

Comparison of socio-demographic profiles of Bangladeshi and forcibly displaced Myanmar nationals HIV patients

Md Yasir Arafat¹, Anupam Barua², Md Farhad Hussain¹, Rafique us Saleheen², Sonia Afroz³, Md Ahidul Helal¹

¹Department of Medicine, Coxs Bazar Medical College Hospital, Coxs Bazar, Bangladesh

²Coxs Bazar Medical College Hospital, Coxs Bazar, Bangladesh

³Department of Microbiology, Coxs Bazar Medical College Hospital, Coxs Bazar, Bangladesh

Abstract

Introduction: The purpose of the study is to assess the differences between socio-demographic status of low-prevalence Bangladeshi (BD) and high-prevalence forcibly displaced Myanmar nationals (FDMN) HIV patients.

Material and methods: In this cross-sectional study, demographic details and behavioural patterns were analysed and compared.

Results: The highest number of patients was observed in adult females (54.4%) in FDMN and adult males (54%) in BD ($p = 0.006$). 97.74% FDMN and 59.70% BD had no income ($p = 0.000$). Most (94.5%) of the Bangladeshi males were migrants ($p = 0.000$). There was a significant difference in the mode of transmission between the 2 countries ($p = 0.000$). The highest mode of transmission among BD was heterogenous sexual exposure (70.8%) and among FDMN it was unsafe injections (49%). Mother-to-child transmission was significantly ($p = 0.00$) higher among FDMN (16.6%) than BD (8.3%). High-risk behaviours were higher among BD (65%) than FDMN (26%) ($p = 0.000$). Male clients of BD (35%) and female clients of FDMN (13%) had a higher likelihood of bad habits like smoking and alcohol abuse ($p = 0.01$). A statistically significant difference ($p = 0.002$ with 95% CI) was observed in the spousal status of the affected individual between the 2 countries. HIV status was found to be negative in spouses 35% and 64.5% of BD and FDMN, respectively. About 3% of FDMN people had broken/separated from their families due to HIV. About 61% of BD and 37% of FDMN adults had multiple sexual partners ($p = 0.001$).

Conclusions: This study compares the sociodemographic variability among HIV patients of BD and FDMN groups and measures these results against other similar studies.

HIV AIDS Rev 2022; 21, 3: 250-255

DOI: <https://doi.org/10.5114/hivar.2022.115181>

Key words: sociodemographic profile of HIV, HIV between Bangladeshi and FDMN people, HIV comparison between BD and FDMN.

Address for correspondence: Md Yasir Arafat, Junior Consultant, Department of Medicine, Coxs Bazar Medical College Hospital, Coxs Bazar, Bangladesh, phone: +8801979123479, e-mail: yasirarafatdr@yahoo.com

Article history:
Received: 14.05.2021
Revised: 18.06.2021
Accepted: 21.06.2021
Published: 28.03.2022

International Journal
of HIV-Related Problems

HIV & AIDS
Review

Introduction

Human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS) remains one of the world's most important public health challenges, especially for low- and middle-income countries. HIV-positive people now live prolonged and healthful lives due to the latest advances in antiretroviral therapy (ART). An estimated 23.3 million people have received HIV treatment in 2018. However, worldwide, only 62% of the 37.9 million people living with HIV in 2018 have come in for ART [1].

Bangladesh is a low HIV-prevalence country – less than 0.1% of the population is estimated to be HIV-positive. The country has different activities for HIV and its very low HIV-prevalence rate is partly due to prevention programs, focusing on men who have sex with men, female sex workers, and intravenous drug users. The government put into practice a lot of prevention efforts focusing on the above-mentioned high-risk populations and migrant peoples [2]. UNAIDS estimates the number of adults and children with HIV in Bangladesh to be around 14,000 (12,000-16,000) [3]. In Bangladesh the rates of new infections have increased steeply since 2010 [4].

