul-Dec 2009. Source: NAP Yemen [6].

Socio-Cultural Factors

Stigma and fear for rejection

HIV related stigma contributes to the marginalization of PLHIV and their families. MSM and FSW are perhaps the most hidden and stigmatized populations in the MENA region and they lack access to comprehensive and confidential services [3].

In 2009, data from the VCT sites showed that the number of clients in general who attended the VCT with private sector was 2,218. This figure represents 63% of 3,546 clients who accessed VCT for the same period which is almost double the number of clients 1,328 who accessed the VCT at public health facilities (which represent only 37% of 3,546) [6].

PLHIV are highly stigmatized in Yemen and their care is often refused by HCP. Rejection, isolation, and avoidance of PLHIV have a negative influence on access and utilization of VCT services by people in Yemen. There is fear of being testing HIV positive because of the risk of stigma and discrimination in the work place and by health care providers. This can lead to job termination and denial of care [28-30].

Stigma is considered to be one of the principal barriers for accessing VCT for FSW and MSM in Yemen. Many prefer to undergo HIV testing at private clinics (profit and non-profit) where the atmosphere is often more accepting [14].

Access to VCT services by the wider population in the private sector is better than in the public health setting. Likewise this may be due to better confidentiality [20] and is less likely to be associated with stigma and discrimination [21].

Gender

Gender affects access to VCT services: both women and men experience different barriers to access. For example men have low perceived risk but women fear HIV testing more than men [31]. The evidence also suggests that men have access to VCT if they are symptomatic while women are likely to access VCT if their partners tested HIV positive or during pregnancy [32].

Yemeni society is male dominated and there are wide gender disparities [6]. Access to VCT services is higher for males than females [6]. This may be due to barriers such as females being less likely to seek

health care because of a lack of financial resources and because they often need to obtain permission from their husbands or other family members [33]. Another barrier may be that having only male or female counsellors at VCT sites makes it difficult for both women and men to access the services especially those who have risky behaviours [4].

Cultural and religious beliefs

Cultural and religious beliefs play a role in shaping the response to HIV and AIDS [34]. Taboos surrounding sexuality and STI (including HIV and AIDS) remain a key constraint in Arab culture [30].

People in Yemen believe that extramarital sex and homosexuality, which are considered to be prohibited in Islam, are the main source of HIV. Therefore, they assume that Yemeni people are at lower risk of HIV infection [6,12] and this affect their decision to access VCT.

FSW and MSM are marginalized in Yemeni society because of Islamic religious norms which encourages them to hide and are less likely to access VCT [14].

Although, the efforts that have been undertaken by the MOPHP in advocacy and raising awareness targeted different stakeholders in the community (such as religious leaders) [6], it is still taboo in Yemen to talk about sex or HIV and STI in schools, workplaces, mosques or homes [35]. As a result Yemeni people, especially youth, seek other sources of sexual education such as television and the internet. The evidence suggests that 93% of 2,510 students used TV and 34% of 2,510 were using the internet [36].

Peer effect

Peer effect in the MENA region was found to be a key determinant for engaging in risky behaviours including drug use and male-male sex [3].

Sex work is highly stigmatized in Yemen, but it can be discussed among close friends and this may result in further people engaging in sex work [12].

On the other hand, peer pressure can be used by friends to encourage their peers towards non risky behaviours, this includes informing peers about the availability of VCT services and encouraging them to be tested [36,37].

Economic Factors

Income and transport cost

Poverty in Yemen is severe and about half of the Yemeni population earn less than US\$2 per day [38]. Limited financial resources for people will hinder their access to VCT services especially because these are limited to 8 governorates and transport adds to the cost. For instance, people who live more than twenty kilometres from the clinics have been shown least able to afford transportation cost [28].

The majority of FSW and MSM in Yemen engaged in sex work do so because of poverty and the income from sex work is low [13]. As a result, they may avoid seeking medical advice because of cost [9].

