

ORIGINAL ARTICLE

KNOWLEDGE, ATTITUDE AND PRACTICE ABOUT HIV/AIDS AND ITS INFLUENCING FACTORS AMONG PREGNANT MOTHERS IN WEST OF SABAH, MALAYSIA

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ABSTRACT

Pregnant women are at higher risk of transmitting the infections to their foetus. This prompted the "Prevention of Mother to Child Transmission (PMTCT) Program" in Malaysia since 1998. The objective of this cross sectional study was to determine the knowledge, attitude and practice (KAP) of pregnant mothers in the west of Sabah towards HIV/AIDS and its influencing factors. Data were obtained through self administered questionnaires. Results showed that only 32.2% of the respondents have good knowledge compared to 67.8% who had poor knowledge ($p < 0.001$) of HIV/AIDS. Majority of them (56.4%) have good attitude and practice towards HIV/AIDS compared to the remaining poor attitude and practice respondent (44.4%) ($p < 0.001$). Radio/TV (90.2%) and reading materials (83.9%) were the main sources of obtaining information. Main influencing factors for having good knowledge towards HIV/AIDS were women aged < 30 years old, have high education, who perceived on having good knowledge towards HIV/AIDS and received health education from health staffs. Mean while, influencing factors for having good attitude and practice towards HIV/AIDS were women having high education and received health education from health staffs. Therefore, implementation of PMCTC must be reviewed regularly to ensure the program reach its targets.

Key words: HIV/AIDS, mother to child transmission, knowledge, attitude and practice, influencing factors, Malaysia.

INTRODUCTION

HIV/AIDS is one of the major medical and public health problems in the world including Malaysia. The terms HIV and AIDS have been largely understood within the biomedical conceptual framework. It basically refers to the intrusion of a specific virus that is the Human Immunodeficiency Virus (HIV) into the human body and causes the body to lose its natural defence mechanisms¹. The complication that arises from it not only affects the individual but also affects the socioeconomic status of a country². With the increase in the Human Immunodeficiency Virus (HIV) infection among children, Malaysia has established "Prevention of Mother to Child Transmission" (PMTCT) program since 1998³. However less is known about women's understanding of HIV/AIDS, and their attitudes towards HIV. According to WHO report, 39.5 million people have been infected with HIV in 2006. This figure is an increase of 2.6 million (21%) as compared to 2004⁴. By its wide distribution around the world, 3 million people die each year². According to UNICEF, one out of six of the total

death related to HIV/AIDS is represented by children under the age of 15⁵.

According to data from 39 African, Asian and Latin American countries, the level of awareness of HIV/AIDS is generally high⁶. In over half of the countries, 90% of the female populations were noted to have heard of AIDS. In some 3rd world countries, less than one in three ever married women have heard of AIDS. However, awareness grows with the incidence of HIV/AIDS. In countries where HIV prevalence exceeds 5%, awareness has reached at least 90%, whereas, countries with prevalence less than 1%, less than half the female respondents are aware of AIDS⁶. Mean while, radio is noted to be the most important source for information regarding AIDS. A study which was done in Iran found that radio and television are the two most effective source of information followed by reading materials².

Malaysia is labelled as a country with a concentrated epidemic. It is based on the low infection rate among the general population with the prevalence of less than 0.1% based on the

nationwide antenatal screening program¹². Year 2006 statistics showed an increase in the number of infection from three in 1986 to 6,120 in 2005 with an average of 17 people tested positive¹². Percentage of women infected with HIV has also increased dramatically in the recent years from 4% in 1995 to 15% new cases in 2006. Study also showed that there has been increasing number of house-wife tested positive for HIV in 2006 as compared to sex workers. At the same time, the percentage of new case among new born infected with HIV also increased from 0.2% in 1991 to 1.4% in 2006¹³. Sabah is the second largest state in Malaysia. Situated in Borneo and adjacent to Brunei, it consists of 3.06 million populations in 2006. The infection rate in this state has increased from year to year¹⁰, with 85% of these infections were contracted through heterosexual transmissions and 4% through sharing of needles.

Therefore, the main objective of this study was to determine the knowledge, attitude and practice of pregnant mothers in the state of Sabah towards HIV/AIDS and its influencing factors; mainly on demographic characteristics and social history of these women. Opinions and ideas of how to mitigate this problem and curbing the spread of HIV/AIDS were also asked to our respondents.

MATERIALS AND METHOD

Study design and sampling method

This was a cross-sectional study which was carried out at ten antenatal clinics in the west of Sabah from July 1st 2007 to November 30th 2007. The clinics were selected conveniently, namely Luyang, Inanam, Menggatal, Pekan, Tuaran, Papar and Beaufort clinics. Respondents were also chosen selected through convenient sampling.

