# The Relation between Knowledge of HIV-AIDS, Attitude, Behavior and the Incidence of STIs in Housewives in Bukittinggi City, West Sumatra Province 2013

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**ABSTRACT---** ***This study aims to determine the relationship between theknowledge ofHIV-AIDS, attitude and behavior of housewives and the occurence of Sexually Transmitted Infections. Some knowledgesabout HIV-AIDS are namely the way of transmission, prevention, correct perception, and comprehensive knowledge. This study uses a quantitative method. The results of the study show that there is no correlation between knowledge of HIV-AIDS with the occurence of sexually transmitted infections. The factor associated with sexually transmitted infections is behavior. Predecessor factors and husband's behavior also affect the incidence of sexually transmitted infections. Respondents with higher levels of education, more mature age of sexual activity, non-risky sexual behavior will be able to reduce the occurence of STIs.***

**Keywords---** Knowledge and behavior; Sexually Transmitted Infections; Housewives;

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## 1. PRELIMINARY

One of the focuses of the MDGs program is the handling of issues of HIV-AIDS (1). In the last period (1999-2008) there was an increased of AIDS cases of more than 52.9 times (2). The percentage of AIDS cases by gender in 2011 was 64.9% male and 35.1% female. While the percentage of heterosexually transmitted AIDS in 2011 was 76.3%, and the rate of transmission by using a syringe was 36.2% (3).

Nowadays, the risk of HIV-AIDS incidence begins to shift. Previously, this virus attacks the groups of people with high-risk jobs and behaviors. But this time, the infection has started attacking the low-risk groups such as housewives, infants and children (4). Today, the incidence of HIV in women is quite alarming. The incidence in men has decreased, whereas the incidence in women is increasing. Data showed the number of men affected by HIV / AIDS in 2004 was five times that of the case in women, while in 2005 and 2008 the number was dropped to 3.7 times (2; 5). The incidence of HIV infections in housewives is mostly transmitted through sexual intercourse with her partner (husband) with different characteristics. In accordance with the Ministry of Women Empowerment,one of the reasons is the ignorance of the method of prevention, the lack of strength of socio-economic, factors of environment and customs, the culture that places women in sub-dominance positions, and domestic violence (6; 7).

This study aims to look at the incidence of sexually transmitted infections (STIs) with knowledge about HIV in housewives in Bukittinggi, where it is known that STIs is the entry door for HIV infections which increase the risk of becoming HIV up to 2-9 times (8).

## 2. METHODS

This study used a quantitative method on 134 respondents, all of them were housewives aged 15-35 years in Bukittinggi city. The sampling method used the BKKBN data frame. Subjects selected were those that agreed to be interviewed, domiciled in the study area forat least one year.

The type of STIs data has a category of"dependent variable". While the characteristics, knowledge about HIV, as well as the behavior was categorized as"independent variables". The establishment of the diagnosis was made by officers of STIs clinic. Knowledge of how HIV was categorized "correct" if the respondent answered correctly 4 of 6 questions. The correct perception of method of HIV transmission is categorized "wrong"if they accept 3 of 4 questions about correct perception of method of HIVprevention, and categorized "correct" if they reject three of the four questions. The Knowledge of method of HIV prevention is categorized "correctly understand" if the mother answered correctly 4 of 6 questions of knowledge about the correct prevention. The comprehensive knowledge of HIV-AIDS is categorized

"comprehensively know" if they answer correctly the all 5 questions about the comprehensive knowledge of HIV-AIDS. The respondents are categorized as "having behavior of potentially infected"if they havepotentially infected behaviors who have one more behaviorssuch ashaving tattoos, piercing, the use of used syringe, used razors.

## 3. RESULTS

### a. Univariate analysis

The majority of respondents are 25-35 years old, with middle-to-low education, unemployment, being the first wife, having the first husband, having first sexual intercourse at the age of adulthood namely > 20 years old (Table 1).

**Table 1.** Distribution of respondents according to characteristics

| Distribution of respondents | | | Number | Percentage (%) |
|---|---|---|---|---|
| 1 | Age group | 15-24 years | 14 | 10.4 |
| | | 25-35 years | 120 | 89.6 |
| 2 | Level of education | Middle to low | 110 | 82.1 |
| | | Academy / College | 24 | 17.9 |
| 3 | Husband's occupation | Civil servant | 5 | 3.7 |
| | | Driver | 22 | 16.5 |
| | | Policeman | 3 | 2.2 |
| | | Entrepreneur | 63 | 47 |
| | | Army | 2 | 1.5 |
| | | others | 39 | 29.1 |
| | Wife's occupation | Housewife | 91 | 67.9 |
| | | Local driver | 1 | 1 |
| | | others | 42 | 31.3 |
| 4 | Wife no. | First wife | 117 | 87.3 |
| | | Second wife, third wife, etc. | 17 | 12.7 |
| 5 | Husband no. | First husband | 123 | 91.8 |
| | | Second husband, third husband, etc. | 11 | 8.2 |
| 6 | Age of husband when having the first sexual intercourse | young | 4 | 3 |
| | | adult | 114 | 85.1 |
| | | unknown | 16 | 11.9 |
| 7 | Age of wife when having the first sexual intercourse | young | 21 | 15.7 |
| | | adult | 113 | 84.3 |

