

Social and HIV/AIDS Risk Behaviours in a Fishing Community

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Abstract

Background: *This study was to explore the pattern and depth of social and health risk problems that may address the social drivers of HIV/AIDS in a fishing community in the East Coast of Peninsular Malaysia.*

Methods: *Five focus group discussions were held among selected villagers to gain their experiences and perception on social problems and HIV/AIDS risk behaviours in their community.*

Results: *Many participants discussed on early involvement in substance use disorders and high risk sexual behaviours. Participants were frustrated with the poor parental supervision and lack of social support in the community which exposed them to social problems and subsequently to risk of HIV/AIDS infections.*

Conclusion: *Poor parental supervision and lack of social support from the community are factors need to be considered when designing structural intervention programme. Further research needs to be done among more specific target groups in villages like youths, parents and school children, in order to identify the causal chains of deeper structure of HIV/AIDS risk for proximal and distal risk factors intervention.*

Keywords: *HIV/AIDS; social; sexual risk behaviours, substance abuse, community support*

Introduction

Fishermen were identified as one of the groups that are at high risk of contracting HIV/AIDS infection, and were also noted to have high HIV/AIDS prevalence in some parts of the world¹⁻⁴. As these fishermen worked under difficult condition, they engaged in heavy drinking, visiting brothels, were intravenous drug and other substance user⁵. A study by Acragolu⁶ found that Turkish mariner's travellers had high risk behaviours and fall into one of the top-priority population who need education on HIV/AIDS. There are specific localities in Malaysia where the prevalence of HIV/AIDS is higher compared to others. Fishermen were found to be the high risk group of contracting HIV/AIDS, who contributed to 3,098 HIV infections since 1986 in Malaysia⁷. Gathering contextual data of social phenomena related to HIV/AIDS in the community is important for further understanding their risk behaviour⁸. People live in a variety of social context and it is important to expand the scope of HIV prevention education that includes contextual intervention. Identifying the key behavioural patterns and social drivers of HIV/AIDS for the target population is a crucial step in designing intervention programme⁹. The combination of quantitative and qualitative approaches is essential for research areas that address complex, understudied or novel problems¹⁰. Researchers have conducted a quantitative and qualitative study focused on social problems and HIV/AIDS risk behaviours of fishermen in the East Coast, peninsular Malaysia.

A quantitative study on knowledge and attitude on HIV/AIDS in this community has been published elsewhere¹¹. The village covers 450 hectares of land used mainly for residency and a small fraction is allocated for agriculture. The total population is approximately 3000, consisting of almost equal number of male and female population. Majority of the villagers are related to fishing. The major ethnic group was Malays and a small number of Chinese. Some were working either with the government or private companies in industrial sectors or businesses. The researchers chose the village because of its high social problems in the community and high prevalence of HIV/AIDS based on the statistics provided by the district health office. Grounded theory analysis of HIV/AIDS qualitative research from various research data can be categorized into lifestyles, risk, sensitive issues, attitudes, formative evaluation and process evaluation⁸. This study however, does not focus on any of those categories but looking at them as a whole. This is a preliminary descriptive study on experiences and perceptions of respondents on the social risk behaviour of the villagers in order to identify more specific target group for further research and structural intervention programme.

Methods

The study was approved by International Islamic University Malaysia (IIUM) Ethics Committee board. Focus group discussions (FGD) were the main method of data collection, allowing the participants to express their views and experiences¹². The research was conducted from September 2007 to April 2008. There were lapsed periods between each FGD due to time required to gather participants. The head of village of the community was the gate-keeper that contacted and engaged the target populations in the study. Participants were chosen through purposive sampling and the selection of the participants was based on criteria predetermined by the researchers. Among the criteria used were that the villagers should be able to give relevant, best information about the villager's social problems and HIV/AIDS infections. They were then, informed about the date, time and venue of the discussion session. Participants were then divided into 4 groups according to the age bracket and gender to ensure a free flow discussion and more cultural accepted by the participants especially related to sexual practice and social activities in the community. The two age brackets were 18 to 25 and 26 to 45 years.