There were approximately 240,000 people living with HIV in Myanmar (Burma) in 2018, as estimated by UNAIDS. Myanmar was the second-highest HIV prevalence country in Southeast Asia, comprising 0.8% of the population [5]. Myanmar is 1 of 35 countries that together make up 90% of new infections worldwide. In 2018, Myanmar reported 11,000 new infections (approximately 30 infections per day) [5].

According to the report by UNAIDS in 2018, there were an estimated 310,000 new HIV infections in the Asia-Pacific area, increasing the total number of people living with HIV/AIDS in the region to 5.9 million [5]. In 2018, approximately 200,000 people died from AIDS-related illnesses in this region, a 24% decrease in deaths since 2010, but in some countries – including Afghanistan, Bangladesh, Indonesia, Pakistan, and the Philippines – AIDS-related deaths have increased [5].

The contribution of discordant couples to the burden of HIV/AIDS is remarkable. Discordant couples are at high risk of HIV transmission and therefore are increasingly becoming a basis of HIV prevention research. Partners are classified as HIV-concordant when both partners are HIV infected. HIV discordance means a condition where one of the partners is HIV positive while the other is HIV negative [6].

To carry out the control program in a specific region, it is fundamental to understand the socio-demographic factors, degree of knowledge, and risk habits of the population. Due to the influx of a large number of forcefully displaced Myanmar nationals (FDMN) to Cox's Bazar, a large number of FDMN peoples with HIV were receiving ART from our centers. The data generated in the study can provide significant information to understand the socio-demographic differences between the high-prevalence people of FDMN and the low-prevalence people of Cox's Bazar and can help in the future to make particular guidelines at the national level.

Material and methods

In this cross-sectional (analytic) observational study, after obtaining informed written consent, a semi-structured questionnaire was filled in by attending doctors from children and adult HIV patients of 2 groups (BD and FDMN) attending ART centres at Cox's Bazar. Cox's Bazar medical college hospital is a 250-bed district secondary hospital where HIV patients have been treated since 2015. After the influx of FDMN into Bangladesh, a large number of patients received treatment at this centre. Demographic details and behavioural patterns of BD and FDMN were noted from January 2017 to January 2021. Written informed consent was obtained from each participant for the conduct and publication of this research study, and commitment of confidentiality was given. Study participants were free to refuse or withdraw from the research at any time. The aim and objectives of the study were described to each participant before the interview. HIV was suspected among persons who had typical symptoms of HIV (fever, lymphadenopathy, opportunistic infections, etc.) and confirmed by immunochromatographic methods. All the positive HIV cases attending at this centre, who agreed, were included in the study as the study population and divided into 2 groups according to nationality. Irregular ART receivers and patients who died from HIV during the study period were excluded. From January 2017 to January 2021, a total of 340 FDMN and 87 BD received ART at this centre. By non-probability sampling, we enrolled 72 (82.75%) BD and 259 (76.17%) FDMN in our study according to inclusion criteria. Outcome variables include demographic details and behavioural patterns of study subjects. Demographic details including age group, sex, marital status, migrant status, education, past occupation, present employment status, spouse HIV status, mode of transmission, etc. were noted from every patient of BD and FDMN. Comparison of concordance and discordance couples were done between the 2 countries. Unsafe sex, unsafe use of injectables treatment, mother-to-child transmission, intravenous drug abuse, and blood transfusions were the mode of transmission. Behavioural patterns included high/low risk and bad habits of the individuals. Multiple sexual partners, IV drug abuse, affected mother of a child, migrant workers, male-to-male sex, and anal sex were regarded as high-risk behaviours in our study. Smoking and alcohol abuse were considered bad habits. The protocol of the study was approved by the Ethics Committee of Cox's Bazar medical college and hospital.

