HIV Programs in Iran (Persia), Iraq and Saudi Arabia: A Brief Review of Current Evidence in West and Southwest Asia

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Abstract

Background: In Western and Southwest Asia, literature is not documented on human immunodeficiency virus (HIV) programs in Iran, Iraq and Saudi Arabia. The present study is the first brief review that describes HIV programs in these three neighboring countries.

Methods: Data regarding the evidence of HIV programs were gathered through a systematic literature searching. English publications were retrieved through searching online scientific databases. Grey literature was also searched online. The review was based on the studies related to the last decade.

Findings: Systematic searching resulted in retrieving 21,948 studies but only 21 studies were relevant to the study aim. The review findings indicated that Iran has provided a nationwide sero-surveillance data system and has identified its key populations. Detecting HIV prevalence has been limited to case-finding in Iraq and Saudi Arabia. However, strategic plans for HIV have been provided in the three countries. HIV education, knowledge and support have been provided but still needs consideration in the three countries especially in Iraq. The low coverage of antiretroviral therapy (ART) has remained a critical gap in the provision of comprehensive HIV programs in these three countries. This issue has been followed by the lack of opiate substitution therapies for drug dependents and injecting drug users in Iraq and Saudi Arabia. Condom promotion and voluntary HIV counselling and testing have been provided for at-risk groups in the three countries but need more nationwide coverages. However, needle and syringe programs (NSPs) have been only provided in Iran.

Conclusion: The review concluded that the provision of effective HIV programs should address training human resources and infrastructural development. This issue should be facilitated by international collaborations and governmental supports.

Keywords: HIV; Iran; Iraq; Saudi Arabia; Persian Gulf

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Introduction

Globally, human immunodeficiency virus (HIV) is a serious health concern. For example, HIV epidemic is in its fourth decade in Western and Southwest Asia. However, the provision of comprehensive HIV programs has been neglected in these two regions. Iran, Iraq and Saudi Arabia (Figure 1) are three neighboring countries in Western and Southwest Asia that have reported HIV problem in recent years. Because of dense populations, HIV may cause more epidemic in Iran, Iraq and Saudi Arabia. Although the diagnosis of HIV problem has been increased in these countries, many people have remained unaware of their HIV status. Therefore, they present late for treatment.

It should be noted that Iran is a highly-educated country that has conducted many research studies on the prevalence of HIV problem in the past three decades. For example, a survey of female sex workers (FSW) in Tehran found that five percent of them were HIV-infected. The positive HIV status was associated with the age of less than 25 years. In Saudi Arabia, some studies have been conducted on HIV problem but they are not the representative of HIV problem across the country. In contrast, Iraq has conducted little research on HIV problem because of political instability since the first Persian Gulf war. Despite all efforts, the current published research studies from the three countries do not provide a profile of the provision of HIV programs. To partly address this critical gap in literature, the current brief study aimed to review the provision of HIV programs in the last decade in these three countries in order to inform health policy makers and researchers.

Methods

Data regarding the evidence of HIV programs were gathered through a systematic literature search. The review had a particular emphasis on at-risk groups. A generic search of “HIV” in the region was performed in the below websites using MeSH/Emtree and text terms.

The review had a particular emphasis on:
1. HIV prevalence in the latest national reports
2. The provision and availability of strategic plans for HIV problem
3. HIV education, knowledge and support for at-risk groups
4. Antiretroviral therapy (ART) for HIV-infected patients
5. Drug treatment for illicit drug users
6. Condom promotion for at-risk groups
7. Voluntary counselling and testing (VCT)
8. Needle and syringe programs (NSPs) for drug injectors

English publications published between 2004 and 2015 (i.e. last decade) were systematically searched online. The last search was completed in the last day of October 2015. This included: Web of Sciences, Medline, EMBASE, PubMed citation indexes, CINHAL, EMRO and Google Scholar.

Additionally, grey literature was searched over the same period of time. This included: the latest global AIDS response progress reports, the global state of harm reduction, and the regional reports of the World Health Organization (WHO).

Two senior HIV researchers did the review process on the mentioned websites. An independent researcher repeated the searching on the same websites to check the accuracy of the identified studies. After the search was completed, relevant studies were identified by the three researchers. Researchers selected only original studies and reports. Duplicates such as editorials were excluded from the final searching.