Service Related Factors

Geographical accessibility

Yemen has extensive remote and mountainous areas and it takes time to travel to the cities where health services are available [22]. These geographic factors restrict the movement of people especially women, and prevents them from accessing health services, including VCT.

There are 20 VCT services in Yemen distributed unequally over 8 governorates. The population size of the Aden Governorate is 684,000 and there are 5 VCT sites. In contrast, the population size of Sana'a Governorate (the capital of Yemen) is around 3,000,000 and there are only 4 VCT sites. Likewise, the population size of the Ibb Governorate is around 2,400,000 and there is only one VCT site [6,22]. The selection of VCT sites is not related to the population sizes in each governorate not to estimates of target groups such as FSW and MSM (Ismael, 2009). This inequality in the distribution of VCT services almost certainly explains why more clients accessed services in some governorates than others (Figure 4).

Availability

“Availability refers to whether or not appropriate health services are in the right place and at the right time” [39].

The location of VCT services plays a role in access to services. The use of VCT services located in public health settings was low in comparison to those located in NGOs. As mentioned previously, the evidence suggests that about 63% of 2,218 clients accessed VCT services located in NGOs [6]. It may be that these organizations feel safer more private and are less likely associated with stigma [20].

The working hours of VCT services either at public or NGO settings are between 08h00-14h00. Services are not available after working hours or during weekends. On the other hand, the staff who work as counsellors at VCT sites also have other tasks related to their main jobs (for example lab technicians). Rapid HIV testing kits (3 types from different companies as shown in annex 5) are available at VCT sites and the NAP is responsible for procurement and supply [4].

Affordability

“Affordability refers to the “degree of fit” between the cost of health care and individuals’ ability-to-pay and is sometimes referred to as financial access” [39].

All VCT services in Yemen are supported by the GFATM and UNICEF [21]. Services are provided at no cost, but clients have to pay for their own transportation [9,14]. This indirect cost is a challenge for people living under the poverty line [40]. Indirect costs further limit access to VCT services that are located only in selected governorates. To further add to the situation, many SW in Yemen are poor and sell sex at a low price [13].

Acceptability

“Acceptability refer to the social and cultural distance between health care systems and their users and is sometimes referred to as “cultural” access” [39].

People in Yemen are hesitant to accept VCT services, in part because they fear rejection by their families or employers [29]. The

location of VCT services in public health facilities prevents them from accepting services because of the fear of HIV and AIDS related stigma and discrimination [27]. The presence of male counsellors at VCT sites (sometimes exclusively male) poses a challenge for women in accepting VCT services [4].

FSW and MSM are socially forbidden and criminalized by the law. This affects their health seeking behaviours and makes them cautious when considering VCT [14].

Quality of Services

Provider initiated HIV testing and counselling (PITC)

The VCT sites in Yemen use a client initiated approach. Recently, PITC was launched in 3 hospitals but the provider initiated approach is also not fully utilized. There were only 360 patient visits reported from the 3 PITC sites in 2009 [6]. There seems to be low staff awareness for offering PITC services to symptomatic patients who attend potential entry points such as STI clinics [20].

Awareness-raising

The official awareness-raising strategy targets the wider population and does not focus on populations at higher risk [5]. VCT services in public health settings are not integrated in the existing services in the same health facilities. As a result, health care providers are largely unaware of the availability of services [5] and they are less likely to refer patients for VCT [20].

VCT service providers have limited information or training about reaching out to FSW and MSM. Apart from ISSA in Aden there are no reports from VCT sites of purposely targeting FSW and MSM. There is no clear data about the utilization of VCT services for FSW and MSM except for that one site in Aden mentioned earlier [4].

Attitude of service providers

Service providers working at VCT sites have been trained to be "neutral", "non-judgmental" and to provide the services in a confidential way with informed consent and to maintain anonymity [4]. However, HCP who have not had any training in HIV and AIDS still behave negatively towards PLHIV and towards populations at higher risk [28]. For example, the names of PLHIV are used when single cases are reported from health facilities to the NAP focal person at the governorate level even though this is not required in order to safeguard privacy. Untrained HCP may also inform other authorities of the infected person's identity [21]. Due to high stigma and discrimination against MSM by HCP, there is pressure to hide their sexual identity when visiting health facilities [14]. As a result, data on MSM, like all marginalised groups, may not be reliable.