The knowledge about HIV transmission in humans was 94%. This knowledge was based on 4 out of 6 correct answers of respondents to the question of HIV transmission in humans, and the transmission of HIV from mother to child (Table 2).

**Table 2.** Knowledge of HIV transmission in humans
(Infection in the population and transmission from mother to child)

| Knowledge | Knowing | | Not knowing | |
|---|---|---|---|---|
| | Amount | % | Amount | % |
| Unsafe sexual intercourse may transmit HIV and STIs | 118 | 88.1 | 16 | 11.9 |
| Using same syringe may transmit HIV | 126 | 94.0 | 8 | 6.0 |
| Unsafe blood transmission may transmit HIV | 131 | 97.8 | 3 | 2.2 |
| Knowledge of HIV transmission in population | 128 | 95.5 | 6 | 4.5 |
| HIV can be transmitted to infants during pregnancy | 123 | 91.8 | 11 | 8.2 |
| HIV can be transmitted to infants during childbirth | 104 | 77.6 | 30 | 22.4 |
| HIV can be transmitted to infants during breastfeeding | 109 | 81.3 | 25 | 18.7 |
| Knowledge of HIV transmission from Mother to child | 114 | 85.1 | 20 | 14.9 |
| Knowledge of HIV transmission in humans | 126 | 94.0 | 8 | 6.0 |

Respondents with the perception that a person is not infected with HIV due to buying vegetables from people living with HIV AIDSwere (91.8%), and the respondents with the perception that a person is not infected because of a mosquito bite were (64.9%) (Table 3). The majority of respondents with the perception of completely rejecting false statements about the transmission of HIV is 74.6%, the rest of the respondents have a misperception about how HIV is transmitted.

**Table 3.** Correct perception ofhousewives about the transmission of HIV

| Perception | Yes | | No | |
|---|---|---|---|---|
| | Amount | % | Amount | % |
| A person can be infected with HIV because of buying vegetables from people living with HIV AIDS | 11 | 8.2 | 123 | 91.8 |
| A person can be infected with HIV because ofeating by using the same plate with people living with HIV AIDS | 41 | 30.6 | 93 | 69.4 |
| A person can be infected with HIV because offood served by people living with HIV AIDS | 27 | 20.1 | 107 | 79.9 |
| person can be infected with HIV because of mosquito bite | 47 | 35.1 | 87 | 64.9 |

The majority of respondents knowing that sexual intercourse with only one permanent partner whois not at risk can prevent the incidence of HIV were (88.8%), while the respondents who answered that no sexual intercourse at all can prevent HIV were 54.5% (table 4). The majority of respondents having correct knowledge about the prevention of HIV were 90.2%, and the rest of them did not have the correct knowledge about the prevention of HIV.

**Table 4.**The correct knowledge of housewives on the method of prevention of HIV

| Correct knowledge about the prevention of HIV | Yes | | No | |
|---|---|---|---|---|
| | Amount | % | Amount | % |
| Having sexual intercourse with only one permanent partner whois not at risk can prevent the incidence of HIV | 119 | 88.8 | 15 | 11.2 |
| Having sexual intercourse with only the husband / wife can prevent the incidence of HIV | 122 | 91 | 12 | 9 |
| Not having sexual intercourse at all can prevent the incidence HIV-AIDS | 73 | 54.5 | 61 | 45.5 |
| Using condoms during a sexual intercourse with partner who is at risk can prevent the incidence of HIV | 109 | 81.3 | 25 | 18.7 |
| Circumcision can prevent the incidence of HIV | 70 | 52.2 | 64 | 47.8 |
| Not using the same syringe or used syringe can prevent the incidence of HIV | 127 | 94.8 | 7 | 5.2 |

The majority of respondents having knowledge that the mutual faithful to the partner can reduce the risk of HIV-AIDS were 94.7%. “A person with HIV can be identified only by looking” the respondents who answered this statement "no" were 89.6% after categorized according to the respondents knowingit comprehensively (Table 5). Respondents who know comprehensively about HIV-AIDS and do not know comprehensively were not much different. 53% housewives do not know about STIs comprehensively and the rest of the respondents have a comprehensive knowledge of HIV-AIDS.