Four FGD sessions and one key informants' interview were held in a small room in the village. Each FGD consisted of 6-9 participants. The fifth FGD was decided only after the first four FGDs had been analysed. We felt the need of information from key informants who were responsible for social and security of the community. Discussion sessions were audiotaped with the permission of the participants. The facilitator explained the purpose of discussions and reassured on the confidentiality and written consent was taken. Participants and the facilitators were sat in a circle. Each session lasted for 45 minutes to one hour. Two facilitators conducted all the FGDs. All interviews were in the local language, Malay. For consistency of questions delivered to all participants, a set of semi structured open ended questions were employed. The set of questions were 'what are the social problems in your community?', 'Do you think that the social problems are related to HIV/AIDS infection?' and 'What and how are the factors drives to social and HIV/AIDS problems in your village?' Refreshments were provided at the end of the sessions. Audiotapes were transcribed per verbatim and independently coded by 2 raters for major content domains.

Statements were organized into major themes, and representative quotes facilitated conceptual description of the participant responses. Statements were used to convey the pattern of responses only if a theme was expressed by more than one participants, and in more than one group¹³. The contents were translated into English for publication purposes.

Results

The total numbers of participants was 35. The first 4 groups engaged 26 respondents of equal number of males and females. Their age ranged from 19 to 43 years. The majority of male participants were fisherman (n=11), one owned fish products related business and one unemployed. All females were housewives except one who sold fish products. Most of the respondents had only primary school education. The fifth group of FGD involved key personals comprised of 9 participants. There were five males and four females consisting of 3 village committee members, two teachers, a community nurse, a health inspector and two volunteer workers. Their ages ranged from 27 to 59 years. The key informant group is relatively better educated with either high school or college level of education. Two researchers transcribed the focus group discussions and produced several themes. To depict the general content of the discussions, the researchers compared the analyzed data, later modified, redefined, grouped and came to a consensus on appropriate themes. The themes were i) scenario of substance use ii) sexual risk behaviors iii) the role of parental and iv) community social support.

Scenario of Substances Use

All the 5 groups discussed on the issue of substance abuse in length. The discussions were on the type of substance use, related community groups, the trend, severity and the availability of the substances. A few of the participants had personal experience with substance use while others had their family members or neighbours who were involved in substance use. Smoking habit among children was discussed by both female and male groups. Smoking habit was observed across age groups from still schooling children to adults. One of the participants said that the youngest smoker that she knew was a standard 2 child. Peer pressure and influence were the factors that pushed them to start smoking. School children used their school pocket money to buy cigarettes. One of the male participant said, "The shops should only sell cigarette to 18 years and above, but here the shops can sell it to everybody freely . . . The child will not say that the cigarette is for him, but for his father."

Alcohol consumption was another area of concern voiced by the participants. Alcohol was consumed¹ openly. Drinking by adolescents and young fishermen took place at the time when they were on land and not going for fishing. Fishermen used their hard earned money to buy alcohol.

"Sometimes, the primary school children drank in front of the public without feeling of embarrassed. They think they were just children. Yeah . . . they will never respond to our advice because they were drunk. Pity the children. They will come into the village after they had done satisfactorily at the beach." (Female)

Alcohol can be bought easily from a nearby grocery shop. The selling and buying of alcohol continues because there was no proper monitoring.

Glue sniffing was another substance abuse that was discussed extensively by majority of the participants. One of the respondents said that a 7- year old child that he knew was involved with glue sniffing. A male respondent admitted that he was a glue sniffer since in primary school, and he had many friends sniffing glue with him. A female adolescent 'enthusiastically' described the scenario of glue sniffing in the village.

"They sniff glue along the road openly. They even sniff glue while riding on the motorbike. We don't really know how to control them . . . One tin of glue cost about RM4. They will share among themselves . . . Now, he is not selling in a tin because of quite costly for them. He sells in a smaller plastic bag which cost RM1 per plastic bag."

Another product that is used by the villagers is a local plant called *ketum* leaves. *Ketum* plant is grown naturally. Traditionally, *ketum* leaves drink is used as medicine for body and backache. Fishermen drank this to make them more energetic and enable them to perform their works more efficiently.

¹ The majority of the people who are involved in substance abuse are Malays who are also Muslims. Alcohol drinking is prohibited among the Muslims.

Excessive drinking of ketum leaves make the person drowsy, sleepy and addicted. It is easily available and a few villagers generate income through selling the leaves. The leaves are boiled and packed for sale to the villagers.