Space of facilities and waiting time

Most VCT sites have at least the minimum standard required for providing services such as reception, waiting rooms, counselling offices and toilets for clients /staff. But some VCT sites located in structures not offering health care services (such as the NAP) have no waiting area. This arrangement runs their risk of compromising confidentiality. The absence of a counselling room in hospitals that launched PITC services was raised as one of the main reasons hindering patient referral for VCT [20].

Same day test results using rapid HIV test has decreased the waiting time for clients wanting to know their HIV status: HIV test results are now normally available within 20 to 25 minutes [4].

Skills of counsellors

Draft VCT guidelines and training curriculum were developed in 2009. NAP used the national counselling and psychological support guidelines to train service providers in order to launch VCT services in 2007. Counselling quality is very uneven between VCT sites. Counsellors have different backgrounds including lab technicians, social workers and psychologists [4]. However, 94% of 3,546 clients accepted HIV testing after they received pre-test counselling in 2009 [6]. While this uptake may reflect counsellor skill, it may also reflect that consent is not as free and informed as is assumed.

Confidentiality and trust in provider personnel

Emphasis is put on maintaining confidentiality at VCT sites. However, if counsellors refer HIV positive symptomatic clients to general health services, the HCP who receive the cases have to use their names to provide care. Moreover, as previously mentioned other health facilities that discover an HIV positive case are known to inform the NAP focal point at governorate level by using the name of patient [21]. This may be due to inadequate training of HCP and almost certainly undermines trust in the services.

Efficiency of referral

In general there is no health referral system in Yemen, and when it comes to HIV and AIDS it is not possible to track whether clients referred from elsewhere in the health system actually attend (Abdullah, 2007). However, a referral form was created by NAP and used by service providers at the VCT sites. This form is used to refer PLHIV to treatment and care services [21].

In hospitals that introduced PITC services, PITC utilization was very low (as mentioned earlier in page 25). There appears to be weak referral of symptomatic patients who attended the entry point to PITC services (such as STI and TB clinics). This may be due to absence of testing facilities within the hospitals or that the HCP are not yet aware of the availability of PITC services or the need to use them [20].

There is limited integration of VCT within other services such as care and treatment, social support and community services. For example, there are two VCT services in the Yemeni Family Care Associations in Sana'a and IBB governorates. These are not integrated with other women and child health care services that are provided at the same location [4].

Interventions to Increase Access to VCT

The key populations at higher risk require safe, voluntary and accessible VCT, offered to them in a peer-driven and non-judgmental manner [41].

Different approaches have been used in different countries under similar circumstances to Yemen (such as Oman, Pakistan, Morocco, Egypt and Lebanon) to increase utilization of VCT services by key populations at higher risk especially FSW and MSM as shown in figure 9.