Results

Systematic searching resulted in finding 21948 articles and reports. Overall, 21 relevant studies were identified with regard to national HIV programs. Most of the studies were related to PubMed-indexed English papers and the reports of the ministries of health published between 2012 and 2015. There was one report related to the
three countries. Seven original research papers and reports were related to Iran. Eight original research papers and reports were related to Iraq and five original research papers and reports were related to Saudi Arabia.

**Iran in Western Asia**

Iran is a vast and ancient country with Indo-European roots. The country is the land of the Persian Empire and civilization. Most of the people in the country are Persian. Currently, the country has a population of 79 million with almost three million Iraqi and Afghan refugees.9

**An overview of HIV prevalence in Iran**

The first HIV-infected patient in Iran was found in 1986. Based on the sero-surveillance data system (2014), 55250 men and 23040 women were infected with HIV. Most of them were people who inject drugs (PWID) and FSW. There were 200000 PWID who fuel HIV epidemic. The rate of HIV prevalence among PWID was 15.07%. Moreover, FSW are a new high risk group. Among FSW, the incidence rate of HIV is estimated to be about 180 in 100000. Main routes of transmission are drug injection and sex work in the community.10

**Iraq in Western Asia**

Iraq is an ancient Arabic and Kurdish speaking country which has the Persian and Mesopotamian civilizations such as Ctesiphon Arch of the Parthian Persians. The population of Iraq has increased by 2.9% and is 35 million recently.11

**An overview of HIV prevalence in Iraq**

There is a critical paucity of HIV studies in Iraq.12 The first HIV-positive case was found among haemophilic patients in 1986. There is no nationwide sero-surveillance data system related to HIV because of political instability since the first Persian Gulf War. This is also because many Iraqi people have left the country as refugees to Iran, Jordan or the US. Nonetheless, the only sero-survey of more than 18990 Iraqi refugees in Jordan found no HIV-positive patient between June 2007 and September 2009.13

Based on case-finding, 615 HIV-infected patients were found between 1986 and 2011. Overall, 309 of them (50%) were Iraqi citizens’ mainly haemophilic men; 17% of them were infected by having heterosexual relationship and five percent of them were infected by HIV-infected mothers. The Iraqi ministry of health has recently reported that the total numbers of mandatory and voluntary HIV tests were 1306651 in 2011 and 20 of them were positive (Figure 2). This number is only limited to some Iraqi citizens and foreigners. Overall, 131 HIV-positive patients were found based on case-finding between March 2003 and December 2011.5

![Figure 2. HIV positive patients in Iraq (2011)](http://ahj.kmu.ac.ir)

VCT: Voluntary counselling and testing; TB: Tuberculosis

Reference: Ministry of health in Iraq (2012)
Saudi Arabia in Southwest Asia

Saudi Arabia is the origin of Islam and some Arabs on the southern border of the Persian Gulf region. The population of Saudi Arabia is 20 million of citizens, with nine million expatriates mainly Pakistani workers.14

An overview of HIV prevalence in Saudi Arabia

The first HIV-positive patient was found in 1984. HIV among Saudi people has an incidence of approximately 1.5 newly-found patients per 100000 population each year. Between 1984 and 2013, a total number of 20539 HIV-positive patients were found. Overall, 5890 of them (28.7%) were Saudi citizens. These numbers are based on case-finding (Table 1).15

Overall, 313352 Saudi people were tested for HIV via pre-marital testing in 2013 which showed 14% increase among new patients mainly expatriate workers. Most of them were sexually-transmitted infected patients.15 HIV studies are emerging.16 For example; a cohort study of 620 HIV-1 infected patients found that the main route of HIV-1 transmission was heterosexual relationship (55%).17 The only survey of 3,994 people at the hospitals of the ministry of health suggested that the prevalence of sexually transmitted infections (STI) was 6.2%. Illicit drug use, drug injection and extramarital sex were associated with prevalence of STI.18 Furthermore, two studies found that drug injection was associated with engagement in high risk behaviors especially sexual behaviors.18

Strategic plans for HIV

Three strategic plans have been implemented in Iran since 1988. The fourth strategic plan (2015-2019) has been recently provided.20 In Iraq, the first strategic plan was initiated in the late 1980s. In 2005, the National AIDS Program (NAP) provided the first strategic plan after war.5 In Saudi Arabia, the ministry of health and the NAP designed a strategic plan in 2011 for 2013-2017.15

HIV education, knowledge and support

HIV education has been provided for PWID, FSW, illicit drug users and prisoners at drug treatment and harm reduction centers in Iran;10,21 Peer support programs such as positive peers’ clubs are among the commonest HIV support services for HIV-infected people. Twenty positive peers’ clubs have been established in the country. These clubs provide some support for people who live with HIV (PLHIV). Furthermore, the Persian Welfare Organization has provided some financial supports for Persian PLHIV. However, these programs need an extensive coverage in the country.10