Sample size

Sample size was calculated by using formula⁸ with reference to prevalence of awareness of coexistence of HIV and pregnancy among pregnant women⁷. After adjusting for non response of 10%, the final sample size required was 220 respondents.

Study instrument

The instrument used was a set of questionnaires designed to assess awareness of the women about HIV/AIDS, evaluate their knowledge of possible transmission, prevention, treatment, and clinical signs. It comprises of 52 questions to assess the respondent's knowledge and 37 questions to assess

their attitude and practice. 17 out the total questions related to knowledge are taken from The HIV-Knowledge Questionnaire: Development and evaluation of a reliable, valid, and practical self-administered questionnaire⁹. The rest of the questions were developed through literature review of relevant studies. Questionnaires for attitude and practice were combined together. Each correctly answered question on knowledge, attitude and practice had 1 score. In addition, the questionnaires also include demographic information such as age, nationality, religion, marital status, occupation, level of education and parity. Respondents were also asked about social history on whether they ever heard of HIV/AIDS, perception of how much knowledge they have, know anybody infected with HIV, had any health education concerning the disease and whether they had experienced any domestic violence. Choices of answers given for these social histories were Yes or No except for perception of how much knowledge, which were Good or Poor.

The questionnaire was pre-tested at Kudat Hospital for comprehensibility, appropriateness of language, sensitivity of questions and average duration of administration. Reliability testing of the questionnaires was done by two public health specialist and Cronbach's alpha of $\alpha=0.75$ for knowledge questionnaires and $\alpha=0.60$ for attitude and practice questionnaires. All patients who attended the government antenatal clinics including the newly booking for antenatal care in the hospital during the study period were listed at the booking visit. The nature of the study was explained to them and consent was obtained. Open question option was given to the respondents in order to ask opinions and ideas of how to mitigate this problem and curbing the spread of HIV/AIDS.

Data analysis

Data was analysed using the SPSS for Windows statistical package version 13.0 which was licensed through the university. For the descriptive analysis, frequency distributions were generated for all categorical variables. Means with standard deviation were determined for quantitative variables. Mean while, t-test was conducted to demonstrate any significant difference between scores of good or poor KAP. Multiple logistic regression was used to control for any potential confounders for good knowledge, attitude and practice about HIV/AIDS. Statistical significance was set at $p < 0.05$.

RESULTS

A total of 220 antenatal mothers who attended the antenatal clinics were approached for this study, however only 205 antenatal mothers agreed to participate in the study, giving response rate of 93.2%. Those who refused to participate were mothers who did not get consent from their spouse, commitment to their family and jobs and feeling of fear. Table 1 showed the demographic and social

history of the respondents. Radio/TV was the main source of information about HIV/AIDS (90.2%) followed by reading material (83.9%) as indicated by Table 2. Only 32.2% of the respondents have good knowledge compared to 67.8% who had poor knowledge ($p < 0.001$); however, more than half of them (56.4%) have good attitude and practice towards HIV/AIDS compared to the remaining poor attitude and practice respondent (44.4%) ($p < 0.001$).

Table 1. Demographic characteristics and social history of respondents (n = 205)

Demographic characteristics and social history	Frequency (n)	Percent (%)
Nationality		
Malaysian	195	95.1
Non-Malaysian	10	4.9
Age (years)		
(mean $\pm$ sd) (27.64 $\pm$ 5.94)		
15-19	16	7.8
20-24	53	25.9
25-29	58	28.3
0-34	48	23.4
≥ 35	30	14.6
Race		
Malays	48	23.4
Chinese	14	6.8
Native Sabahan	134	65.4
Others	9	4.4
Religion		
Islam	140	68.3
Christians	57	27.8
Buddha	6	2.9
Others	2	1.0
No. of children		
Nil	62	30.2
1-4	128	62.4
5-10	15	7.3
Marital status		
Single	1	0.5
Married	203	99.0
Divorced	1	0.5
Education level		
No education	9	4.4
Primary level	29	14.1
Secondary level	140	68.3
Tertiary level	27	13.2

Table 1 (continued)

Demographic characteristics and social history	Frequency (n)	Percent (%)
Occupation	124	60.5
Not working		
Self employed	19	9.3
Private employee	33	16.1
Government employee	29	14.1
Monthly income (RM)		
< 500	132	64.4
500-999	27	13.2
1000-1499	22	10.7
1500-1999	10	4.9
≥2000	14	6.8
Distance to clinic from house (km)		
< 1	28	13.7
1-4	104	50.7
5-9	44	21.5
≥ 10	29	14.1
Transport to clinic		
Walk	27	13.2
Own transport	96	46.8
Public transport	82	40
Ever heard of HIV/AIDS		
No	13	6.3
Yes	192	93.7
Perception on how much knowledge		
Poor	156	76.1
Good	49	23.9
Known anybody with HIV/AIDS		
No	191	93.2
Yes	14	6.8
Received health education from health staffs		
No	77	37.6
Yes	128	62.4
Experienced domestic or sexual violence		
No	178	86.8
Yes	27	13.2