Statistical analysis

Data were analysed using SPSS (Statistical Package for the Social Sciences) 25, and a comparison was done between Bangladeshi and FDMN peoples, as well as with other similar studies. Categorical variables were summarized with absolute values and proportions at their 95% confidence interval (CI), and continuous variables were summarized as mean (with standard deviation). Categorical variables of the 2 groups

Table 1. Sociodemographic characteristics of the study subjects

Characteristics	Bangladeshi	Myanmar national	p-value
Nationality	72	259	
Age group, %			
< 15	8.3	14.3	NS
15-45	79	68	
> 45	12.5	17.8	
Sex, n (%)			
Child female	3 (4.00)	18 (7.00)	0.005
Child male	3 (4.00)	19 (7.29)	
Female	28 (40.27)	141 (54.44)	
Male	38 (51.30)	81 (31.27)	
Marital status, n (%)			
Married	49 (68.00)	173 (66.69)	
Unmarried	16 (22.22)	16 (6.10)	
Widow	5(6.90)	35 (13.50)	
Educational status, n (%)			
Illiterate	2 (2.8)	181 (73.9)	0.000
Primary	46 (64)	42 (17)	
Below secondary	23 (32)	22 (9)	
Below higher secondary	1 (1.3)	0	
Income (taka), n (%)			
No	44 (66.66)	217(97.7)	0.000
0-2000	2	1	
2000-20,000	18	4	
> 20,000	2	0	
Family status, n			
Broken, Male/Female	1/0	2/5	NS
Nuclear, Male/Female	38/27	79/136	
Past occupation, n (%)			
Barber	1 (1.38)	1 (0.41)	
Small business	5 (6.94)	14 (5.76)	
Chairman	–	2 (0.82)	
Construction	1 (1.38)	–	
Driver	2 (2.77)	6 (2.47)	
Farmer	1 (1.38)	31 (12.76)	
Fisherman	1 (1.38)	2 (0.82)	
Housewife	25 (34.72)	134 (55.14)	
Labourer	3 (4.16)	6 (2.47)	
Pharmacist	2 (2.77)	1 (0.41)	
Plumber	1 (1.38)	1 (0.41)	
Service	16 (23.61)	9 (3.70)	
Shopkeeper	1 (1.38)	1 (0.41)	
Student	7 (9.72)	20 (8.23)	
Tailor	2 (2.77)	–	
Teacher	2 (2.77)	1 (0.41)	
Unemployed	2 (2.77)	14 (5.76)	

were compared by χ^2 test and Fisher exact test, and continuous variables by independent sample *t*-test. *P*-value was considered significant when less than 0.05 with 95% CI.

