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Self-efficacy analysis among HIV positive patients in Jimma University Specialized Hospital: a cross-sectional study

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ABSTRACT

Objective: To determine self-efficacy of HIV sero-status disclosure decisions and safer sex in HIV sero-positive persons in Jimma University Specialized Hospital, south west Ethiopia.

Methods: A facility based cross sectional study design was conducted on 601 HIV positive person in Jimma University Specialized Hospital, ART clinic. Data were collected using standard pre-coded interviewer-administered questionnaire. The data were entered into SPSS version 16.0. Descriptive analysis was done to describe the characteristics of the study participants. Logistic regression was used to know the predictor of disclosure.

Results: Of the 591 study participants, 564 (95.4%) were disclosed their HIV status. Married HIV patients were 22.4 times more likely practice safe sex than single HIV patients [adjusted odds ratio (AOR), 95% CI: 22.4 (8.6, 58.6)]. HIV patients whose educational statuses were secondary school were 0.5 times less likely practice safe sex than HIV patients whose educational statuses were college/university [AOR, 95% CI: 0.5 (0.2,0.9)]. HIV patients whose monthly income was in between 901–1300 ETH Birr was 0.2 times less likely practice safe sex than HIV patients whose monthly income was above 1300 ETH Birr [AOR, 95% CI: 0.2 (0.1, 0.7)]. A unit increase in total score of self-efficacy on safe sex practice the odds of practicing safe sex was increased by 2.0 [AOR, 95% CI: 2.0 (1.1, 3.8)].

Conclusions: The HIV patients had high self-efficacy on disclosure, safe sex and treatment adherence. This good practice should be promoted and enhanced in different part of Ethiopia. The HIV patients had low awareness about their parents' HIV status. Future effort should be made on awareness level about their parents' HIV status.

1. Introduction

Globally many countries committed to achieving universal access to HIV prevention, treatment, care and support for all in need by 2010. Significant progress has been made. By the end of 2009, an estimated 5.25 million person in low- and middle-income countries were receiving life-prolong antiretroviral therapy. But, it still need more efforts to eliminate stigma and discrimination related to HIV transmission, gender, sex work, drug

use and homosexuality mark key steps to realize zero discrimination in the context of HIV[1,2].

HIV remains a dominant health threat in most of sub-Saharan Africa. Many countries with low HIV prevalence have raging epidemics concentrated among men who have sex with men, transgender people, sex workers and their clients and/or people who use drugs[3].

Stigma remains the single most important barrier to public action. The epidemic of fear, stigmatization and discrimination has undermined the ability of individuals, families and societies to protect themselves and provide support and reassurance to those affected. It complicates decisions about testing, disclosure of status, and ability to negotiate prevention behaviours and taking antiretroviral drugs[4,5].

HIV-positive individuals continue to engage in unsafe

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sexual and drug-sharing behaviours without sero-status disclosure, which hinders HIV prevention efforts. The disease progression theory suggests that some sero-positive individuals' decisions to disclose their status occur when the disease progresses to AIDS, because they can no longer hide the disease or keep it secret^[6].

Disclosure of an HIV-positive sero-status to a sex partner offers informed decision making opportunities. Intra- and interpersonal factors, including efficacy beliefs and relationship status are clearly related to the decisions to disclose. In casual relationships, women may feel that it is easier to engage in sex rather than to talk about it. The use of interventions that strengthens efficacy appraisals especially in relation to knowing when it is safe to disclose is warranted^[7].

According to Ethiopia Demographic and Health Survey in 2011, 1.5% of adults age 15–49 are infected with HIV and heterosexual contact accounts for the great majority of HIV transmission in the country. Widespread stigma and discrimination towards people infected with HIV adversely affect both people's willingness to be tested for HIV, disclosure and their adherence to antiretroviral therapy. Thus, to increase self-efficacy for HIV sero-status disclosure decisions and safer sex in HIV sero-positive people is an important indicator of the success of programmes to prevent and control HIV/AIDS^[8].