Previously, sharing of needles was the main reason for the high prevalence of HIV infection. According to the male participants the incidence had reduced in the last couple of years due to two reasons. First reason is the shortage of supply of injectable heroin. The second reason is the availability of volunteers from Non-Governmental Agency that run the needle exchange programme.

“Now, there is no more heroin. Now the hospital provides methadone. We use only methadone . . .”
“We no longer use needles. We can be cleansed. But the distribution should be limited and not too freely distributed. At least we have support.” (Male)

Sexual Risk behaviors

Promiscuity and multiple sex partners were two highlighted problems by the four groups but not by the key informants. The practice of having multiple sex partners were common among the young girls and boys who involved in illegal activities of motorcycle racing. The boys who participated in such racing activities are called *mat rempit*². A young girl is given as gift to the winner of the race for sex and she is called *bohsia*³. Boys involved in free sex is called *bohjan*⁴. A male participant said, “I think that the youngster of the village who were not using needles...were bohsia or bohjan, they have HIV, because they died of HIV or AIDS.” Mat rempit, bohsia, and bohjan mostly are all local villagers although some were factory workers near the village. The majority of local girls were secondary school children. Adolescent as young as 15 years old were involved in sexual activities. Consumption of alcohol was closely associated with such motorcycle racing and sexual activities. They drank prior to motor racing followed by sexual activities.

“Bohsia and mat rempit have their projects at night along the road. The bohsia has free sex. Sometimes the condition was very bad that one female was engaged in sex with seven males . . . Sometimes the prize for an illegal motorbike racing was one or two bohsia.” (Male)

The women discussed about their husbands. The men went to the nearby town during monsoon seasons, when they were not fishing. They leave the village for about a week for promiscuous activities. A statement from one of the women participants, “People here, they will go to the sea near the town. They visit prostitutes in the town and then they will bring the disease back to the village”. Key informants group gave limited information on the issue of mat rempit, bohjan and bohsia. However, areas of greater concern are substance abuse by youngsters who started sniffing glue and alcohol consumption at a young age. The common issue which was in agreement by all the participants was that the all problems identified were less noticeable among the girls. The majority of the drug users and HIV infected person were males.

The Role of Parents

All the five groups discussed about the attitude of parents towards supervision of children and adolescent. The discussion was longer among females. Parents had ignored guiding their children and adolescent while they grew up. As such the children were later trapped into immoral activities. Some women discussed that school children can earn money easily by cleaning fish and selling fish crackers. The money expenditure was not monitored by the parents and was used to buy drugs, glue, cigarette and alcohol.

“There is no monitoring. Parents did not take care of their virgin daughters. They did not care, when their children went out and came back at twelve midnight or one o’clock in the morning, not even want to know what their children were doing.” (Female)

Parent’s ignorance on the importance of education was discussed by all the groups. Some children were not schooling because of their parents cannot afford to send them but mostly it was because of they were lazy and lacked of motivation.

2. This is a term given by Malaysian to young boys who take part in illegal motor racing. The motorbikes are modified and plate numbers are sometime removed or changed to avoid police arrest.

3. ‘Bohsia’ and ‘bohjan’ are another terms given to a group of adolescents who are associated with high risk sexual behaviour. Bohsia is a female and bohjan is a male adolescent that practice free sex actively.

A woman said that parents will never motivate their children to study. Some parents actually thought that sending children to the school is a waste of money.

Community Support

Male participants stressed on the lack of support from committee members of the village in arresting negative behaviours. The respondents claimed that neighbors and committee members of the village do not monitor children and adolescent activities. There was no monitoring on bohsia and bohjan activities. A male participant said, "Bohjan and bohsia activities have no monitoring. The villagers can't be bothered; your problems are your business".

Most of the participants commented on the lack of sport activities for the youth of the village. Many of the participants wished community members can organize sports activities regularly. Female participants believed that sports will prevent adolescents from becoming substance abusers. From the participants' observation, sports activities involved group of villagers without welcoming drug abusers. Drug abusers wished there were sport activities specially organized for them. One of the adolescent female participant said, "...sports activities are rarely conducted due to lack of funds".