**Table 5.** Comprehensive knowledge of HIV-AIDS

| Comprehensive knowledge of HIV-AIDS | Yes | | No | |
|---|---|---|---|---|
| | Amount | % | Amount | % |
| Reducing the risk of infected by using condoms | 117 | 87.3 | 17 | 12.7 |
| Reducing the risk of infected with faithful to each other | 127 | 94.8 | 7 | 5.2 |
| Identifying a person with HIV by only looking | 14 | 10.4 | 120 | 89.6 |
| Can a person be infected through eating utensils? | 38 | 28.4 | 96 | 71.6 |
| Can a person be infected through insect bites? | 43 | 32.1 | 91 | 67.9 |

A total of 17.2% respondents used a condom during a sexual intercourse. The reasonof using condoms is to prevent transmission for having complaints (69.6%), other reason is contraception as much as 30.4% of respondents. Most

husbands do not have complaintsrelated to their genital organ (94.7%), and as much as 5.2% husband had complaintsrelated to their genital organ.

The majority of housewives having one sexual partner throughout their lives were 82.1%, and 4.48% housewives admitted to having sexual relations outside the marriage. After categorized according to the number of couples who are at risk and not at risk, there were 4.48% of couples at risk. In addition, there were respondents withpotentially infected behavior of 36.6%. The potentially infected behaviors such as the use of used syringe, used razors, and having tattoos and piercing.

**b. Bivariat Analysis**

Based on table 6, it can be found that there is a significant correlation between the incidence of STIs and the level of education (p = 0.026); wife's status (p = 0.008); husband's status (p = 0.014); the behavior of potentially being infected and transmitting (p = 0.014); as well as the age when having sexual intercourse for the first time (p = 0.001). Although statistically the number of sexual partners at risk (having sexual relations not with the spouse) and the use of condoms were not proved that they had relationship, but it can be found that they could increase the risk with OR = 5.314 and OR = 1,376.

**Table 6.** The distribution of independent variables with the incidence of STIs

| Variables | Syndrom-approach STIs | | | | Total | | OR | *p value* |
|---|---|---|---|---|---|---|---|---|
| | Not STIs | | STIs | | | | | |
| | n | % | n | % | n | % | | |
| Age Group | | | | | | | | |
| 25-35 | 87 | 72.5 | 33 | 27.5 | 120 | 100 | 0.506 | 0.231 |
| 15-24 | 8 | 57.1 | 6 | 42.9 | 14 | 100 | | |
| Level of Education | | | | | | | | |
| High | 22 | 91.7 | 2 | 8.3 | 24 | 100 | 0.179 | 0.026 |
| Middle to low | 73 | 66.4 | 37 | 33.6 | 110 | 100 | | |
| Wife's Status | | | | | | | | |
| First wife | 88 | 75.2 | 29 | 24.8 | 117 | 100 | 4.335 | 0.008 |
| Second, third wife | 7 | 41.2 | 10 | 58.8 | 17 | 100 | | |
| Husband's Status | | | | | | | | |
| First Husband | 91 | 74 | 32 | 26 | 123 | 100 | 4.977 | 0.014 |
| Second, third husband | 4 | 36.4 | 7 | 63.6 | 11 | 100 | | |
| Husband's occupation is bridge group and population at risk | | | | | | | | |
| No | 80 | 74.8 | 27 | 25.2 | 107 | 100 | 0.422 | 0.084 |
| Yes | 15 | 55.6 | 12 | 44.4 | 27 | 100 | | |
| Knowing the method of HIV transmission in humans | | | | | | | | |
| Yes | 91 | 72.2 | 35 | 27.8 | 126 | 100 | 0.385 | 0.23 |
| No | 4 | 50 | 4 | 50 | 8 | 100 | | |
| Perception on how HIV is transmitted | | | | | | | | |
| Correct | 74 | 74 | 26 | 26 | 100 | 100 | 0.568 | 0.255 |
| Wrong | 21 | 61.8 | 13 | 38.2 | 34 | 100 | | |
| Knowing the correct way of prevention of HIV | | | | | | | | |
| Yes | 85 | 70.3 | 36 | 29.8 | 121 | 100 | 1.412 | 0.756 |
| No | 10 | 76.9 | 3 | 23.1 | 13 | 100 | | |
| Knowing comprehensively about HIV-AIDS | | | | | | | | |
| Yes | 42 | 66.7 | 21 | 33.3 | 63 | 100 | 1.472 | 0.41 |
| No | 53 | 74.7 | 18 | 25.4 | 71 | 100 | | |
| Behavior potentially being infected and transmitting | | | | | | | | |
| No | 67 | 78.8 | 18 | 21.2 | 85 | 100 | 2.792 | 0.014 |
| Yes | 28 | 57.1 | 21 | 42.9 | 49 | 100 | | |
| Age when having sexual intercourse for the first time | | | | | | | | |
| Adult | 87 | 77 | 26 | 23 | 113 | 100 | 0.184 | 0.001 |
| Young | 8 | 38.1 | 13 | 61.9 | 21 | 100 | | |
| Number of sexual partners for lifetime | | | | | | | | |
| Not at risk | 93 | 72.7 | 35 | 27.3 | 128 | 100 | 5.314 | 0.059 |
| At risk | 2 | 33.3 | 4 | 66.7 | 6 | 100 | | |
| Preventive behavior using condoms | | | | | | | | |
| No | 80 | 72.1 | 31 | 27.9 | 111 | 100 | 1.376 | 0.615 |
| Yes | 15 | 65.2 | 8 | 34.8 | 23 | 100 | | |