In Ethiopia, there is no documented information about self-efficacy for HIV sero-status disclosure decisions and safer sex in HIV sero-positive people until the time of this study. Therefore, this study helps to determine the self-efficacy for HIV sero-status disclosure decisions and safer sex in HIV sero-positive people.

2. Methods and materials

2.1. Study area and period

Facility based cross sectional survey was conducted from January 1 to February 28, 2013 in Jimma University Specialized Hospital (JUSH), Jimma town, Southwest Ethiopia, which is located 346 km from Addis Ababa. JUSH is the only teaching and referral hospital in the southwestern part of the country. It provides specialized health services through its 9 medical and other clinical and diagnostic departments for approximately 9000 inpatients and 80000 outpatients each year with bed capacity of 434 (surgical wards: 128; medical wards: 90; gynecology and maternity wards: 70; pediatrics: 86; psychiatry: 20; and ophthalmology wards: 40). Its healthcare work force is composed of more than 550 professionals of different disciplines. In 2012,

the total number of people who registered on Assisted Reproductive Technology (ART) clinic was 6278.

Source population: All HIV positive people who follow up in ART Clinic, JUSH.

Study population: Sampled HIV positive people who follow up in ART clinic, JUSH.

Sample size determination: the sample size is determined by using a single proportion formula, assuming P =the proportion of self-efficacy for disclosure and safe sex. But it is unknown, so took the value (50%) that gives a maximum sample size for the study.

D =margin of error=1%, Confidence interval (CI)=99%, since the issue is too sensitive, we tolerate 1% error. Therefore, the final sample size with 10% non-response rate is 601.

2.2. Sampling techniques/procedures

Simple random sampling technique was used to select study participants from a list of registration book.

2.3. Measurements

A structured English questionnaire was adapted from similar studies. The questionnaire has different sub-sections include socio-demographic, self-efficacy of disclosure decision, self-efficacy of safer sex, self-efficacy in HIV treatment adherence, disclosure experience and safe sex behavior. The specific behavioral items are: (1) How confident are you that you could make an effective decision of whether to telling this person you are HIV positive in this situation? (2) How confident are you that you could know whether it was safe to tell this person in this situation that you are HIV positive? (3) How confident are you that you could bring up the need to practice safer sex in this situation? (4) How confident are you that you would refuse to have unsafe sex in this situation even if your partner pressures you to be unsafe?

Thus, we obtained 4 self-efficacy scores: make an effective disclosure decision to know whether it was safe to disclose, bring up the need to practice safer sex and refuse to have unsafe sex. Self-efficacy of disclosure decision and self-efficacy of safer sex were summed across the first 8 stories. The story is then repeated with some details changed to make it different. There are 8 sets of stories. How confident they are that they could perform an action by circling their rating from 1=cannot do at all, 2=somewhat certain can do and 3=certain can do. Both disclosure experience and safe sex behavior items are included yes/no, alternatives and scale^[9,10]. All 4 self-efficacy of disclosure decision and self-efficacy of safer sex item for each taken together yield a maximum score of 12 and a minimum of

4. Self-efficacy in HIV treatment adherence has 12 items. Higher score on each item indicates higher level of self-efficacy.

2.4. Data collection techniques

Data were collected using pre-tested interviewer-administered questionnaire. All participated data collectors and supervisors had a BSc qualification in nursing and health education. Before the actual data collection, the questionnaire was tested on 5% of the total samples. The study participants that take part in the pre-test were include in the main study. The pre-test was conducted in Jimma Health Center.

2.5. Data quality control

The data collectors were introduced themselves and the purpose of the study to study participants. Questionnaires are adapted from similar studies and modified based on our objective to assure the quality of the data. The experts assured the content validity of the questionnaire. Training the data collectors and supervisors; Close supervision will be conducted. The questionnaire was also pre-tested on pilot area. The quality of the data was also assured through explained unclear idea during data collection, completeness check and consistency of the filled questionnaire. The data was cleaned and analyzed in appropriate analysis.