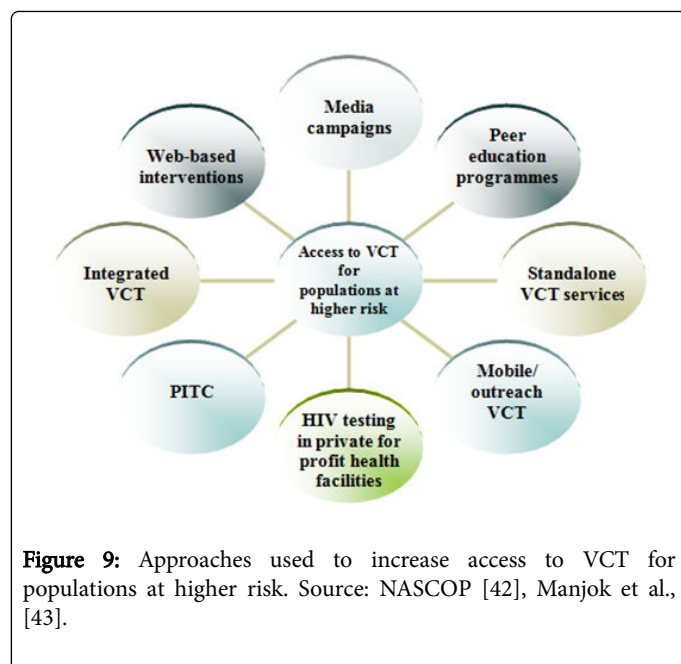


Figure 9: Approaches used to increase access to VCT for populations at higher risk. Source: NASCOP [42], Manjok et al., [43].

Stand-alone VCT

A client-initiated VCT service is the primary model used by many countries. The service is generally provided outside of the health facility (outreach), with referrals of PLHIV for care, treatment and support. This stand-alone VCT can have committed staff, flexible hours of operation, and strong community links. Nevertheless, stigma, individual attitudes and personal perceptions of risk have a considerable effect on the utilization of VCT especially by populations at high risk for HIV [43].

Stand-alone VCT is used by some countries in the MENA region such as Oman and Pakistan. But utilization was still low in countries where HIV and AIDS related stigma is still present [44]. This problem is not confined to MENA countries, in Uganda people can access VCT for free in stand-alone VCT clinics, but testing rates are still low [45]. In Belize, it was found that clients were uncomfortable visiting the stand-alone VCT because of stigma [46].

Integrated VCT

Populations at higher risk of HIV have a range of special health needs and they may be more likely to attend services such as STI or TB clinics. Integrating VCT into the existing health care settings is less costly and facilitates cross-referrals. But populations at higher risk, who do not access health services due to stigma, likewise may not attend and utilize integrated VCT [43].

In many countries in the MENA region, VCT was integrated within STI and TB clinics. Iran has had success in increasing the utilization of VCT by IDU by integrating the services into harm reduction programmes [44].

In Pakistan, there are at least 20 projects which have integrated VCT services in order to reach populations at higher risk such as IDU, SW, MSM, truck drivers and prisoners. However, the report still notes that challenges continue to exist in scaling up VCT to higher risk populations [47]. The VCT services targeting the MSM in China are integrated into STI clinics to improve their access to VCT [48].

PITC

Service providers have to offer VCT to patients attending health facilities in a confidential manner with voluntary and informed consent [49]. This approach is recommended in health care settings in countries with generalized HIV epidemics, as well as in some health care settings in countries with low-level or concentrated epidemics [49]. The introduction of PITC in health settings in Botswana appears to have caused neither a reduction in the use of health services nor a decline in the proportion of people receiving test results [50]. Moreover, there was an increase in HIV testing for STI patients from 14% in control clinics to 33% in intervention clinics [51].

VCT is always recommended for (i) patients whose clinical presentation might result from underlying HIV infection, (ii) for all HIV-exposed children and (iii) prior to HIV post exposure prophylaxis. While in low-level or concentrated epidemics, PITC is not recommended for all patients attending health facilities. Instead it should be considered in a range of specific situations such as (i) where patients have come for STI services; (ii) where services are provided to populations at higher risk; where patients have come for antenatal, childbirth and postpartum services; and (iii) for TB and hepatitis-related services [33].

There are no data from the MENA region regarding PITC. In most cases HIV positive results were identified when offering routine VCT at health facilities. For instance, in Sudan VCT is offered for suspected AIDS cases. In Djibouti, HIV testing was offered to pregnant women attending ANC. In Somalia, it was offered to TB patients, while in Iran, VCT was offered to symptomatic patients or populations at higher risk such as IDU and prisoners [44].

HIV testing in private for profit health facilities

The national health sector strategies and plans should call for the active and meaningful engagement of private for profit health facilities. They would benefit from participating in strategic planning, programme development, implementation, and monitoring and evaluation. Private for profit health facilities can play critical roles in expanding VCT services, particularly for populations at higher risk. They can offer services outside normal working hours and it may be possible for them to remove any financial barriers [33].