## 4. DISCUSSION

**The Relationship BetweenCharacteristics and the Incidence of STIs**

Age was not associated with the incidence of STIs (9), and this is in line with research made by Jendri (10). Age factor can further explain the magnitude of risk for behaviors at risk than as a factor affecting the incidence of STIs directly.

The level of education had a relation with the incidence of STIs, and this is in line with research made by Irene (11). The level of education was essentially influence the decision making process for safe or risky sexual intercourse, it also affects the attitude of awareness about the transmission of STIs and HIV (such as a behavior that is not potentially transmitting and being infected), awareness about the search for help, and the stigma against STIs and HIV.

The marital status of husband and wife was significantly associated with the incidence of STIs, and this is in line with research made by Dachlia (12). Marital status variables could explain the number of sexual partners of the respondents in their lifetime, including whether at risk or not at risk.

Husband's occupation was related to the incidence of STIs. Basically, the occupation is one of the social aspects that can determine patterns of disease to be suffered (9), because the people who work with certain environmental conditions that provide opportunities for sexual contact will increase the risk of infected by STIs (13). The type of a man's occupation does not affect significantly in hiringprostitutes (14). By working, there will be a greater opportunity to meet many people, longer communicating, freedom, and intimacy with colleagues in the workplace, including private matters and it leads to an increased of risky behaviors, such as sexual drives. They are especially those who work in the types of jobs that are at risk to health. A person has *a mental map* of objects, places and activities, so that he / she can get friends who might be asked to have sex with. *Mental map* or *Cogniting map* is the structure of an individual's information about his / her environment. Cogniting map can motivate the behavior. Certain types of work can also affect a person to conduct activities at risk to his / her health, for example inter-city truck drivers are more likely to have sexual relations with prostitutes (15).

The age of having sexual intercourse for the first time was related to the incidence of STIs. Women who have sexual intercourse before the age of 20 years, had a 2.2 times greater risk than women aged 20 years above. Women who have married under the age of 20 years have a higher risk, namely the age 10-14 years (4.8%), age 15-19 years (41.9%) (3; 5; 9). Women who have sexual intercourse in the teenagesare vulnerable because of the normal anatomy of such women is cylindrical that growsextending from the inside of the cervical canal until the meeting point of vagina and cervix. These conditions increase the risk of the bacteria that cause infections in young adult women who are sexually active, coupled with the mukos fluid produced by the cervix and the absence of humoral immunity until the start of the ovulation phase (3; 4; 16; 17).

**The Relationship between Knowledge and the Incidence of STIs**

Most respondents had a good knowledge about methods of HIV transmission, particularly through unsafe sexual intercourse, the using of the same syringe, unsafe blood transfusions, and HIV can be transmitted to the fetus in the womb (during childbirth or breastfeeding). This knowledge is important to note in the prevention of HIV, but in this case it does not have relationship with the incidence of STIs.

Perception of respondents did not have relationship with the incidence of STIs (although respondents having the perception that STIs can be transmitted from mosquito bites is high namely 35%). Perception is information from the sensory organs which is organized and interpreted before it can be understood. Perceptions can be changed by the learning process and notices. The change of perception will change by itself the stigma and attitudes that exist in society against wrong perception.