"Sports was dead already. Youth organization is not alive, exist in name only . . . in the 90's, sports like football and water sports were active in the village. However, currently, there are no more sports in the village. The youngsters have nothing to do in the evening." (Male)

A few male participants claimed that, the mosque committee members played minimal role in preventing and controlling negative behaviors in the village. They said that these members were not particularly interested conducting activities for the villagers. One of the male adolescent said in frustration, "They can't be bothered with the bohsia issues, they performed worship for themselves, they can't be bothered with other people's children and they only know how to worship God" The participants also suggested that the religious peoples should give special talk and provide encouragement for drug addict, bohsia, bohjan and mat rempit to become part of the mosque group. The current sermons given in the mosque does not interest drugs addicts. On the other hand, the female participants stated that drug addicts will never attend educational talks because villagers see them negatively. "There are no mosque committee members trying to gather them to give talks on drugs' awareness programme . . . If possible try to conduct a special class for the drug users".

Discussion

Findings from this qualitative study is valuable in assessing the depth and span of the problems particularly when examining and teasing out the nuance of behaviour, such as drug injecting and sexual practices¹⁴. This study highlighted the obvious specific group that is involved in social problems and HIV/AIDS risk behaviours like substance use disorders and free sexual practice by the bohsia, bohjan and mat rempit. This statement is in agreement with findings from a other quantitative study which concluded that young population and fishermen are the top-priority population to whom education on HIV/AIDS should be given¹¹. These adolescent and young adult are inquisitive individuals who like to experience new things including drug use and sexual activities¹⁵⁻¹⁸. They are in their mental and social development stage and acted spontaneously on their impulse¹⁹.

Substance use disorders and early sexual intercourse among young adolescent, particularly male are the possible thrusting factors towards high incidence of HIV infections in this community. Many villagers believed that the incidence of HIV infections in this community mainly of drug abusers followed by those who practiced free sex¹¹. High risk sexual behaviours is shown to be prevalent among smokers²⁰⁻²², alcoholics^{22,23} and drug users^{22,24}. Some research findings show association between smoking²⁵ and alcohol²⁶ with HIV infection. In this study, only the married female discussed about the sexual activity of fishermen outside the village during the rainy season, when they were not going for sea fishing. Because of the mobility in nature of their work, fishermen are easily engaged with prostitutes and had casual sex^{27,28}. Participants stated about the poor parental support on their children's formal education. Many of the out-of school children were involved in glue sniffing and alcohol abuse. Out-of-school children were associated with substance abuse and high risk sexual behaviours which lead them to HIV infection²⁹. A study showed that out-of-school adolescents were significantly more likely than in-school adolescents to smoke cigarettes (33.7%-57.7% versus 20.4%-50.9%), used alcohol (62.9% versus 55.2%), marijuana (31.4% versus 15.9%), or cocaine (7.1% versus 2.1%) respectively²⁹.

Another study showed that out-school adolescents at aged 14-19 were more likely to engage in sexual intercourse activities than in-school adolescents³⁰. Parental involvement and spiritual needs are part of supports system identified by studies in HIV infection prevention^{18,26,31}. All participants discussed on the poor parental supervision of the children and adolescent. Parental guidance has a great effect on the reduction of risk behaviour such as smoking³²⁻³⁴ and drug addiction^{32,35} in young adolescents. Parenting skills and parental communication on sexual health is an important determinant of adolescent sexual behaviour³⁶⁻³⁸. In the present study, participants conversed a lot about the poor community role in handling social and HIV/AIDS problems in the village. They stated that committee members, adolescent society and religious leaders of the village have ignored individuals with social problems. Religious activities were not attended by drug users and HIV/AIDS infected person. Internalising what religious text has said about the sinful behaviour, people with high risk behaviours remain marginalised, unreached by information and education campaigns³⁹. Religion has shown to be associated with lower HIV/AIDS risk behaviours^{18,38}. Therefore, special and more attractive approach are proposed by the participants to get the risk groups involve in religious and healthy social activities.

Strengthening social capital through structural intervention programme may be important in preventing the spread of HIV/AIDS in this community. For example, programme that is not specifically designed for HIV/AIDS infection but to strengthen family functions has the potential to change the social dynamics that promote HIV risk behavior in communities⁴⁰. In conclusion, there are many social drivers of HIV/AIDS in the community like parental and community roles which need to be considered when designing structural intervention programme. Further research should be conducted among more specific target group of the villagers like the youth, parents and school children to identify the causal chains of deeper structure to HIV/AIDS risk factors for proximal and distal risk factors intervention.

