

HIV risk behaviours among injecting drug users in Vietnam: A review

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Abstract: Background: There is high prevalence of HIV among Injecting Drug Users (IDUs) in Vietnam with a national level prevalence just under 20%. Both drug and sex related risk behaviors are widespread among IDUs. The objective of this review is to analyze HIV risk behaviors and identify the epidemiologic implications. Methods: Major databases were searched during November-December, 2011. Finally, 55 peer-reviewed articles were identified and reviewed to focus on risk behaviors of IDUs, Female Sex Workers (FSW) and drug policy and harm reduction program related issues. Results: Young injectors are involved in risk behaviors that include frequent sexual connections with FSWs. Our review found that young IDU subgroups (≤ 30 years) are engaged in high risk behaviors and have limited access to harm reduction services. Sexual risk factors associated with drug injecting FSWs may become the catalyst for a future heterosexual transmission if the prevalence rises further. Future research should focus on young injectors to investigate the structure and characteristics of networks to help guide harm reduction programs, including IDU subgroups. Conclusion: Vietnam has still a window of opportunity to learn from the experience of neighboring countries and, after modification, to incorporate preventative services suited to the needs of young injectors, into existing programs.

Keywords: HIV, AIDS, Vietnam, Injecting Drug User, Risk Behaviors

1. Introduction

There is a high prevalence of HIV among Injecting Drug Users (IDUs) in Vietnam, with a national level prevalence, according to Integrated Biological and Behavioral Surveillance (IBBS) survey in 2009, of just under 20% [1]. IDUs have remained as the predominant risk group driving the HIV epidemic from its start [1-3].

Since HIV emerged in Vietnam in 1990, the epidemic has been characterized by sub-epidemics, primarily among IDUs, in most of the provinces [4, 5]. The explosive spread of HIV infection among IDUs was first recognized in 1993 especially in southern Vietnam [6]. In that year alone 945 cases were reported, of which 87% sero-positive persons were IDUs [7]. During the period of peak HIV prevalence among IDUs, a highly variable rate across regions ranging between zero and 89.4% was documented [8]. Also, the

prevalence rate has been found to vary amongst IDUs in community settings or treatment centres [9], subgroups such as older [10], younger and new users [11-13]. There is also a high prevalence among young ethnic IDUs in the border provinces (south China and north Vietnam) [14]. Although, the surveillance data show a slight reduction in overall HIV prevalence among IDUs from 20.27% (2008) to 18.44% (2009), variation exists across provinces [1]. Recent IBBS data [15] along with other research [11, 13, 16] show variability across the country with high HIV prevalence in some provinces located in the north (Hai Phong, Bac Ninh, Nghe An), northwest (Dien Bien, Yen Bai) and northeast (Quan ninh) of the country. Evidence suggests that an overall low prevalence in recent times neither assures stability nor confirms absence of risk behaviors among IDUs as a whole [17], rather, it may shadow the growth of localized epidemics in many pockets

especially in the high prevalent provinces [1].

Historically, 'shooting galleries', typically a common place for congregation of IDUs, can be found in clandestine locations that often provide opportunities for buying, renting, or borrowing needles/syringes and other injection items [18, 19]. Injecting in shooting galleries and sharing common water pots have been found to be independent predictors for HIV infection among IDUs in Vietnam [20].

In addition to the above drug related risk practices, around 50% of IDUs in Vietnam visit Female Sex Workers (FSWs) [11, 21]. Research shows that in different instances around 2-7% of IDUs either provided money or supplied drugs to FSWs (within the past 6 months) in exchange for sex [22]. Moreover, among the FSWs, a high proportion also takes drugs and, of concern, around 15-20% of them are engaged in injecting and sharing practices [23-28].