2.6. Data analysis

The data were entered into statistical package for social sciences version 16.0. The data were edited and cleaned for inconsistencies, completeness. Descriptive analysis was done to describe the characteristics of the study participants. Correlations were computed among the 4 self-efficacy scales. Construct validity was computed to see associations between self-efficacy scales and targeted behaviors (disclosure and safe sex). The mean score of the scales will be computed to make an effective disclosure decision to know whether it was safe to disclose, bring up the need to practice safer sex and refuse to have unsafe sex. Logistic regression was used to know the predictor of disclosure. Finally, independent variables which had statistically significant association with the dependent variable ($P < 0.05$) will be entered to the final multiple logistic regression models.

2.7. Ethical consideration

Ethical clearance will be obtained from ethical clearance

committee of college of public health and medical science of Jimma University. After getting the ethical clearance, written permission will be obtained from JUSH and verbal informed consents will be obtained from each study participants.

3. Results

3.1. Socio-demographic characteristics

Out of 601 study participants, 591 were interviewed with a response rate of 98.3%. Regarding to sex, 401 (67.9%) were females and the mean age of the study participants were 34.5 ± 8.9 with a minimum of 20 years and maximum of 67 years. Of the 591 study participants, 307 (51.9%) were orthodox in religion and 288 (48.7%) were Oromo in ethnicity (Table 1).

Table 1

Frequency distribution on socio-demographic characteristics of HIV patients in JUSH, April 2013.

| Variables (n=591) | Frequency | Percent (%) | |
|--------------------|---------------------|-------------|------|
| Age | 20–24 | 43 | 7.3 |
| | 25–29 | 151 | 25.5 |
| | 30–34 | 116 | 19.6 |
| | 35–39 | 146 | 24.7 |
| | 40–44 | 53 | 9.0 |
| | 45–49 | 29 | 4.9 |
| | ≥50 | 53 | 9.0 |
| Sex | Male | 190 | 32.1 |
| | Female | 401 | 67.9 |
| Religion | Orthodox | 307 | 51.9 |
| | Muslim | 180 | 30.5 |
| | Protestant | 104 | 17.6 |
| Ethnicity | Oromo | 288 | 48.7 |
| | Amhara | 137 | 23.2 |
| | Curage | 19 | 3.2 |
| | Tigre | 20 | 3.4 |
| | Dawro | 75 | 12.7 |
| | Others [#] | 52 | 8.8 |
| Marital status | Married | 332 | 56.2 |
| | Divorced | 103 | 17.4 |
| | Widowed | 62 | 10.5 |
| | Single | 94 | 15.9 |
| Educational status | Illiterate | 107 | 18.1 |
| | Elementary school | 153 | 25.9 |
| | Secondary school | 155 | 26.2 |
| | College/University | 176 | 29.8 |
| Monthly income | <450 | 116 | 22.8 |
| | 450–600 | 122 | 24.0 |
| | 601–900 | 99 | 19.4 |
| | 901–1300 | 72 | 14.1 |
| | >1300 | 100 | 19.6 |

[#]: Kafficho, yem, Hadiya and Wolaita.

3.2. Clinical characteristics

Out of 601 study participants, 210 (38.6%) study participants had >500 cluster of differentiation 4 (CD4) counts. Regarding to treatment status, 578 (97.8%) were on ART. Of the 591 study participants, 564 (95.4%) were disclosed their HIV status. Regarding reasons for disclosure, 356 (63.2%) study participants mentioned to get treatment. Of the 591 study participants, 300 (53.2%) were firstly disclosed their HIV status to their husband/partner (Table 2).