In most countries in the MENA region confidentiality can not be assured in public health services. There is no specific data, but the World Bank reported that most people seek services from private for profit health facilities if they suspect they have HIV [52]. Many private for profit health facilities provide HIV testing and they rarely report to the public health programmes on HIV [44]. While this calls national data into question, it offers de facto privacy protection.

Similar finding have been reported elsewhere. Women in Uganda apparently prefer to receive PMTCT services at private for profit health facilities. Confidentiality was maintained and the client's satisfaction with the service was high. These facilities were also favoured because they trusted the midwifery practices [53]. In Kenya, about 77% of 301 adults who participated in a study to determine the utilization of VCT services preferred private doctors' offices as testing facilities [54].

Mobile/outreach VCT

Mobile outreach VCT helps to take VCT services to populations that are considered hard to reach [55]. Generally this includes implementing mobile VCT either through the use of vehicle with

private counselling rooms, tents as counselling rooms or pre-existing community facilities such as hotels, night clubs or market buildings. This procedure requires social mobilization and awareness raising initiatives to encourage populations at higher risk to attend and to learn their HIV status [49].

Groups of SW, MSM and IDU are outlawed in the socio-political and religious context of the MENA region. Under such circumstances, the community-based approach for reaching populations at higher risk is very useful for engaging FSW, MSM and IDU in awareness efforts and creating a bridge with HIV services [56]. There is no specific data from the MENA region but some countries such as Egypt and Lebanon initiated partnerships with police and community leaders to facilitate the implementation of such programmes targeting populations at higher risk. In Egypt, mobile VCT services have been carried out since 2005 and helped to increase utilization of VCT especially by MSM and IDU [57]. Also NGOs in Lebanon played roles in reaching MSM who are considered the most culturally sensitive group in the community and they offered them VCT [3].

In Morocco, stigma, fear of receiving HIV test results, lack of confidentiality and long distances to VCT sites hindered the client-initiated approach. Instead, it was found that mobile VCT strategies (which have been implemented for several years by CBOs) were more effective in reaching populations at higher risk than institutional VCT approaches. The combination of peer-based counselling and rapid HIV testing, offer interesting preventive approaches for reaching more FSW and MSM in Morocco who otherwise would have difficulties in utilizing the health facility based VCT services [58].

In Switzerland, a bus was used as a mobile clinic in the red light district between 10 pm and 1 am for 5 nights. VCT was offered to clients of SW through specially trained nurses. It was found that 27.7% of 112 clients who have never been tested for HIV did accept HIV testing by this system [59].

Peer education programmes

Peer education programmes provide specific training to a group of people who share the same characteristic in order that they influence and educate their peers. For example in Tunisia MSM peer educators played a role in increasing the utilization of VCT and HIV prevention services [3].

NGOs in Morocco established peer education programmes within VCT sites targeting MSM, FSW and IDU. There is no specific data, but it was reported in a study by Hermez et al. [44] that these programmes attracted members of peer groups to VCT services.

In China, MSM peer educators were involved in opening a stand-alone clinic near major MSM meeting places. It was found that the utilization of VCT services by MSM increased more than other HIV prevention projects that rely on referral to general-population testing services [48].

Media campaigns

Awareness-raising about VCT services and their importance as an entry point for prevention, treatment and care services helps to increase access to HIV related services [60]. For example Pakistan emphasized the importance of awareness-raising among populations at higher risk concerning the availability of VCT services. This was because it was found that 27% of 153 SW and IDU knew of VCT services and only 16% of 153 participants had visited VCT centres [61].

Media campaigns play a key role in marketing VCT services by helping to raise the awareness of populations at higher risk for HIV and AIDS and related services [50]. In Shenyang, China from June 2006 to July 2007 it was found that 89% of 2,676 VCT clients from a high risk area (including MSM) knew about VCT services from TV and newspapers [62].