This background highlights an existing epidemic situation relating high risk behaviors of IDUs as well as intersection with FSWs, which together influence the current HIV prevalence among IDUs. The existing research literature, over time, describes the history of Vietnam's HIV epidemic showing the prevalence among different risk groups, but little is reported about the pattern and extent of risk behaviors among IDUs connecting with a risk of greater heterosexual transmission. It is important to review the available literature to explore findings on IDU risk behaviors, in order to focus on major issues which carry implications that might exacerbate the current epidemic. Once such issues are well identified, preventative efforts can be better targeted and service provision rendered effectively and efficiently. This paper aims to review the relevant published literature to analyze the risk behaviors among IDUs and identify the implications for the current epidemic.

2. Methods

This review commenced in August, 2011, as part of a broader research initiative. The research team includes members from the Vietnam Authority of HIV/AIDS Control (VAAC) and Griffith University (GU). GU library databases including PubMed, ProQuest, Science Direct were used to conduct the literature search during November-December, 2011. A combination of key-words such as 'HIV/AIDS in Vietnam', 'IDU and Vietnam', 'Drug Use and HIV Risk in Vietnam' along with the preferred time limit of '1995 onwards' were used to search the literature. Often the technical procedures of a systematic search such as strict selection criteria may mean that articles published with different titles are missed, thereby generating limited information. Such 'excluded' literature may provide crucial insights in the areas of interest. This is common in situations with limited availability of peer reviewed literature. Because of this factor, both a manual search and an exploration of relevant references were conducted to include a range of literature. After simultaneous searching, both peer-reviewed and non-peer reviewed documents were identified and reviewed. Peer reviewed articles were selected based upon

reviewing risk behaviors among IDUs and mixing patterns with FSWs, whereas non-peer reviewed national and international documents provided contextual understanding of HIV, drug use problems and Harm Reduction (HR) programs in Vietnam.

Since the present review theme encompasses a range of related areas, the selected peer reviewed articles focus on (1) IDUs, (2) FSWs, and (3) drug and HR policies. After reviewing abstracts a total of 55 peer reviewed articles were identified, with 40 on IDU risk behaviors; 10 on FSWs to highlight patterns of sexual mixing among FSWs; and 5 on policy and HR program development. Furthermore, 10 non-peer reviewed documents were identified including surveillance results, country progress report and conference papers. These documents were used to contextualize the findings in terms of HR programs among IDUs in Vietnam. This review mainly concentrates on the 40 selected articles dealing with IDU HIV risk behaviors.

Of the 40 peer reviewed articles, 32 are based on original research and the remaining 8 deal with national level epidemiological data (surveillance, case reports). Out of the 32 research articles, 22 and 7 represent northern and southern Vietnam respectively, while 3 articles represent both. The majority (30) of the articles were published during second decade of the HIV epidemic (2001-2010) with only 10 published during the first five years (1995-2000). All the selected research articles deal with risk behaviors such as IDUs only (26) or combine IDUs, FSWs and other groups (9) or HIV infected IDUs (4), but only one represents risk behaviors among young people in general. The majority of the articles (38) are based on cross-sectional research designs, apart from one case-control and one cohort study. Most of the articles (30) present quantitative analyses and 6 present qualitative, while the remaining 4 use mixed methods. During the review process, articles which provided HIV prevalence data along with risk behaviors (nearly one-third) were prioritized.

3. Results

The review results relating HIV risk behaviors and other issues were classified into the following categories: (i) demographic, (ii) drug, (iii) sex, and (iv) overlapping drug and sex related issues.

3.1. Demographic Issues

The evidence indicates that IDUs in Vietnam are predominantly male (80-90%) and the majority are single (60-70%). The mean age, according to the literature after 2000, shows a majority of IDUs below 30 years, ranging from 20-29 years.

The heroin shipment route which connects selected northern provinces with the 'Golden Triangle' creates an ample supply of heroin at a low cost and with easy access [29], thus facilitating the growth of the twin epidemics of heroin injection and HIV [30]. In Vietnam, drug users older than 20 years (OR=2.76; 95%CI: 1.80-4.24) and using

drugs for more than 5 years (OR=2.06; 95%CI: 1.32-3.21) are predictors of the move to injectable drugs [11]. Consequently, injecting heroin has become the preferred drug among IDUs in Vietnam [31].