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REFERENCES

- Entz AT, Ruffolo VP, Chinveschakitvanich V, Soskolne V, & van Griensven GJP. HIV-1 prevalence, HIV-1 subtypes and risk factors among fishermen in the Gulf of Thailand and the Andaman Sea *AIDS* 2000; **14**: 1027-1034
- Samnang P, Leng HB, Kim A, Canchola A, Moss A, Mandel J et al. HIV prevalence and risk factors among fishermen in Sihanouk Ville Cambodia *International Journal of STD & AIDS* 2004; **15**: 479-483
- Kissling E; Allison EH; Seeley JA, Russell S, Bachmann M, Musgrave SD. et al. Fisherfolk are among groups most at risk of HIV: Cross-country analysis of prevalence and numbers infected *AID* 2005; **19(17)**: 1939-1194.
- Westaway E, Seeley J & Allison E. Feckless and reckless or forbearing and resourceful? Looking behind the stereotypes of HIV and AIDS in "fishing communities" *Afr. Aff. (Lond)* 2007; **106**: 663-679.
- Paul S. Fishermen and HIV/AIDS vulnerability in Southeast Asia *Int Conf AIDS* 1998; **12**: 456 (abstract no. 23573). Available from: <http://gateway.nlm.nih.gov/MeetingAbstracts/ma?f=102229200.html>
- Acaroglu R. Knowledge and attitudes of mariners about AIDS in Turkey *Journal of the Association of Nurses in AIDS Care* 2007; **18(1)**: 48-55.
- MOH. *The AIDS/STD section Disease Control Division*. In: Annual Report, Ministry of Health Malaysia 2008.
- Power R. The application of qualitative research methods to the study of sexually transmitted infections: *Sex Transm Infect* 2002; **78**: 87-89
- Auerbach JD, Parkhurst JO, Caceres CF, Keller KE, Addressing social drivers of HIV/AIDS- some conceptual, methodological and evidentiary consideration; AIDS 2031-AIDS working paper N0.24, CHAMP Strategy lab teleconference, London School of Hygiene and Tropical Medicine; Sept 2009. Available from: <http://media.champnetwork.org/2009/09-September/2009-09-23.StrategyLab/Social.Drivers.presentation.pdf>
- Dennis ML, Fetterman DM, Sechrest L. Intergrating qualitative and quantitative evaluations methods in substance abuse research *Evaluation and Program Planning* 1994; **17**: 419-427
- Niza S, Ab Rahman J, Uddin Akhtar SF, Alwi M. Knowledge and attitude on HIV/AIDS of a fishing community *International Medical Journal* 2010; **16(4)**: 251-256,
- Kitzinger J, Qualitative Research: Introducing focus groups *BMJ* 1995; **311**: 299-302
- O'Brien K, Using focus groups to develop health surveys: An example from research on social relationships and AIDS-preventive behaviour *Health Education Quarterly* 1993; **20**: 361-372.