Table 2

Frequency distribution on disclosure and treatment status of HIV patients in JUSH, April 2013.

| Variables | Frequency | Percent (%) | |
|-----------------------------|-------------------------------|-------------|-------|
| CD4 count | <200 | 53 | 9.7 |
| | 200–350 | 134 | 24.6 |
| | 351–500 | 147 | 27.0 |
| | >500 | 210 | 38.6 |
| | Total | 544 | 100.0 |
| Treatment status | Pre-ART | 13 | 2.2 |
| | On-ART | 578 | 97.8 |
| | Total | 591 | 100.0 |
| Disclosure status | Yes | 564 | 95.4 |
| | No | 27 | 4.6 |
| | Total | 591 | 100.0 |
| Reason for disclosure | To get support | 49 | 8.7 |
| | To get treatment | 356 | 63.2 |
| | The parents can also test | 151 | 26.8 |
| | To avoid unwanted pregnancies | 7 | 1.2 |
| | Total | 563 | 100.0 |
| To whom you first disclosed | Husband/Partner | 300 | 53.2 |
| | Parents | 72 | 12.8 |
| | Sibling | 38 | 6.7 |
| | Children | 31 | 5.5 |
| | Other relatives | 12 | 2.1 |
| | Friends | 26 | 4.6 |
| | Husband and parents | 47 | 8.3 |
| | Parents and sibling | 17 | 3.0 |
| | Parents and children | 9 | 1.6 |
| | Sibling and children | 12 | 2.1 |
| | Total | 564 | 100.0 |

3.3. Perception on disclosure

All the participants were asked which specific group is important to be disclosed (Table 3). Of the 588 study participants, 170 (28.9%), 280 (47.6%) and 273 (46.4%) were perceived that disclosing HIV status to boss/employers, close friends and casual friends are not important, respectively. But 431 (73.3%), 581 (98.8%) and 483 (82.1%) were perceived that disclosing HIV status to their children, health professionals and sexual partners are very important, respectively.

Table 3

Perception of HIV patients on disclosure in JUSH, April 2013.

| Variable (n=588) | Response | Frequency | Percent (%) |
|-----------------------|----------|-----------|-------------|
| Boss/employers | Yes | 170 | 28.9 |
| | No | 418 | 71.1 |
| Close friends | Yes | 280 | 47.6 |
| | No | 308 | 52.4 |
| Casual friends | Yes | 273 | 46.4 |
| | No | 315 | 53.6 |
| Brothers and sisters | Yes | 463 | 78.7 |
| | No | 125 | 21.3 |
| Children | Yes | 431 | 73.3 |
| | No | 157 | 26.7 |
| Health care providers | Yes | 581 | 98.8 |
| | No | 7 | 1.2 |
| Sexual partners | Yes | 483 | 82.1 |
| | No | 105 | 17.9 |

3.4. Self-efficacy

The mean score of self-efficacy on effective disclosure decision, self-efficacy on safe disclosure, self-efficacy on safe sex practice, self-efficacy on refusal of unsafe sex and self-efficacy on treatment adherence for HIV patients were 4.6 ± 1.9 , 4.2 ± 1.9 , 2.6 ± 1.4 , 2.7 ± 1.4 and 34.5 ± 2.7 , respectively.

3.5. Correlation of self-efficacy scales

Self-efficacy on make an effective disclosure decision has linear correlation with self-efficacy on safe disclosure, self-efficacy on make an effective disclosure decision, self-efficacy on safe sex practice and self-efficacy on treatment adherence ($r=0.83$, 0.11 and 0.12 , $P=0.01$), respectively. Self-efficacy on safe disclosure has linear correlation with self-efficacy on safe sex practice, self-efficacy on refusal of unsafe sex and self-efficacy on treatment adherence ($r=0.21$, 0.15 and 0.12 , $P=0.01$). Self-efficacy on safe sex practice has linear correlation with self-efficacy on refusal of unsafe sex ($r=0.92$, $P=0.01$). Regarding to gender difference in self-efficacy for disclosure decisions and negotiating safer sex, the statistical analysis showed that there was a significant association between gender and self-efficacy on make an effective disclosure decision; self-efficacy on safe disclosure; self-efficacy on safe sex practice; self-efficacy on refusal of unsafe sex and self-efficacy on treatment adherence at $P<0.05$. Of the 588 study participants, 375 (63.8%) and 433 (73.6%) were aware of parents HIV status and had safe sexual practice respectively. Of the 581 study participants, 571 (98.3%) were not missing ART drug during treatment period (Table 4).