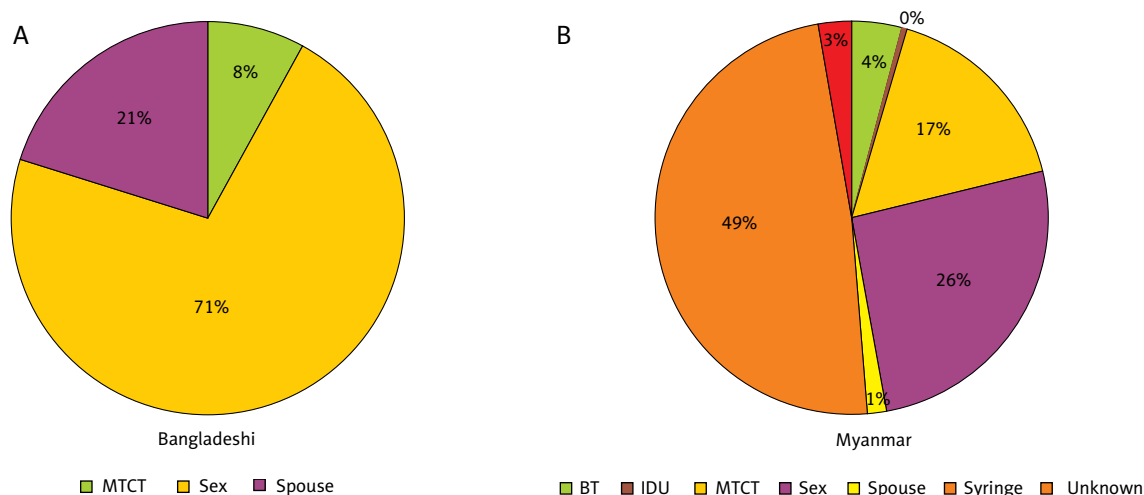
Results

Out of 331 HIV-positive clients, 259 were FDMN, and 72 were BD. The total number of children was around 6 times higher in FDMN (37, 14.2%) than BD (6, 8.3%). The number of male clients was 37 (51.3%) and 81 (31.2%), and female clients numbered 29 (40.27%) and 141 (54.4%) among BD and FDMN, respectively. Out of 72 clients of BD, 49 (68%) were married, 16 (22.2%) were unmarried, and 5 (6.9%) were widowed. Out of 259 clients of FDMN, 173 (66.7%) were married, 16 (6.1%) were unmarried, and 35 (13.5%) were widowed. Most of the patients of FDMN were illiterate (73.8%) in comparison to BD people, who were primarily educated (63.8%). Most of the males of BD (16, 22.54%) were service holders in comparison to FDMN, where most of them were farmers (31, 12.7%). 94.5% of males were migrants among the Bangladeshi ART receivers. Table 1 shows a comparison of the socio-demographic characteristics of the study subjects. Sexual exposure (70.8%) was the highest mode of transmission among BD in comparison to unsafe injections (49%) among FDMN (Figure 1). High-risk (IV drug abuse, multiple sexual partners, affected mother of child, migrant workers, male-to-male sex, anal sex) behaviour was observed more in BD (47, 65%) than in FDMN (67, 25%) (Table 2). About 61% of BD and 36% of FDMN adults had multiple sexual partners. Most of the males of BD (23, 35%) had bad habits like either smoking or alcohol abuse in comparison to females (9, 13%) of FDMN.

Discordant HIV couples were more common in FDMN (135, 64.9%) than BD (19, 36%). On the other hand, concordant HIV couples were more common in BD (19, 36%) than in FDMN (59, 28.3%). In some cases, their partner had died: 13 (24%) BD and 7 (3.3%) FDMN. Partner status was unknown among 2 (4%) BD and 7 (3.3%) FDMN cases. Male discordant rates were higher in BD (70%) in comparison to FDMN (67%). Female discordant rates were less among BD (20%) than FDMN (71%). In total, 7 clients of FDMN and 1 Bangladeshi had broken/separated from their family due to HIV. Only 1 unmarried male of BD and 1 married female of FDMN was bisexual. The mothers of all children of both groups were found to be HIV positive in all cases.

Discussion

The highest number of patients was observed among adult females (54.4%) in FDMN and adult



BT – , IDU – injecting drug use, MTCT – mother-to-child transmission

Figure 1. Mode of transmission among Bangladeshi and Myanmar nationals

Table 2. Behavioural pattern of study subjects

Characteristics	Bangladeshi	Myanmar national	p-value
Risk status, n (%)			
High risk	47 (65)	67 (25)	0.000
Low risk	25 (35)	192 (75)	
Bad habits present, n (%)			
Male	23 (35)	44 (20)	0.01
Female	2 (3)	9 (13)	