14. Power R. The role of qualitative research in HIV/AIDS *AIDS* 1998; **12**: 687–695.
15. Rwenge M. Sexual risk behaviors among young people in Bomenda, Cameroon *International Family Planning Perspectives* 2000; **26(3)**: 118-123
16. Aggleton P & Kapila M. Young people, HIV/AIDS and the promotion of sexual health *Health Promotion International* 1993; **7(1)**: 45-51.
17. Crosby RA, Yaber WL, DiClemene RJ., Wingood GM, & Meyerson B. HIV-associated histories, perceptions, and practices among low income African American women: Does rural residence matter? *American Journal of Public Health* 2000; **92(4)**: 655-659.
18. Trinitapoli J & Regnerus MD. Religion and HIV risk behaviors among married men: Initial results from a study in Rural Sub-Saharan Africa *Journal for the Scientific Study of Religion* 2006; **45(4)**: 505-528
19. Kann L, Kinchen SA., Williams BI, Ross JG, Lowry R, Grunbaum JA. et al. Youth risk behaviour surveillance in United States *Journal of School Health* 1999; **70(7)**: 271
20. Staton M, Leukefeld C, Logan T, Zimmerman R, Lynam D, Milich R et al. Risky sex behavior and substance use among young adults *Health & Social Work* 1999; **24(2)**.
21. Halsey NA, Coberly JS, Holt E, Coreil J, Kissinger P, Moulton LH et al. (1992). Sexual behavior, smoking, and HIV-1 infection in Haitian Women *JAMA* 1992; **267**: 2062-2066.
22. Zabin LS. The association between smoking and sexual behavior among teens in United States contraceptive clinics *Am J Public Health* 1984; **74**: 261–263.
23. Edgardh K. Sexual behaviour in a low-income high school setting in Stockholm. *Int J STD AIDS* 2002; **13**: 160-167.
24. Haque N, Zafar T, Brahmabhatt H, Imam G, Ul Hassan & S. Strathdee SA. High-risk sexual behaviours among drug users in Pakistan: Implications for prevention of STDs and HIV/AIDS. *International Journal of STD & AIDS* 2004; **15(9)**: 601-607.
25. Sopheab H, Fylkesnes K, Philos V, Mean C & O'Farrell N. Measuring adolescent sexual behaviors and related health outcomes. *Public Health Rep.* 2006a; 108(suppl):31-6.
26. Mbulaiteye SM, Ruberantwari JS, Nakiyingi, Carpenter LM, Kamali A & Whitworth JAG. (2000). Alcohol and HIV: a study among sexually active adults in rural southwest Uganda *Int. J. Epidemiol* 2000; **29**: 911-915.
27. Sopheab H, Fylkesnes K, Philos V, Mean C & O'Farrell N. HIV-related risk behaviors in Cambodia and effects of mobility. *J Acquir Immune Defic Syndr* 2006b; **41**: 81–86.
28. Chiang, R. (1999). Population movement and HIV vulnerability in South East Asia: An assessment and analysis. UNDP South East Asia HIV and development project workshop on population movement and HIV vulnerability, Thailand. Available from:
<http://www2.unescobkk.org/hiv aids/FullTextDB/aspUploadFiles/Population%20Movement.doc>.
29. Morris L, Warren CW, Aral SO. Measuring adolescent sexual behaviors and related health outcomes. *Public Health Rep* 1993; 108(suppl): 31-6.
30. CDC United States. Health risk behaviors among adolescents who do and do not attend school. *CDC United States*. 1994; **43(08)**:129-132. Available from:
<http://www.cdc.gov/hiv/resources/reports/mmwr/1994.htm>
31. Chin JJ., Mantell J, Weiss L, Bhagavan M & Luo X. Chinese and South Asian religious institutions and HIV prevention in New York City. *AIDS education and prevention* 2005; **17(5)**: 484.
32. Romer D, Stanton B, Galbraith J, Feigelman S, Black MM & Li X. Parental influence on adolescent sexual behavior in high-poverty Settings. *Arch Pediatr Adolesc Med* 1999; **153**: 1055 - 1062.
33. Greenlund, KJ, Kiang L, Kiefe CI, Yunis C, Dyer AR & Burke GL. Impact of father's education and parental smoking status on smoking behavior in young adults: The CARDIA study. *Am. J. Epidemiol* 1995; **142**: 1029–1033.
34. Kestilä L, Koskinen S, Martelin T, Rahkonen O, Pensola T, Pirkola S. et al. Influence of parental education, childhood adversities, and current living conditions on daily smoking in early adulthood. *Eur J Public Health* 2006; **16**: 617-626.
35. Nelson BV, Patience TH & MacDonald DC. Adolescent risk behavior and the influence of parents and education. *J Am Board Fam Pract* 1999; **12**: 436.
36. Henrich CC, Kathryn AB, Lydia AS & Golan S. Supportive relationships and sexual risk behavior in adolescence: An ecological–transactional approach. *J. Pediatr. Psychol* 2006; **31**: 286-297.
37. Lenciauskiene I & Zaborskis A. The effects of family structure, parent—child relationship and parental monitoring on early sexual behaviour among adolescents in nine European countries. *Scand J Public Health* 2008; **36**: 607 - 618.
38. Gray PB. HIV and Islam: Is HIV prevalence lower among Muslim? *Social science and Medicine* 2004; **58**: 1751-1756.
39. Health Action Information Network Philippines. AIDS Action: Religion and HIV/AIDS. The International Newsletter on HIV/AIDS prevention and care, Issues 47. Asia Pacific edition 2000. Available from: http://www.hain.org/?page_id=28
40. Fullilove RE, Green L, Fullilove MT. The Family to Family program: a structural intervention with implications for the prevention of HIV/AIDS and other community epidemics. *AIDS*. 2000 Jun;14 Suppl 1: S63-7.