Table 2. Sources of information

Source of information	Frequency (n)	Percent (%)
Radio/TV	185	90.2
Books/Magazine	172	83.9
Health staff	156	76.1
School	128	62.4
Friends	101	49.3
Siblings	76	37.1
Father	62	30.2
Mother	61	29.8
Religious House	50	24.4

Bivariate analysis indicated that for mothers aged < 30 years old ($p=0.016$, prevalence odds ratio [POR]=2.09, 95%CI 1.15-3.80), have high education ($p=0.002$, POR=7.07, 95%CI 2.09-23.94), have permanent job ($p=0.010$, POR=2.28, 95%CI 1.22-4.24), who perceived to have good knowledge

($p=0.047$, POR=3.06, 95%CI 1.02-9.21) and received health education from health staffs ($p<0.001$, POR=1.56 95%CI 1.56-6.07), significantly associated with good knowledge toward HIV/AIDS.

As for good attitude and practice towards HIV/AIDS, only having high level of education ($p<0.001$, POR=6.52, 95%CI 2.81-15.11), received health education from health staffs ($p<0.001$, POR=3.27, 95%CI 1.82-5.90) and never experienced domestic or sexual violence ($p=0.041$, POR=0.42, 95%CI 0.18-0.97) were significant. Upon controlling for confounders (Table 3), only mothers aged < 30 years old, have high education, who perceived to have good knowledge and received health education from health staffs, significantly associated with good knowledge toward HIV/AIDS. As for having good attitude and practice, mothers with high education and received education from health staffs remained significantly associated even though the association is slightly attenuated.

Table 3. Factors influencing good knowledge, attitude and practice toward HIV/AIDS (n=205)

Factor	Beta	Standard Error	Wald	p value	POR (adjusted)	95% CI
Knowledge^a						
Age						
≥30 (referent)						
<30	0.83	0.35	5.75	0.017	2.33	1.16-4.54
Education level						
Low (referent)						
High	1.66	0.65	6.44	0.11	5.24	1.46-18.83
Perception on how much knowledge						
Poor (referent)						
Good	1.37	0.37	13.82	<0.001	3.93	1.91-8.07
Received health education from health staffs						
No (referent)						
Yes	1.00	0.38	6.84	0.009	2.73	1.29-5.78
Constant	-2.77	0.68	16.44	<0.001	0.06	
Attitude and practice^b						
Education level						
Low (referent)						
High	1.61	0.45	12.69	<0.001	4.50	2.06-12.11
Received health education from health staffs						
No (referent)						
Yes	1.05	0.32	10.72	0.001	2.87	1.53-5.39
Constant	-1.66	0.46	12.98	<0.001	0.19	

Backward stepwise (LR) multiple logistic regression applied.

No multicollinearity problem and interaction reported.

^aModel adequacy was checked by using Hosmer and Lemeshow test=0.86, overall correctly classified percentage (72.7%) and area under the curve=0.77. Nagelkerke R Square=0.28.

^bModel adequacy was checked by using Hosmer and Lemeshow test=0.81, overall correctly classified percentage (68.3%) and area under the curve=0.72. Nagelkerke R Square=0.27.

DISCUSSION

The total number of new antenatal visit in 2006 was 51,756 compared to 34,058 in 2005 which shows an increase of 17,698 cases¹⁰. These increases in new antenatal visits were partly due to the fact that there has been an increase in the total number of population in 2006. The response

rate was 95.3% and this is a good response from the mothers willing to participate in the study. Most of the respondents were between 24-29 years of age with the mean age of 28 years old, of low income status which is quite similar to the findings of Barcellos from Brazil¹¹. A total of 30.2% of the respondents were of primigravida status. Almost 50% had initial sex at the age range of 20-24 years

old, 92.2% did it with their now current husbands. As in other study¹², girls who enjoyed sex were usually with their boyfriends that later became their husbands. For those who had intercourse with different partners, majority did not use condoms even though the intercourse was among friends or anyone else. This showed the risk exposed to these women, and if they had been infected would be passed unto their unborn child. a total of 13.2% had experienced some form of sexual/domestic violence before and these groups were more at risk because of previous negative experiences but also risks of HIV that could have occurred without their own knowledge.