Moreover, the issue of speed of transition from non-injecting to injecting drug use among young IDUs is striking. Evidence shows that 57% of a sample of IDUs had switched to injecting practices and the average time for transition was just over one year (14 months) [12]. In other research the transition period was even less than one year [9, 32]. In Karachi, Pakistan, as a case study in recent modelling, it is projected that there will be a 50-65% rise in HIV infection over a period of 5 years, due to an 8-12% shift from non-injecting to injecting drug [33].

Injecting in places other than homes magnifies the level of risk behaviors in drug acquisition. There is a higher likelihood of needle sharing for IDUs who inject either at a shooting gallery (OR= 11.94; 95%CI: 4.07-34.99) or in the streets/ (public places) (OR=10.52; 95%CI: 2.86-38.78) in comparison to those who inject at other places, such as private homes, or friend's houses [20]. Among IDUs who are already infected with HIV, the age range 25-29 years (OR=2.1; 95%CI: 1.59-2.68) is found to be predictive for sharing needles and syringes in the previous month [16].

3.2. Drug Use Issues

Sharing needles/syringes and other injection equipment is the most frequent drug related risk behavior which puts IDUs at risk of virus transmission [34]. In Vietnam, needle/syringe sharing has been widespread in the shooting galleries which were operated by the drug dealers and research has confirmed that sharing in these places is a primary risk behavior [35, 36]. At the beginning of the epidemic, for example, more than 80% of IDUs shared syringes with unknown IDU participants at their last injecting occasion at a shooting gallery [35]. More than one-third (37%) of IDUs had a life time practice of sharing of needles and syringes; however, the proportion drops to 14% when estimating sharing within the last six months [37]. As the epidemic progressed, being injected by a drug dealer, or someone else, became one of the predictors for HIV infection [20] and subsequently led to high risk sexual behaviors as well (OR=2.28; 95%CI:1.16-4.51) [38].

Sharing as well as reusing of a previously used needle/syringe (direct sharing), over the period, has decreased among IDUs due to an improved level of risk awareness. A case-control research study among IDUs in Bac Ninh, a northern province, found that 13.3% of subjects had directly reused someone else's syringe at least once within the last six months [39]. In Thanh Hoa, 15% IDUs reported sharing of needles/syringes during the last month [40]. The prevalence of other blood-borne viral infections supplies evidence indicating continued sharing and engagement with partners who belong to other risk groups [39, 41, 42]. Research confirms that IDUs who share needles are more likely to be infected with HIV than those who do not share needles [20, 38].

Although there is evidence of decreased sharing of needles/syringes, there is a lack of research regarding indirect modes of transmission (indirect sharing) [43]. Evidence indicates that the majority of the subjects (63.8%) shared indirectly, which includes using common drug containers, rinse water and cotton-wool, thus serving inadvertently as a transmission link [39]. In Lang Son, another northern province participating in a cross-border HIV prevention program, nearly one-third of the respondents in an evaluation reported sharing an injection item during the last 6 months [22]. IDUs who are involved in social injecting by pooling money in groups to buy drugs are often involved in indirect sharing behaviors [16, 41]. Alarmingly, people who are infected with HIV (PLHIV) appear to continue their drug related risk behaviors [44-46].

The sharing practice is deeply rooted within the IDU social and cultural context [47, 48]. In addition, other frequently cited reasons for sharing include limited resources, lack of clean needles/syringes and fears of arrest by law personnel, all of which reinforce reusing and sharing equipment [12, 44, 46]. One study identifies cross border factors as reasons for sharing among young ethnic IDUs in border areas (south China and north Vietnam) [22, 49]. About two-thirds (64%) of the IDUs indicated that injecting at a shooting gallery was the primary reason for sharing needles [37].