Mass media is the most effective method of disseminating HIV and AIDS knowledge particularly among youth in the MENA region. Different populations identified TV as the main source of their HIV and AIDS knowledge: 98% in Egypt, 83.6% in Iran, 92% in Pakistan and 90% in Sudan. Radio is also considered to be an important source of HIV and AIDS information in resource restricted countries like Sudan [3].

Web-based interventions

In some cases, the internet is considered to be a useful approach to communicate with populations at higher risk. In Peru, a study was conducted to assess the use of internet as a tool to access MSM. They offered VCT for free as an incentive for MSM to participate in the study. 17% (80/477) MSM who were not previously tested for HIV opted to take the test [63]. Also in Peru, a video-based intervention was provided through a website targeting MSM. About 63% who saw video messages of 97 non-gay identified men and 50% of 142 gay men who were exposed to a video-based web intervention were more likely to report their intention of getting tested for HIV within the next 30 days; versus 15.4% of 90 non-gay and 22% of 130 gay men who were received text-based intervention [64].

These data showed that web-based interventions are effective for linking VCT services to populations at higher risk especially MSM. Also, offering the services through the internet by using video was found to be better than text messaging alone for accepting VCT services by MSM.

Discussion

In this chapter, I will discuss the factors that are likely to be important for FSW and MSM in accessing and utilizing VCT services in Yemen. I will also discuss the successful interventions that have been used in other countries.

Coverage and pattern of utilization of VCT services

Currently the geographic coverage of VCT services is very low and uneven in Yemen. In order to facilitate greater access, the evidence suggests that we look beyond the public sector and that greater emphasis should be placed on the private sector. Including the private sector will not only increase the number of potential sites, but based on data presented earlier, this should also increase access and utilization of VCT by populations that normally will not access the public services for help with sensitive issues to do with STI and with HIV.

Policy and legal framework

Yemen's law depends on Islamic traditions. Therefore, it is difficult to change the laws which criminalize FSW and MSM in Yemen, because these behaviours are forbidden in Islam. However, there is political commitment for HIV and AIDS prevention interventions in Yemen and the national strategy for the control of HIV and AIDS addresses FSW and MSM as key populations at higher risk of HIV [6]. Unfortunately, there are no concrete strategies to increase access to

VCT services for FSW and MSM. However, the recent estimation size of FSW and MSM which was conducted by the MOPHP in 2010 can help to design appropriate interventions to reach these groups by VCT services.

There is a gap between the national policy level and the day-to-day delivery of VCT services in Yemen. Involvement of other stakeholders considered to be the main partners in the national strategy such as the Ministry of Human Rights, the Ministry of the Interior and the Ministry of Endowment [6] and FSW and MSM in designing, implementing and monitoring and evaluation of interventions targeted FSW and MSM will help to create a more enabling environment. Such co-operation should also help to protect the rights of FSW and MSM to access HIV-related information and services. Involvement of the private sector for providing VCT services for FSW and MSM may enable governments to deal with these groups "at arms length", thereby avoiding cultural sensitivities among highly stigmatized and criminalized populations.

Demographic and individual factors

It is perhaps not surprisingly that most of the clients who accessed and utilized VCT services in Yemen are aged between 15-39 years [6]. Males are more likely to access VCT services than females even though they have nearly equal proportions in the population. This difference may be due to socio-cultural barriers that prevent women from accessing VCT services when not accompanied by a male relative. Also women in Yemen have a higher illiteracy rate than men [22]. This almost certainly affects their risk perception and health seeking behaviours. The VCT report from ISSA [10] showed that men who were identified as MSM who accessed VCT were both few in number and young (15-46 years old). Likewise FSW who were reached according to the study by Stulhofer and Bozicevic [9] were from the same age group. This age group is more susceptible to HIV infection in Yemen as shown in figure 1 [6].