Table 4

Frequency distribution on awareness, drug use and sexual behavior among HIV patients in JUSH, April 2013.

| Variables | Response | Frequency | Percent (%) |
|--|----------|-----------|-------------|
| Aware of parents HIV status (n=588) | Yes | 375 | 63.8 |
| | No | 213 | 36.2 |
| Save sexual behavior (n=588) | Yes | 433 | 73.6 |
| | No | 155 | 26.4 |
| Missing ART drug (n=581) | Yes | 10 | 1.7 |
| | No | 571 | 98.3 |

3.6. Predictor of safe sex

Logistic regression analysis was done to identify the effect of independent variables on sexual behavior, and this showed that married HIV patients [adjusted odds ratio (AOR), 95% CI 22.4 (8.6, 58.6)] were 22.4 times more likely practice safe sex than single HIV patients. HIV patients whose educational statuses were secondary school [AOR, 95% CI 0.5 (0.2, 0.9)] were 0.5 times less likely practice safe sex than HIV patients whose educational statuses were college/university. HIV patients whose monthly income was between 901–1300 [AOR, 95% CI 0.2 (0.1, 0.7)] ETH Birr were 0.2 times less likely practice safe sex than HIV patients whose monthly income was above 1300 ETH Birr. A unit increase in total score of self-efficacy on safe disclosure the odds of practicing safe sex was reduced by 0.6 [AOR, 95% CI 0.6 (0.5, 0.8)]. A unit increase in total score of self-efficacy on safe sex practice the odds of practicing safe sex was increased by 2.0 [AOR, 95% CI 2.0 (1.1, 3.8)] (Table 5).

Table 5

Multiple logistic regression analysis on associated factors of sexual behavior, April 2013.

| Variables | Sexual behavior | | AOR (95% CI) | |
|---|--------------------|-------------------|------------------|-------------------|
| | Safe sex | Unsafe sex | | |
| Current marital status | Married | 192 (57.8%) | 140 (42.2%) | 22.4 (8.6, 58.6)* |
| | Divorced | 91 (91.0%) | 9 (9.0%) | 1.6 (0.5, 5.2) |
| | Widowed | 6 (100.0%) | 0 | 0 |
| | Single | 88 (93.6%) | 6 (6.4%) | 1 |
| Educational status | Illiterate | 81 (75.7%) | 26 (24.3%) | 0.6 (0.3, 1.5) |
| | Elementary school | 127 (83.0%) | 26 (17.0%) | 0.6 (0.3, 1.4) |
| | Secondary school | 122 (78.7%) | 33 (21.3%) | 0.5 (0.2, 0.9)** |
| | College/University | 103 (59.5%) | 70 (40.5%) | 1 |
| Monthly income (ETH Birr) | <450 | 90 (77.6%) | 26 (22.4%) | 1.0 (0.4, 2.5) |
| | 450–600 | 91 (74.6%) | 31 (25.4%) | 0.8 (0.3, 1.8) |
| | 601–900 | 69 (69.7%) | 30 (30.3%) | 0.8 (0.4, 1.8) |
| | 901–1300 | 60 (83.3%) | 12 (16.7%) | 0.2 (0.1, 0.7)** |
| | >1300 | 55 (56.7%) | 42 (43.3%) | 1 |
| Total score of self-efficacy on safe disclosure | 4.56 [#] | 3.38 [#] | 0.6 (0.5, 0.8)* | |
| Total score of self-efficacy on safe sex practice | 2.63 [#] | 2.71 [#] | 2.0 (1.1, 3.8)** | |

[#]: Mean score; *: Significant at $P < 0.001$; **: Significant at $P < 0.05$.