Comprehensive knowledge about HIV-AIDS was not associated with the incidence of STIs (77.7% of respondents did not use condoms during sexual intercourse, although they knew that they were at risk and by not using a condom could increase the risk of being infected). Even the educational level of men did not affect significantly the hiring of prostitutes (14). Epidemiologists identified that the indifference, lack of knowledge of STI and HIV / AIDS were largely responsible for the spread of STIs and HIV in Indonesia (9). Lack of knowledge and attitude of population groups towarda safe or unsafe sexual behavior becamethe factor of the spread of HIV-AIDS. Knowledge alone can not prevent HIV cases which are today caused by the *windows period* (incidence of current HIV due to the numberof infectionsfrom a few years ago).

**The Relationship between Behaviors and the Incidence of STIs**

The use of condoms did not have relationship with the incidence of STIs. Respondents in this study used a condom when they were already experiencing complaints. The mode of transmission of HIV / AIDS and STI today is through the use of non-sterile needles in injecting drug users and the practice of unprotected sexual intercourse (6, 7, 9). The use of condoms is currently on key population and only 5% in the general population is only 1%. The use of condoms in Indonesia is still 0.9% and this figure is very low compared to other ASEAN countries, such as Thailand and Malaysia (9). The use of condoms is one of the main indicators that reflect the low risk behavior in addition to not having sex, and faithful to the spouse. Condoms have dual functions and can be used as a contraceptive (11; 10).

Behaviors at risk (contact with an infected partner) have relationship with the incidence of STIs. This is in accordance with the theory that one of the risk factors is having a sexual partner who suffer from STIs. Transmission of HIV through heterosexual contact is still in the first position and there is a tendency to increase compared to other methods of transmission. In a research entitled "*Epidemiological and ethnographic research in a wide range of societies"*it is found that women are at risk of HIV and STIs due to their husband has sexual intercourse outside of marriage (9; 18).

Respondents who had sexual intercourse with a partner who is not their legal spouse (having more than one sexual partner for the rest of their life without marriage) have relationship with the incidence of STIs. There are 66.67% of respondents with more than one sexual partner without marriage have complaints of STIs. This group has a risk of 5.3 times larger to get infected by STIs. This is in line with research made by Irene (2005) (11). This variable becomes increasingly important when linked with the use of condoms. That only 3-11% of the adult men use condoms in sexual intercourse, either with his wife or partner who is not his wife (9; 19).

These results acknowledge that behavior is a key factor of the incidence of STIs. A research entitled "*Epidemiology of sexual behavior and sexually transmitted diseases* "states that sexual behavior is a key factor in the development of viruses that cause STIs, HIV AIDS which are transmitted through sexual contact so that care and sexual behavior are very important in reducing the incidence of HIV-AIDS and STIs. The book *Health and Behavior* explains that behavior is the interaction between the biological and behavioral or social factors and how the results of the interaction between the two variables with each other. Not only the psychological factor, or biological factor that influence a person's sexual behavior, there is an important character that can shape behavior (9).

The potentially-infected behaviorshave relationship with the incidence STIs. The potentially-infected behaviors include the use of the same syringe, used razor, tattoos, body piercing. These results have relationship with the number of HIV-AIDS causes at this time and the largest transmission is through syringe (9).

Safe sexual behaviors can prevent STIs and HIV / AIDS. An action that can be carried out is the practicing abstinence (not having sex at all), improving the education of young women, delaying the age of marriage until adulthood, conducting sexual intercourse within marriage, and being faithful to the partner (sexual intercourse with only one partner) (9). One of the efforts that have been made by the government in the prevention and treatment of HIV-AIDS and STIs is theimplementation of the "Public Health Package" based on theGuidance Bookof Administration ofSTIs (4).

If you lose a spouse, then do a valid marriage and sexual intercourse with one partner. If this precautionis still not able to do, use a condom during sexual intercourse. The results of this syndromic-approach study are helpful in breaking the chain of HIV and STIs due to the risk of HIV exacerbated by damage to epithelial tissue / genital mucous membranes although the new incidence of HIV-AIDS and STIs can not be obtained with this flow.

## 5. CONCLUSION

1. The characteristics (level of education, wife's status, husband's status); potentially-infected behavior; and age of having the sexual intercourse for the first time had a relationship with the incidence of STIs.
2. Knowledge had a relationship with the incidence of STIs. In accordance with the OR, there was a relationship between behavioral prevention by the use of condom; the number of sexual partners; comprehensive knowledge of HIV and HIV-AIDS prevention.

## 6. SUGGESTION

1. It is necessary to increase the awareness of the housewives on the incidence of HIV-AIDS, (which is developed through community empowerment, increase in HIV-AIDS prevention efforts in the community, reproductive health volunteers).
2. The active role of the community (health workers) in order to prevent the spread of HIV-AIDS with indicators of supervision and monitoring coverage in a variety of activities on groups at risk.

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