The high level of illiteracy in Yemen negatively affects people's awareness regarding HIV and AIDS. Illiterate people currently have a lower use of VCT services than the rest of the population. Overall the illiteracy rate in Yemen is 40.7% whereas only 16 % of 1,668 VCT attendances were by illiterate people. Possible reasons include that illiterate people have less access to general information on HIV and AIDS and that they are not able to read written material, and possibly having less access to TV and other forms of communication or it may correlate with being unable to afford to attend. The role of illiteracy in accessing VCT services needs to be researched further.

The findings showed that single clients have more access to VCT than married clients especially MSM. It is possible that married people are less at risk, but it may also reflect stigma and fear of scandal. The NAP annual report [6] showed that the MTCT of HIV increased in the last year. Marriage should therefore not automatically be assumed to confer protection.

Media campaigns through TV and radio are helpful interventions in the Yemeni context, where illiteracy and stigma are still high. Effective participation of the Ministry of Information in the HIV response will ensure continuous delivery of HIV and AIDS messages to populations with different educational levels in Yemen, especially through national and local radio.

Capacity building of FSW and MSM through peer education programmes carried out by some NGOs in Yemen and training them

as peer counsellors to reach populations at higher risk showed success in most countries in the region [3].

The internet plays a role among young people by providing them sex education that might decrease risky behaviours [65]. Sex education is still taboo in Yemen and for better or worse most young people use the internet as their main source of sexual knowledge. Internet cafés are distributed widely in the main cities in Yemen and are popular with young people [36]. Using the internet to offer information on VCT services for populations at higher risk especially MSM may therefore help those who utilize the internet in Yemen.

Socio-cultural factors

In Yemen, gender disparities play a key role in accessing VCT services. There are barriers that prevent women from accessing VCT services including not being able to access VCT services unaccompanied and the presence of only male or female counsellors at VCT sites may lead both sexes to be reluctant to accept services or to disclose information. Encouraging family/couple counselling may help women to utilize VCT. Also, ensuring a gender balance between counsellors at each VCT site should improve the acceptability of the services for both women and men.

The literature confirmed that stigma, religion and fear of rejection in Yemen are preventing FSW and MSM from benefiting from the VCT services. Integration of VCT services into the existing health services such as STI clinics and using the PITC approach should be considered in settings like Yemen. Targeted awareness-raising campaigns about VCT are important for improving utilization of services by populations at higher risk [61]. In Yemen, awareness campaigns targeting different stakeholders in the community such as HCP, policemen, religious leaders, FSW and MSM might help to overcome (at least partially) stigma and to improve the health seeking behaviours of FSW and MSM.

Economic factors

The data reveal that FSW and MSM who have been tested in Yemen are largely from the lower socioeconomic levels [13]. Nevertheless, low income is considered to be an important obstacle preventing FSW and MSM from accessing and utilizing VCT services in greater numbers mainly due to high transport costs. Tailoring services to be in easy reach of FSW and MSM may increase their access. Outreach activities through NGOs using methods such as mobile VCT showed success in many countries in the region in reaching FSW and MSM [58].

A survey of FSW and MSM to identify the most commonly used private for profit health facilities utilized by FSW and MSM can guide scale up of VCT to these facilities. This can be done through training of HCP in these private health facilities to provide pre and post-test counseling and by reaching agreement between the private health facilities and the MOPHP to provide VCT at a low price.

Health services factors

Limited distribution of VCT services to public health facilities and NGOs that are only open 6 hours per day and not at weekends hinders access and utilization by FSW and MSM. VCT services are established in some NGOs, but their locations are out of reach of many FSW and MSM. Most of these NGOs have no outreach activities to offer VCT services in the community. FSW and MSM may not know of the

availability of VCT services in these NGOs and are less likely access them.

Absence of VCT may affect the awareness of HCP of the need to refer symptomatic patients. Also, inadequate information about existing VCT services among HCP in Yemen has resulted in poor referral of suspected HIV patients [20]. Motivation of HCP (who are not counsellors but are working in the same facilities that provide VCT services) by involving them in different HIV and AIDS training and workshops should improve referral of patients and people suspected of being at higher risk for VCT.