3.3. Sex Work Issues

IDUs provide an effective epidemiologic bridge for the generalized epidemic through unsafe sexual practices with their regular partners (wives) and non-regular partners (FSWs) [23]. Around 58% of male IDUs had more than 5 lifetime sex partners and more than 2 sex partners in the last 12 months [50]. Moreover, such sexual connection spans across drug use and sex work networks including casual partners [12] and often newer and younger IDU subgroups [11, 26]. Furthermore, sexual risk behaviors are prevalent among HIV sero-positive IDUs [13, 51] and often shows recent involvement, as in the previous week [45].

As a common belief, IDUs perceive the risk of virus transmission is less likely through sexual practice than sharing injection items [26] and hence they are less likely to adopt safe sex than safe injection practices [37, 48]. As a result, non-condom sex with FSWs is widespread [52, 53]. Among the IDUs in HCM city who reported sex with FSWs within the last 4 weeks (15%), only one-half (50%) used condoms [37]. It is evident that around 15% of IDUs in Bac Ninh, a northern province, were inconsistent in their use of condoms and another 15% did not like to use them while having sex with FSWs [50]. In other instances, self-reported condom use among IDUs reached almost a quarter (25%) in Hai Phong province when having sex with FSWs, but dropped below 10% when having sex with their regular partners [11]. Consequently, STI prevalence has increased among IDUs [50], and FSWs [54, 55] their clients [56] which, in turn, facilitates transmission of HIV infection [50]. As a result of continuous unprotected sexual

behaviors, a gradual increase of HIV infection among pregnant women in selected provinces has already been recorded [57].

Relationship and communication dynamics between IDUs and their sex partners is important as it shapes their sexual behaviors [53, 58]. Although the primary female partners of male IDUs may wish to use condoms, they face major barriers such as lack of power, fearing to ask, fear of breaking trust and often partners not allowing them to use condoms [51, 52].

3.4. Overlapping Drug Use and Sex Work Issues

Injecting, together with unprotected sexual practices, is an already established combination among IDUs in Vietnam [8]. Sharing needles (OR=2.43; 95%CI: 1.08-5.50) and sharing any injection equipment (OR=1.88; 95%CI: 1.01-3.50) in the past six months is also associated with risky sexual practice over the past year [38]. For young IDUs, for instance, who sometimes shared needles (22.5%), more than half (55.6%) never used condoms during sex with their partners [13]. The situation with drug injecting young FSWs (less than 25 years) is even worse (OR=5.22; 95%CI: 2.10-12.97) and is independently associated with HIV sero-positivity in HCM city [28].

Consequently, injecting drug use is considered as a key issue affecting the rapid increase of HIV infection among FSWs [28, 59-61]. Having drug injecting partners (OR=10.0; 95%CI: 5.2-20) and having drug using clients (OR=2.5; 95%CI: 1-6) are predictors for injecting drugs among FSWs [27]. FSWs who inject drugs have a 7.8 times higher chance of getting HIV infection than those who do not inject drugs [43]. In addition, the rise of HIV infection among FSWs is significantly associated with risky sexual behaviors (frequency of sex acts, inconsistent use of condoms, multiple clients) [55, 62, 63]. In summary, because of frequent overlapping risk behaviors, the evidence supports the emergence of two epidemics which may substantially inhibit opportunities for HIV prevention in the future [64].

4. Discussion

This review of HIV risk behaviors and related issues has found a high rate of sharing practices since the beginning of the epidemic that dropped gradually with improvement in risk awareness knowledge among IDUs. However, the sharing practices, especially indirect modes of sharing continue and there are visible IDU subgroups, especially younger IDUs (under 30 years of age), who frequently engage in HIV risk behaviors. Evidence suggests that infrequent contact with HR staff impedes the accessibility of sterile needles/syringes for such young injectors and thus fails to promote risk reduction [65]. Similarly, new injectors are also younger (less than 30 years of age) [66] and tend to be more drug-dependent together with increased risk behaviors [12, 26, 38]. This review identifies that young drug users facilitated the recent spread of HIV infection

among IDUs and these factors must be addressed with an innovative HR project design approach.