males (51.1%) in BD. The prevalence of HIV in Asia and the Pacific among adults (15 to 45) is higher (0.2%) [7]. In our study, higher numbers were also found in the age group 15 to 45 years in both groups: 79.0% and 67.9% Bangladeshi and FDMN, respectively, similar to global data. But young people in Myanmar make up more than half of the national population, with 5-14-year-olds making up the largest group [8], only 14.3% in our study for the FDMN children, maybe due to either lack of HIV testing facilities or awareness of the parents. Education may reduce HIV risk through increased learning about HIV and prevention methods, improved cognitive function to make complex decisions, better financial security, reducing participation in transactional sex for women, the ability to match with lower-risk sex partners, and increased future orientation and adherence to the ART treatment [9]. Lack of education is an important cause of increase HIV infection among FDMN because most of the patients in our study were illiterate (73.8%), significantly higher than among BD people ($p = 0.000$, 95% CI). Poor psychological health, objective health concerns such as fatigue and low energy, job skills deficit, and fear of discrimination are reported as the major barriers to returning to employment in the HIV-positive population rather than physical ill-health [10]. Our study also revealed similar problems

and showed 97.74% FDMN and 66.66% BD had no income ($p = 0.000$). Those who were not working at the time had a negative view of their capacities to acquire employment and to stay at work. Forcible displacement to a new country plays an important role for Myanmar nationals.

There was a significant difference in the mode of transmission between the 2 countries ($p = 0.000$, 95% CI). The highest mode of transmission among BD was sexual intercourse (70.83%) and among FDMN by unsafe injections (48.64%). Mother-to-child transmission was 16.6% and 8.3% among FDMN and BD, respectively. Although HIV rates among key populations (people who inject drugs [PWID], men who have sex with men [MSM], transgender people, and sex workers) in Asia and the Pacific are far higher than among the general population and key populations with their sexual partners accounted for more than 78% of new HIV infections in the region [3], at our centre migrant populations of BD and users of unsafe injectables for treatment (by sharing needles) by FDMN was the maximum. 94.5% of males were found to be migrants among ART receivers of Bangladesh. Sexual transmission of HIV is increased by this mobility, with migrant workers spending a long duration of time away from home and potentially being involved in high-risk behaviours, and new HIV infections continue to increase among migrant workers [11]. Attempts to reach key populations with prevention, treatment, and care services vary widely. It may be due to the fact that from 2016 to 2018 less than half of the key populations living with HIV in Bangladesh knew their status [5]. In Myanmar about 6.4% of MSM are HIV positive, 5.6% of sex workers are HIV positive, and the prevalence of HIV among PWID is 19% [5]. The lack of any transgender clients in our centre suggests that stigma, discrimination, and legal barriers remain a major obstacle for providing and accessing services for transgender persons, which is similar to UNDP reports [4].

In the absence of any intervention, mother-to-child transmission rates range from 15% to 45%. This rate can be reduced to below 5% with effective interventions during the period of pregnancy, labour, delivery, and breastfeeding [10]. In our study, the transmission rate among FDMN was 17% and among BD was 8%. It means we should provide emphasis on the prevention of mother-to-child transmission in the context of better health for mothers and their children. Around 5% of the AIDS cases in the world are estimated to have occurred through blood or blood products [12]. The rate of HIV infection by blood transfusion among FDMN was 4%, which indicates an insufficient blood screening program at Myanmar border areas.

The overall HIV prevalence among people who inject drugs (PWID) in Myanmar is 19% [4], but it was less than 1% among FDMN in our study, perhaps due to low socioeconomic status and lack of recreational facilities in their area in Myanmar. Unsafe injections (defined as the reuse of syringes and needles between patients without sterilization) occur routinely in many developing world regions, implying a significant potential for the transmission of any blood-borne pathogen. The risk of transmitting HIV from syringes that have been used for intramuscular or subcutaneous injections is low, in one study HIV antibodies were detected in 16 (6.2%) out of 260 syringes [13]. Studies of HIV survival in syringes have been carried out in western countries [14], and they clearly showed a risk of HIV transmission through unsafe injections. A large number of FDMN (126, 49%) were affected by HIV through unsafe injections in our study. To prove or disprove the theory that injections were safe, especially in resource-poor settings, it was important to do controlled studies under certifiable conditions. High risk behaviour was observed in 47 clients (65%) and 67 clients (26%) among BD and FDMN, respectively, significantly higher than expected ($p = 0.000$, 95% CI). In our study, most of the male of BD were migrants and had sexual exposure several times, and others were mothers of an infected child for both groups. Other high-risk behaviours were not found because the key populations lived in some specific geographical areas of BD and Myanmar [8, 15].