Integration of VCT services and PITC is very important in countries like Yemen where there is high stigma and discrimination towards FSW and MSM [4]. Introduction of VCT services within STI and TB clinics and offering the services to symptomatic patients or populations at higher risk will help to improve access and utilization of VCT and increase their access to prevention, treatment and care services. But the hurdles are considerable and unfortunately progress is likely to be slow.

Conclusion

The client-initiated approach is the main model used for providing VCT services in Yemen. This approach is not ideal for improving access and utilization of VCT by populations at higher risk. There is unequal distribution of VCT services and services are not yet available in 13 of the 21 governorates. Although VCT was introduced in 2007, most PLHIV learned of their HIV status not through VCT but through the mandatory testing. As a result, there is low utilization of VCT services by both the general population and FSW and MSM in Yemen

Various factors influence access and utilization of VCT for FSW and MSM in Yemen. Young single males are the most likely group to access and utilize VCT and illiterate clients are least likely to access VCT. FSW and MSM are criminalized by the law and this is a barrier that prevents them from accessing VCT services. They are also highly stigmatized in society and have limited financial resources needed to access VCT.

Different interventions were found to be successful and used in countries that have similar HIV epidemics to Yemen. Interventions which were shown to increase access and utilization of VCT for FSW and MSM include PITC, mobile VCT, media campaigns, web-based interventions, peer education programmes and the involvement of the private sector.

Recommendations

The following recommendations are based on the findings of this study which may help to improve access to VCT services for FSW and MSM in Yemen.

Recommendations for policy makers and stakeholders

Involve stakeholders including the Ministry of Human Rights, the Ministry of Interior, the Ministry of Endowment, FSW and MSM to be partners in the national strategic framework for control and prevention of HIV and AIDS. These partners should co-operate in designing and implementing strategies/interventions that are going to specifically benefit FSW and MSM. The NAP should lead the coordination in collaboration with the NPC to create a more enabling environment to protect these groups and to improve their access to VCT services.

Recommendations for NAP/MOPHP

Scale up VCT services to include governorates that have no VCT by involving the private sector (profit/non-profit). This can be achieved by developing a memorandum of understanding between the private sector providers and the MOPHP to provide VCT at a low price. On the other hand, MOPHP should help to build the capacity of HCP in the private sector and to encourage them to conduct outreach VCT services based on population size estimates and to use outreach methods designed to reach marginalized groups.

Support and expand implementation of peer education programmes among FSW and MSM, with the assistance of NGO partners in order to better assist members of these groups and to encourage them to access VCT services.

Motivate HCP by involving them in HIV and AIDS related training, workshops and awareness-raising campaigns. The aim should be to help providers to work more closely with FSW and MSM and to improve the referral of symptomatic patients and FSW and MSM for VCT. This can be done through the NAP in collaboration with the health facilities.

Integrate VCT services within STI and TB clinics and enhance provider-initiated approach with informed consent to improve utilization of VCT by FSW and MSM.

Include different approaches for VCT such as PITC, mobile VCT, web-based interventions and awareness campaigns in the VCT training guidelines and training curriculum and to train the service providers on these new approaches. This will help to improve access and utilization of services for FSW and MSM in Yemen.

Adapt awareness-raising messages about VCT services to specific audiences including people of low literacy, FSW and MSM and provide them through different communication channels such as outreach workers, targeted print and perhaps TV and radio (although social taboos will make the latter difficult).

Deliver messages through the internet using websites that are popular with youth and populations at higher risk and broadcast video about VCT services for free to improve access of services for populations at higher risk especially MSM.

Recommendations for NAP for further research

Conduct further studies to identify the factors affecting access to VCT services for MSM, FSW and their clients in Yemen.

Carry out needs assessment and surveys to understand the health seeking behaviours of FSW and MSM to know their needs and to improve their health seeking behaviours and access to VCT services.

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