Secondly, the chain of infection developed through drug and sex related contacts, indicates the development of an effective epidemiologic bridge to deliver HIV infection to sexual partners (SP) in non-high risk populations. Although the risk associated with SPs has been identified and included for prevention services on a limited scale [58], such coverage needs to be extended before the prevalence rises further. Epidemic models demonstrate a complex role of IDUs [67] and indicate that high rates of sexual behavior facilitate the risk of an injecting-driven HIV epidemic progressing towards a generalized epidemic [68, 69]. A strong link to exacerbate the current epidemic already exists [43, 70, 71] with young and new injectors in Hanoi, who are sexually active, having the potential to spread the disease to their SPs, in general FSWs, of whom around 20% are already infected [2, 24, 26, 27]. Innovative sexual health programs should be implemented covering young FSWs and IDU subgroups, before the rate of mixing reaches or crosses the threshold level that facilitates the growth of further heterosexual transmission.

The third major finding relates to the overlapping risk behaviors of drug-using women, especially injecting FSWs, which is another group to target for prevention. Drug using male partners and clients influence the drug use behavior of FSWs, which possibly explains the concurrent spread of HIV infection among male IDUs as well as FSWs [8, 27, 43]. Female IDUs may become potential catalysts when heterosexual transmission becomes more prevalent. This is not denying that HIV infection among non-injecting male drug users may be a result of engagement in sexual relationship with drug-using female partners.

Finally, another finding is the engagement in risk behaviors of persons who are already infected with the virus, regardless of whether they are drug injecting males or FSWs. A possible reason could be the ineffective implementation of community-based HIV testing services which failed to achieve the benefits of in-depth counselling among PLHIV [16, 72]. Therefore, the need for scaling up of HIV counselling among IDUs with improved care and quality services is also required [73].

This review supports the contention that the implementation of HR programs among IDUs in Vietnam has not been uniform [74] and this may account for continuing risk behaviors in different parts of the country. Recent change in policies (replacing the 'social-evil' approach with 'health-rights' paradigm) has broadened the scope of extensive HR programs, including subgroup members [75, 76]. Increased and easy access to sterile injection equipment helps to motivate young and new drug users to accept safer behaviors [40, 77]. Historical experience [78] as well as lessons from neighboring countries, such as Cambodia and Thailand, suggests that targeted interventions with high coverage is effective to slowdown the epidemic [79].

There are some limitations also which needs to be

reported. The review looks into HIV prevalence and risk behaviors only, while other issues related to HR programs and drug policies have not been analyzed in detail. Similarly, documents showing major risk behaviors among IDUs were prioritized, whereas the research articles concerning FSWs which were not selected (around 20) may contain risk behaviors among FSWs and other clients and may have reported implications for a future expanded epidemic. Another limitation of this review is that it includes peer reviewed articles published in English, accompanied by other national and international non-peer reviewed documents. Consensus has been made among research team members regarding identified English language literature to focus and analyze risk behaviors. Despite such limitations, however, the findings above are crucial and show a heightened need for HR program to prevent the further spread of the HIV infection.

Future research should primarily focus on IDUs who are under 30 years of age and new users who have been injecting for 3-5 years, to investigate network structure and characteristics. In addition, research should focus on the structural factors associated with rapid transition. Other potential areas of research include sexual risk analysis associated with multiple partners and disease transmission from risk groups both to the SPs (in general) and target clients [80]. Furthermore, research should assess the potential for a clinic based dual screening of STI and HIV to maximize HIV testing uptake among women in general [81] especially in high prevalent provinces [57].

5. Conclusion

Young injectors who have sexual links with FSWs in major cities highlight the most critical prevention need at this stage of the epidemic in order to avoid future heterosexual transmission in Vietnam. This sexual mixing of IDUs heightens the risk of heterosexual transmission which could further worsen the epidemic situation. Vietnam still has a window of opportunity to observe the experiences of neighboring countries and incorporate lessons into their prevention programs [82]. The major challenge lies in reaching the younger, newer subgroups of IDUs with innovative interventions tailored to their service need.

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