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HIV/AIDS in Thailand: A Comparison with Young Adults**

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**Knowledge and Attitudes of Older People about HIV/AIDS in Thailand:  
A Comparison with Young Adults**

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## **ABSTRACT**

Levels of AIDS related knowledge are widely assumed to be high in Thailand, a country with the probably the most effective response to the HIV/AIDS pandemic to date in the developing world. But efforts to verify these levels are sparse in recent years, and very little attention has ever been paid to AIDS knowledge and attitudes among the Thai older population. Since many Thai older persons (age 50 and over) remain sexually active late in life, and since many more will be involved in interactions with and care taking of young adult persons suffering from AIDS, we explore AIDS knowledge and attitudinal data we collected during 1999 from a sample of 773 older Thais from four provinces and Bangkok. The sample provinces were chosen in part to represent different levels of HIV/AIDS prevalence by Thai standards, ranging from high to low. We compare the results with data from a sample of 398 young adults using the same questionnaire, collected at the same sites, at the same time (total  $N = 1170$ ). We find, as previous studies have indicated, an overall high level of awareness about AIDS, but identify important deficiencies among both the young adults and especially among the older Thais. Implications of the findings are discussed.

## INTRODUCTION

Surveys of knowledge, attitudes, and practices (KAP) are a common strategy for collecting information about the covariates of risk taking among populations at high risk of HIV/AIDS. For example, surveys of what young men know about the risks of unprotected sex, their attitudes about condoms, and their specific sexual activities can lead to critical insights for programs that seek to reduce the spread of HIV within a broader population.

What can be gained from a KAP survey of older persons? Even though older adults have much lower risks of contracting HIV than young adults, their levels of knowledge about how the disease is (and is not) spread and what they know about the consequences of infection have important implications for both the older persons themselves, persons with AIDS (PWAs) and their survivors with whom the older person will come in contact, and the communities within which these older persons live. The views of Thai older persons on AIDS is an important topic to study since in Thailand, as elsewhere in the developing world, older persons could become involved with care giving activities for young adult PWAs. In fact, other data collected as part of this project show that two-thirds of adults who died of AIDS lived with or next to a parent by the terminal stage of illness and a parent, usually the mother, acted as the main caregiver for about half. Moreover, for 70 percent of our cases in the related study, a parent or other older generation relative provided at least some care. The vast majority of these parents and relatives were age 50 or more and many were in their 60s and even 70s (Knodel et al. 2000). It is important that older persons have correct knowledge about any risks to themselves inherent in these care giving activities, including risks of contagion from common opportunistic infections such as TB that PWAs often suffer from, and how to minimize such risks. Older persons should also know about how one does *not* contract AIDS so that an older person living with a young adult PWA does not worry unnecessarily about contagion and perhaps unnecessarily avoid interaction with their infected child. The knowledge and attitudes of older persons regarding AIDS is also important because older persons are often respected opinion leaders within families and communities, and are likely to influence others' attitudes and behaviors regarding AIDS and PWAs. Peruga and Celentano (1993) found that low level of knowledge about AIDS is associated with restrictive attitudes towards PWAs. Finally, since many older persons remain sexually active late in life (Knodel and Chayovan 2000) and some may engage in risky sexual practices themselves, it is important to know to what extent the older population has adequate information to assess these risks to themselves.

### The Thai AIDS epidemic

Thailand is experiencing a serious AIDS epidemic with prevalence levels much higher than those found in the United States, but much lower than those found in the hardest hit African countries.<sup>1</sup> Careful and extensive surveillance of cases since the onset has resulted in the Thai AIDS epidemic being one of the best documented in the world (World Bank 2000). The earliest groups to suffer widespread infection were intravenous drug users and commercial sex workers. Until recently, many of the men who patronized these sex workers did so without the protection that condom use provides, and the virus rapidly spread among young men. From there, many of these HIV-positive men went on to infect women not involved in the commercial sex trade, i.e., their wives and girlfriends (Brown et al. 1994; Weniger et al. 1991). According to preliminary results from the 2000 HIV/AIDS Projections, out of 61.3 millions population, 984,000 adults and children have been infected with HIV in Thailand since the start of the epidemic and 289,000 of these people have subsequently died of AIDS (The Thai Working Group on HIV/AIDS Projection 2000).

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<sup>1</sup> Hereafter we refer to the HIV/AIDS epidemic as the AIDS epidemic. For current infection rates for Thailand and other countries, contact the website for UNAIDS: [www.unaids.org](http://www.unaids.org).

While exact numbers and projection trends are subject to contention, it is generally agreed that incidence has peaked and will continue to decline for the foreseeable future. This is due in part to the success of Thailand's efforts to implement a 100% condom policy for commercial sex transactions (Chamrathirong et al. 1999), and by aggressive treatment of other sexually transmitted diseases that facilitate the spread of HIV (Hananberg et al. 1994). Increasing fears among young men about the dangers of commercial sex patronage has also undoubtedly played a major role (VanLandingham and Trujillo 2000; UNAIDS 1998b; UNAIDS 1998c; Mills et al. 1998; Knodel et al. 1996).