4. Discussion

This study provides insight to self-efficacy for disclosure decisions, self-efficacy for negotiating safer sex, self-efficacy for treatment adherence, disclosure and sexual behavior of HIV patients in JUSH. The findings of this study

showed that 38.6% study participants had >500 CD4 counts. This implies that the majority are not improving their immune status. Not improving their immune has a negative effect on quality of life. Ninety five percents of the study participants disclosed their HIV status. Regarding reasons for disclosure, 63.2% in the study participants mentioned to get treatment. This result is very high when compared with a study conducted in South Africa and Nigeria[11,12]. This may be due to differences between the two studies concerning accessibility of HIV service opportunities and awareness of participants about the importance of disclosure.

The mean scores about self-efficacy on effective disclosure decision, self-efficacy on safe to disclosure, self-efficacy on safe sex practice, self-efficacy on refusal of unsafe sex and self-efficacy on treatment adherence for HIV patients were 4.6, 4.2, 2.6, 2.7 and 34.5, respectively. These imply that the study participants have high self-efficacy on disclosure, safe sex and treatment adherence. When we see one by one, when the study participants have higher self-efficacy on effective disclosure decision, refusal of unsafe sex and treatment adherence as compare to other self-efficacy. This indicates that the success of HIV service in this community.

Self-efficacy on making an effective disclosure decision has linear correlation with self-efficacy on safe to disclosure, self-efficacy on safe sex practice and self-efficacy on treatment adherence, respectively. Self-efficacy on safe to disclosure has linear correlation with self-efficacy on safe sex practice, self-efficacy on refusal of unsafe sex and self-efficacy on treatment adherence. Self-efficacy on safe sex practice has linear correlation with self-efficacy on refusal of unsafe sex. These indicate that self-efficacy on safe to disclosure and safe sex practices have direct relationship. Giving disclosure on health service implies directly to inform the HIV patients about safe sex practice. This helps to achieve the goal of HIV prevention and control program. And this indicated the high rates in HIV patients of practicing preventive behavior as compared to individuals who had no self-efficacy.

There is significant association between gender and self-efficacy on make an effective disclosure decision; self-efficacy on safe to disclosure; self-efficacy on safe sex practice; self-efficacy on refusal of unsafe sex and self-efficacy on treatment adherence. This implies there is gender difference in self-efficacy for disclosure decisions and negotiating safer sex. So while designing self-efficacy program for HIV patients, Segmentation of audience (male and female) is very curial point to achieve the planned objective.

Sixty four and 73.6% of the study have awareness about their parents HIV status and had safe sexual practice

respectively. This result is low when compared with a study conducted other part of Ethiopia, Nigeria, Hawaii, Seattle and Washington^[11–13]. The possible reason might be socio-cultural difference and level of stigma and discrimination.

According to logistic regression analysis showed that married HIV patients were more likely practice safe sex than single HIV patients. HIV patients whose educational statuses were secondary school were less likely to practice safe sex than HIV patients whose educational statuses were college/university. HIV patients whose monthly income was in between 901–1300 ETH Birr were less likely to practice safe sex than HIV patients whose monthly income was above 1300 ETH Birr. Regarding a unit increase in total score of self-efficacy on safe sex practice, the odds of practicing safe sex was increased by 2.0. This result is similar when compared with a study conducted in Nigeria^[14].

The HIV patients had lower CD4 counts. Future study should be conducted on quality of life among HIV patients. The HIV patients had very high HIV disclosure status. The HIV patients had high self-efficacy on disclosure, safe sex and treatment adherence. This good practice should be promoted and enhanced in different part of Ethiopia.