Tobacco smoking is very common among HIV-infected people, estimated at approximately 50% to 70% [16]. Drinking alcohol was higher among PLHIV than the general population. Moreover, unsafe sexual behaviour was also connected to drinking alcohol, which increased the risk of HIV transmission [16]. Around 23 male (35%) and 2 female (3%) BD, and 44 male (20%) and 9 female (13%) FDMN had bad habits like smoking or alcohol abuse ($p = 0.01$, 95% CI); all of them were below or near the national smoking prevalence rate (35%). These people should be placed under close observation for adherence and to find early complications.

There was a significant difference ($p = 0.000$ with 95% CI) in the spousal status of affected individuals between the 2 countries. Discordant couples are at high danger of HIV transmission and therefore are increasingly becoming a basis of HIV prevention research. Sero-discordant relationships make up 18-31% of couples in high HIV prevalence

countries. [17] Different studies show higher sero-discordance rates of 58% in Vietnam [18] and 58% in Thailand [19]. In our study, discordant HIV couples amounted to about 19 (36%) and 133 (64.5%) from BD and FDMN, respectively. Hence, BD people had less HIV discordance than FDMN people. In our study, concordant HIV couples were more common in BD (19, 36%) than FDMN (59, 28.3%) persons. In some cases, their partner had died or their status was unknown. The male discordance rate among BD people was 84% and among FDMN it was 35.5%. Female discordance rates were 15.7% among BD and 64.4% among FDMN. So, from our findings, there were more HIV-discordant positive males than females among the discordant BD couples. This is due to the fact that most of the males affected with HIV among BD were migrants. This finding is consistent with findings in Indian studies, which observed that males were the index partners in the majority of HIV-discordant partnerships [20]. But the picture is different among FDMN, in which there were more HIV-discordant positive females than males, which is similar to the findings by Walque *et al.* in Tanzania, who showed that 71% were female [21]. The variations may be due to differences in methodologies such as study areas, study designs, subject characteristics, and sampling methods.

In total 8 (3%) FDMN and 1 (1.5%) Bangladeshi had broken/separated from their family following HIV diagnosis. In 1 study among sero-discordant couples in Nairobi, the separation rate was 24% [22], which is higher than in our study. But it is important to follow up the patients. Only 1 unmarried male of BD and 1 married female of FDMN was bisexual.

Limitations: Most of the patients were illiterate in this centre, so proper history taking for each patient was a challenge.

Conclusions

There is a significant difference in sociodemographic profiles of HIV patients among BD and FDMN. Increased availability of integrated counselling and testing centre services in areas where FDMN live, as well as for migrant BD people, will prove beneficial for the community. Early identification and treatment, as well as proper education, are necessary to prevent the further spread of the disease. We studied only a part of the total HIV patients of BD and Myanmar peoples, which may not reflect the total sociodemographic profiles. Further in-depth analysis in the field of sociodemographic profiles is needed in the future to find out the complete profiles of the 2 countries.

Conflict of interest

The authors declare no conflict of interest.

References

1. WHO. HIV/AIDS. Available from: <https://www.who.int/news-room/facts-in-pictures/detail/hiv-aids> (Accessed: 25.07.2019).
2. Wikipedia. The free encyclopedia. HIV/AIDS in Bangladesh. Available from: https://en.wikipedia.org/wiki/HIV/AIDS_in_Bangladesh (Accessed: 06.01.2020).