A total of 93.2% of the respondents did not know anyone infected with the disease. Mean while, fourteen respondents (6.8%) knew someone infected with HIV and this figure is quite high since the total number of HIV infections in Sabah from 2002-2006 was only 29⁵. More than half of the respondents (62.4%) admitted that they received health education from the health staffs. The question is whether the method used in educating mothers in health centres was adequate or it is just a futile effort of the health staff? This question poses a significant alarm to the health department since PMTCT program had been in place since 1998. The percentage that received health education is relatively low and does not even cover 80% of women population. This is not surprising, as these women were of low risks groups and were not HIV reactive, so most of the counselling devoted to them would also cover other important issues in pregnancy and health related issues as well. Some of these mothers were unable to differentiate between HIV and AIDS, while some assumed that HIV and AIDS are the same. These could be because during health promotion or dissemination, the term HIV/AIDS were used interchangeably, thus creating these confusions. Even some health care personals interviewed could not differentiate HIV apart from AIDS.

A part from this, health education and promotion sessions were usually given just prior the HIV Rapid Test taken. This is not a solitary problem and was confounded by high number of mother attendees to clinics but also due to shortage of nurses and health care workers². Nurses already burdened by attending the high volume of women also provide routine investigations^{8,10}, for example the antenatal blood screening and checking women weight gain and blood pressure. They usually did not receive specific trainings on HIV counselling as

well. These trainings are usually coordinated by the state or national level. Attendees of state/central level trainings were carefully selected, based on name rotations and availabilities of staffs in the clinics as not to jeopardise clinics working services. However, the competencies of trainee nurses in providing health education and promotions may not be a good initiative if they were left on their own to provide counselling as it will need skills and sufficient knowledge on HIV/AIDS. If health educations provided by the trainees were monitored and assessed regularly¹⁰, these activities will be an added investment not only for trainees' confidence building but also to health care development as a whole. In the national PMCTC guidelines, it was not mentioned of at least how many minutes these counselling should be provided.

Majority of our respondents possess good attitude and practice as in other study¹³. Their scores on attitude and perception were higher than the group from the poor attitude and perception. From 205 women, 67.3% of them have discussed with someone on HIV/AIDS to increase knowledge although at very infrequent frequencies. These discussions were usually with their husbands, health care workers and friends. Thus husbands/partners, health care workers must also possess adequate knowledge so as to promote good attitude and practice as well. This was congruent with 76.1% of the respondents perceived that they possess very low HIV/AIDS knowledge. 72.5% felt that they were not ashamed to discuss these issues. 68.3% felt no hatred and in fact sympathizes with infected persons. 65.4% still wants to communicate and keep in touch with HIV infected persons. A high percentage of women would permit to be tested at 85.4%. 82.9% of our respondents had not been HIV tested prior marriage, since only 52.2% had known about this test availability. This reflects that the voluntary counselling and HIV testing (VCT) was not well spread among women that were in the intention of getting married or among already married women. The relationship between a person's knowledge and attitude, perception was significant in this study at $p=0.001$. The full results of women knowledge were not presented in this article. The significant relationship was in concordance with other studies^{2,11}. Radio and TV were the main source of information about HIV/AIDS (90.2%) followed by reading materials (83.9%). Women in this study recommended increased effort to HIV/AIDS related health promotion with the purpose of disseminating

HIV/AIDS knowledge through these sources of information. However, these sources may not be appropriate among other groups in the society¹², e.g. men (husbands) or from other at risk groups such as gays/lesbians/convicts. As one of the source of information was gained from religious houses, religious leaders can play an active role in community based education. A study in Trinidad which involved people living with HIV/AIDS (PWHAs) and religious leaders from various religions indicated that counselling between them was crucial to a successful faith-based HIV/AIDS programme as PHWA was very receptive to such approach¹⁴.

Study limitations

In spite of this interesting result, the study has some limitations. A non-probability sample was employed in this cross-sectional study. This study was also limited by a small sample size relative to the number of attendees to the clinic although it reached the calculated sample size and the geographic location of the clinics which may affect the generalization of results throughout Sabah. Another cross sectional study with a randomly selected respondents and sample size which was calculated with all objectives considered is recommendable to get the prevalence of knowledge, attitude and practice about HIV/AIDS plus its influencing factors.

The study was also conducted in 2007 and many programmes and activities have been conducted since then especially in the area of HIV/AIDS. Therefore the results might differ now but these results can be used as baseline data to conduct a similar study in the near future.

CONCLUSION

As a conclusion, the PMCTC program must be enhanced to ensure that targets of pregnant mothers especially the higher risks were covered by the program. There is an urgent need for HIV prevention efforts to be made especially on health education not only among clients of health care but also among health providers. Health educators should tailor education programs for pregnant women especially those who are at risk, particularly those with lower education level, to enhance their knowledge about HIV and to improve their attitude and practice towards HIV/AIDS

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