HIV education is limited in Iraq and HIV knowledge needs more consideration. For example, the only survey of 22997 Iraqi women aged 15-24 years found that only 49.9% of participants had heard of HIV; 60.5% of them did not know that HIV can be transmitted by blood transmission.22 However, recent studies suggest that HIV knowledge is slowly increasing by mass-media.23-25 Furthermore, the government has provided monthly salaries and free accommodation for some PLHIV.5

In Saudi Arabia, NAP has supported a 24-hour hotline call-center system for HIV. Some civil societies and PLHIV-support networks have contributed to the provision of support via the AIDS Charity Association. Some peer support groups such as “Al-Hosen” work on supporting some PLHIV. The Jeddah-based Saudi Charity Association for AIDS patients has provided financial support for some PLHIV.6,15

ART

There are few studies of ART in the three countries. In Iran, the only report indicates that free ART has been provided. The report suggests that 4,468 PLHIV were on ART in September 2013. The rate of treatment retention was more than 85% among HIV-infected patients between September 2011 and 2013.10

Table 1. HIV prevalence among some at-risk groups in 2012

| Group         | Number tested | Number positive | Prevalence (%) |
|---------------|---------------|-----------------|----------------|
| Women/pregnancy | 2400          | 3               | 0.10           |
| Patients/TB   | 1200          | 26              | 2.16           |
| Patients/STI  | 1200          | 20              | 1.67           |
| Prisoners     | 1200          | 16              | 1.16           |

Reference: Ministry of health in Saudi Arabia (2014)
STI: Sexually transmitted infection; TB: Tuberculosis
In Iraq, the only report shows that free ART has been provided. Currently, only 59 HIV patients are in treatment.\textsuperscript{5} In Saudi Arabia, the only report suggests that 2388 PLHIV were on free ART in 2013. Overall, 530 PLHIV were on ART in 2012 and all completed twelve months of ART in 2013.\textsuperscript{15} However, the only survey at 997 HIV/AIDS centers in 2001-2013 found that ART needed to have more nationwide coverage and some patients come late for treatment.\textsuperscript{26}

**Drug treatment**

Methadone maintenance treatment (MMT) and buprenorphine maintenance treatment (BMT) have been provided for men and women at more than at 3373 drug treatment centers in Iran. By August 2013, MMT was provided to more than 500000 illicit drug users including PWID.\textsuperscript{27} In contrast, MMT and BMT have not been provided in Iraq and Saudi Arabia.\textsuperscript{5,19}

**Condom promotion, VCT and NSPs**

In Iran, free condoms have been provided for illicit drug users, PWID, FSW and prisoners at harm reduction centers and prisons. Three research studies show that VCT and NSPs have been provided across the country.\textsuperscript{28-32} The latest report suggests that there were 682 registered centers in the country by August 2013. These centers distributed 12626021 free needles and syringes among PWID in 2013. Mandatory HIV testing is limited to pre-marital testing, blood and organ donors.\textsuperscript{10}

Additionally, a review indicated that the Persian Prison Organization and the Persian State Welfare Organization have contributed to the provision of HIV prevention and harm reduction programs in the country. The review also showed that non-governmental organizations (NGOs) such as Rebirth Society (i.e. the largest NGO in Iran and Western Asia) are active in the provision of prevention and harm reduction programs.\textsuperscript{27}

In Iraq, the only report shows that condom distribution has been implemented for some at-risk groups. A few people accept voluntary HIV testing and VCT because of stigma. HIV testing is mandatory for travellers, blood donors, prisoners, tuberculosis patients and marriage. Almost 100 centers provide free HIV testing and take HIV tests from almost 1.2 million people per year. The number of VCT centers has increased since 2004 (Figure 3). The country is updating NSPs but the role of NGOs is not considerable in the provision of HIV programs.\textsuperscript{5}

**Discussion**

There is a paucity of well-documented reports of HIV programs in Western and Southwest Asia. The current study is the first review of HIV programs in Iran, Iraq and Saudi Arabia. The review findings indicated that Iran has provided a nationwide HIV sero-surveillance data system and has identified its key populations.\textsuperscript{31-33} However, Iraq and Saudi Arabia primarily need to address these two important issues. Case-finding among some sub-population groups in Iraq and Saudi Arabia may not be a reliable method to assess the actual prevalence of HIV in the community.