Self-efficacy and safe sex practices had direct relationship. There are significant associations between gender and self-efficacy on making an effective disclosure decision; self-efficacy on safe to disclosure; self-efficacy on safe sex practice; self-efficacy on refusal of unsafe sex and self-efficacy on treatment adherence. While designing self-efficacy program for HIV patients, segmentation of audience (male and female) is very curial point to achieve the planned objective.

The HIV patients had low awareness about their parents HIV status. Future effort should be made on awareness level about their parents HIV status. Marital status about HIV patient's educational statuses, monthly income self-efficacy on safe to disclosure and self-efficacy on safe sex practice were independent predictors of safe sex practices.

Conflict of interest statement

We declare that we have no conflict of interest.

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References

- [1] UNAIDS and World Health Organization. *AIDS epidemic update December 2009*. Geneva: World Health Organization; 2009.
- [2] United Nations. MDG summit 2010–high–level plenary meeting of the general assembly. United Nations: CSO–Net; 2010. [Online] Available from: <http://esango.un.org/irene/?page=viewContent&ty pe=8&nr=7362§ion=8> [Accessed on 12th Marth 2014]
- [3] Mathers BM, Degenhardt L, Phillips B, Wiessing L, Hickman M, Strathdee SA, et al. Global epidemiology of injecting drug use and HIV among people who inject drugs: a systematic review. *Lancet* 2008; **372**: 1733–1745.
- [4] Ban Ki–moon. Ban Ki–moon: the stigma factor. Washington, DC: the Washington Times, LLC; 2008. [Online] Available from: <http://www.washingtontimes.com/news/2008/aug/06/the–stigma–factor/> [Accessed on 12th March 2014]
- [5] World Health Organization. Progress report 2011: global HIV/AIDS response: epidemic update and health sector progress towards universal access. Geneva: World Health Organization; 2011. [Online] Available from: http://www.who.int/hiv/pub/progress_report2011/en/ [Accessed on 14th March 2014]
- [6] Serovich JM, Lim JY, Mason TL. A retest of two HIV disclosure theories: the women's story. *Health Soc Work* 2008; **33**(1): 23–31.
- [7] Rollnick S, Miller WR, Butler CC. *Motivational interviewing in health care: helping patients change behavior*. 1st ed. New York: Guildford Press; 2007.
- [8] Central Statistical Agency and ICF Macro. Ethiopia demographic and health survey 2011: preliminary report. Addis Ababa, Ethiopia: Central Statistical Agency; Calverton, USA: ICF Macro; 2011. [Online] Available from: <http://dhsprogram.com/pubs/pdf/PR10/PR10.pdf> [Accessed on 15th March 2014]
- [9] Kalichman SC, Rompa D, DiFonzo K, Simpson D, Kyomugisha F, Austin J, et al. Initial development of scales to assess self-efficacy for disclosing HIV status and negotiating safer sex in HIV–positive persons. *AIDS Behav* 2001; **5**: 291–296.
- [10] Sowell RL, Seals BF, Phillips KD, Julious CH. Disclosure of HIV infection: how do women decide to tell? *Health Educ Res* 2003; **18**: 32–44.
- [11] Kalichman SC, Nachimson D. Self-efficacy and disclosure of HIV–positive serostatus to sex partners. *Health Psychol* 1999; **18**: 281–287.
- [12] Titilope AA, Adediran A, Umeh C, Akinbami A, Unigwe O, Akanmu AS. Psychosocial impact of disclosure of HIV sero–status in heterosexual relationship at the Lagos University teaching Hospital, Nigeria. *Niger Med J* 2011; **52**(1): 55–59.
- [13] Deribe K, Woldemichael K, Wondafrash M, Haile A, Amberbir A. Disclosure experience and associated factors among HIV positive men and women clinical service users in southwest Ethiopia. *BMC Public Health* 2008; **8**: 81.
- [14] Sullivan K, Voss J, Li D. Female disclosure of HIV–positive serostatus to sex partners: a two–city study. *Women Health* 2010; **50**(6): 506–526.