3. Country factsheets. Bangladesh 2018, HIV and AIDS estimates: UNAIDS AIDS info. Available from: <https://www.unaids.org/en/regionscountries/countries/bangladesh>.
4. Winter S. UNDP May 2012. Lost in transition: transgender people, rights and HIV vulnerability in the Asia-Pacific region. Available from: <http://www.undp.org/content/dam/undp/library/hiv/aids/Lost%20in%20translation.pdf>.
5. Asia and The Pacific, UNAIDS Data 2019. Published July 2019. Accessed August 2019. Pages 137-207.
6. Marfatia YS, Naik E, Singhal P, Naswa S. Profile of HIV seroconcordant/discordant couples a clinic-based study at Vadodara, India. *Indian J Sex Transm Dis AIDS* 2013; 34: 5-9.
7. De Walque D. Does education affect HIV status? Evidence from five African countries. *World Bank Economic Review* 2009; 23: 209-233.
8. UNESCO, 17 April 2019. Positive health, education and gender equality outcomes for Myanmar youth. Available from: <https://en.unesco.org/news/positive-health-education-and-gender-equality-outcomes-myanmar-youth>.
9. Waddell G, Burton AK. Is work good for your health and well-being? The Stationery Office, London 2006.
10. WHO. HIV/AIDS, 2020. Mother-to-child transmission of HIV. Available from: <https://www.who.int/hiv/topics/mtct/about/en/>.
11. Avert global information and education on HIV and AIDS. HIV and AIDS in Asia & the Pacific regional overview. Available from: <https://www.avert.org/professionals/hiv-around-world/asia-pacific/overview> (Accessed: 20.02.2020).
12. Wahdan MH. Epidemiology of acquired immunodeficiency syndrome. World Health Organization. Regional Office for the Eastern Mediterranean, Alexandria 1995.
13. Rich JD, Dickinson BP, Carney JM, et al. Detection of HIV-1 nucleic acid and HIV-1 antibodies in needles and syringes used for non-intravenous injection. *AIDS* 1998; 12: 2345-2350.
14. Kaplan EH, Heimer R. A model-based estimate of HIV infectivity via needle sharing. *J Acquir Immune Defic Syndr* 1992; 5: 1116-1118.
15. NASP & UNAIDS, February 2016. Investment case: prioritizing investment options in HIV response in Bangladesh to NASP & UNAIDS, February 2016. Investment case: prioritizing investment options in HIV response in Bangladesh to end AIDS by 2030. Available from: https://www.aidsdatahub.org/sites/default/files/publication/Investment_Case_Bangladesh_2016.pdf.
16. Bhatta DN, Subedi A, Sharma N. Tobacco smoking and alcohol drinking among HIV-infected people using antiretroviral therapy. *Tob Induc Dis* 2018; 16: 16.
17. Phase III randomized placebo-controlled trial of HSV-2 suppression to prevent HIV transmission among HIV-discordant couples. Available from: <http://www.depts.washington.edu/hsvhiv/> (Accessed: 01.12.2013).
18. Van Tam V, Cuong DD, Alfvén T, et al. HIV sero-discordance among married HIV patients initiating anti-retroviral therapy in northern Vietnam. *AIDS Res Ther* 2016; 13: 39.
19. Rojanawiwat A, Ariyoshi K, Pathipvanich P, et al. Substantially exposed but HIV-negative individuals are accumulated in HIV-serology-discordant couples diagnosed in a referral hospital in Thailand. *Jpn J Infect Dis* 2009; 62: 32-36.
20. Rogers MC, Gopalakrishnan G, Kumarasamy N, et al. HIV in couples in South India; implications for prevention. *Int J STD AIDS* 2005; 16: 442-445.
21. Ngilangwa DP, Ochako R, Mboya BA, et al. Prevalence and predictors of HIV serodiscordant among cohabiting couples tested in northern Tanzania. *Pan Afr Med J* 2015; 22: 275.
22. Mackelprang RD, Bosire R, Guthrie BL, et al. High rates of relationship dissolution among heterosexual HIV-serodiscordant couples in Kenya. *AIDS Behav* 2014; 18: 189-193.