The provision of strategic plans for HIV has been a great step toward targeting HIV problem in the three countries.\textsuperscript{5,10,15} However, like many other countries, stigma and some cultural factors in the three countries are likely to act as barriers to addressing the defined aims in the strategic plans for HIV. Therefore, educational centers, medical centers and mass-media should
contribute to eliminating HIV stigma in order to implement the strategic plans by the governments.

There are evidences in the three countries that heterosexual relationship and/or drug injection fuel HIV epidemic in the community. An investment in HIV education, knowledge and support has been implemented in the three countries but is not primarily sufficient. A strong collaboration is needed among governments, religious leaders and public health sectors to develop HIV education, knowledge and support especially for at-risk groups. The role of mass-media in the provision of HIV education, knowledge and support is rigorously emphasized. Special groups of peers, social workers and psychologists are needed to be trained to provide such services based on the latest WHO guidelines. Like other countries in the world, part of this issue should be able to address cultural values.

Despite the presence of HIV among some groups in the community, ART coverage still needs consideration in the three countries. The coverage of ART is a critical gap in the provision of effective HIV responses which should be developed by governmental supports. Mass-media, drug treatment centers and harm reduction centers are needed to contribute to informing people about the necessity of ART and the available ART centers.

ART entry and retention are likely to be hampered by some barriers such as the lack of transport services, financial problems, poor social acceptance, unemployment and poor family support. Policy makers should invest in research on potential barriers related to this issue in each country. Financial and governmental supports are needed to address potential barriers and promote ART coverage and retention. In addition, MMT and BMT should be implemented simultaneously for illicit drug users and PWID on ART in Iraq and Saudi Arabia based on international treatment guidelines.

HIV may result in serious health problems if not treated. Therefore, prevention and harm reduction programs should be widely provided at a population level in each country especially in Iraq. The current coverages of such programs in Iran and Saudi Arabia are considerable but need further development.

**Conclusion**

To sum up, the future direction of HIV programs should address long-term investment in training human resources, eliminating cultural barriers to comprehensive HIV responses and infrastructural development. This issue should be addressed by international collaborations and governmental supports. It should be noted that the current study has one limitation. Because of a paucity of documented reports and papers on HIV programs in the three countries, conducting a meta-analysis was impossible. Therefore, the study was limited to conducting a brief review of current evidence. Hopefully publishing more HIV reports and papers in these countries will cover this critical gap in literature. Conducting further reviews is suggested.

**Conflict of Interests**

The Authors have no conflict of interest.

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برنامه‌های HIV در ایران (بریشیا)، عراق و عربستان: مرور گوتاهی از شواهد موجود در غرب و جنوب غربی آسیا

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مقاله پژوهشی

چکیده

مقدمه: در غرب و جنوب غربی آسیا، ادبیات پژوهش درباره برنامه‌های HIV سوئدی مستند شده نیست. پژوهش‌های آموزشی و درمانی در این سیر کشور در یک دهه گذشته پرداخت.

روش‌ها: داده‌های مربوط به برنامه‌های HIV در ایران، عراق و عربستان با استفاده از روش‌های مورفری و سیستماتیک جمع‌آوری گردید. پژوهش‌های منتشر شده به زبان انگلیسی، به وسیله جستجو در پایگاه‌های علمی آنلاین به دست آمده. علاوه بر این، داده‌های مربوط به ادیبات خاکستری، با استفاده از گنجینه‌های سازمان‌های پایگاه‌های اطلاعاتی علمی، گردآوری شد.

یافته‌ها: جستجوی منابع منجر به یافتگی 79 پژوهش شد که کننده 21 مورد آن به هدف مطالعه ارتباط داشت. یافته‌ها تشریح شده که می‌تواند ایجاد کند. تغییراتی که در این نظریه ایجاد می‌کند. این نظریه شامل این موارد است: 1- نتایج‌گیری: نتایج پژوهش حاضر تأکید دارد که فراهم‌نکردن برنامه‌های مؤثر می‌تواند در برداشتنی آمار مشابه و وابستگی به مواد باشد. 2- این امر می‌تواند در تولید و توزیع کاناتا، مشاوره و آزمایش دستیابی به مواد باشد. 3- این امر به وسیله همکاری‌های بین‌المللی و حمایت دولتی تسهیل می‌گردد.

واژگان کلیدی: ایران، عراق، عربستان سعودی، خلیج فارس

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