Infection rates vary widely by region, and are highest in the northern part of the country, followed by the eastern seaboard. HIV prevalence rates among pregnant women have ranged from over 10% in some northern provinces to less than 1% in some central, northeastern, and southern provinces.<sup>2</sup> Prevalence levels along the southeastern seaboard have risen rapidly in recent years and are now intermediate in level (UNAIDS 1998a; UNAIDS 2000).

### **KAP studies of the Thai Population**

Several studies have documented levels of AIDS-related knowledge among young Thai adults. VanLandingham et al. (1997) found in their study of men living in the northern urban center of Chiang Mai during the early part of the epidemic (the data were collected in 1991) that nearly everyone had heard of AIDS, that most answered questions about transmission and consequences correctly, but that important deficiencies about some specific aspects of the virus and disease were common among men having the least privileged backgrounds.<sup>3</sup> For example, less than half of the laborers in the sample knew that persons infected with HIV could be asymptomatic; only about 2/3 knew that AIDS was incurable; just over half thought that urinating after intercourse was an effective means of avoiding infection; and over a quarter felt that engaging in commercial sex without condoms was safe if the brothel was clean. AIDS related knowledge was highest among men attending university. Most importantly, they found that key dimensions of AIDS-related knowledge (knowledge about contagion and knowledge about how to avoid the virus) were strongly correlated with sexual risk taking behavior. Knodel et al. (1997) using national data collected in 1993 also found generally high levels of AIDS knowledge among married Thai women and men, but some deficiencies in the Malay speaking provinces of the lower south. Maticka-Tyndale et al. (1994) found that general knowledge levels among women living in northeastern Thailand were quite high, but that the women in the study did not consider themselves at risk of contracting HIV if their husbands visited commercial sex workers. Overall levels of knowledge and concerns about AIDS in the Thai population have probably increased even further due to continued intensive and extensive education efforts by the Thai government and other organizations, but a search of the social science and AIDS literature turned up no surveys of KAP among general populations of young Thai adults conducted during the past five years. Up to date data are needed to assess whether gaps remain in AIDS knowledge among some groups of young Thai adults.

More importantly for the purposes of this report, nearly all AIDS educational efforts in Thailand have been directed at young adults and adolescents, since these are the groups considered to be at highest risk for contracting HIV. Little is known about levels of AIDS knowledge among older adults, especially in Thailand and other high prevalence developing countries. In the U.S., LeBlanc (1993) reports lower levels of AIDS knowledge among older persons compared to young adults. Levy and Albrecht (1989), drawing upon the National Health Interview Survey's initial efforts (i.e., the first month of collected data)

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<sup>2</sup> The median infection level among sites where pregnant women were tested was 1.3% for sites in Bangkok and 1.7% for sites outside of Bangkok in 1997 (UNAIDS 2000). Mortality statistics show a marked increase in the age-specific-death rates of adult men between 1990-1996. The death rate for men age 25-29 has increased most significantly in the North region and this increase is due to AIDS (Im-em 1999).

<sup>3</sup> LeBlanc (1993) has also found an association between low socioeconomic status and levels of AIDS knowledge in the U.S.

to document levels of AIDS knowledge in the general population, report that older Americans appear more likely than young adults to be concerned about the risks of casual contact and less likely to be well informed about the efficacy of condoms for preventing transmission. Rose (1995) in another U.S. based study reports that older persons understand the seriousness of the disease but do not see themselves at risk. Similarly, Yates et al. (1999) in a fairly privileged sample of U.S. residents find that older respondents are well informed about transmission risks but less so about their own risk status.

These studies provide some insight into the level of AIDS knowledge and awareness among older adults relative to younger adults in the U.S. context, but the relevance of the findings for older persons in Thailand and elsewhere is very limited. Because of higher levels of prevalence and greater media attention to HIV and AIDS, older persons in Thailand may be more likely to have had personal contact with a person infected with HIV, may have been exposed to more information about HIV, and are much more likely to be involved with care taking than older persons in the U.S.<sup>4</sup> Also, it is quite possible that the opinion and attitudes of older persons regarding AIDS and PWAs in developing country communities are more highly valued and influential than is the case in the west. Finally, the degree of risk older persons face from normative sexual practices is likely quite different in high prevalence developing countries than it is in the U.S. or other countries where research about older persons and AIDS is a bit more extensive.

The KAP results presented here are one aspect of a broader study of the various impacts of AIDS upon the Thai older population. An overview of the entire project can be found in VanLandingham et al. (2000). In order to assess the needs of older populations facing the effects of AIDS, an evaluation of their degree of familiarity with the causes and consequences of the disease is essential. Specifically, the results reported here will help evaluate the following issues:

- Are older persons unnecessarily fearful of the risks of casual contact with PWAs?
- Do older persons put themselves at risk of infection during care giving?
- Do older persons purchase expensive and ineffective medicines and treatments for their children infected with HIV because of inaccurate understandings about AIDS?
- Do older persons have the knowledge base necessary to access community resources and be able to cope with community reaction in their local areas?
- Will older persons contribute to or detract from community acceptance of PWAs and their families?
- Will older persons be able to protect themselves from infection from risky sexual practices?
- Are some groups of older persons less well informed than others?

## **DATA AND METHODS**

### **Site selection**

Study sites included Chiang Mai, Khon Kaen, Rayong, Petchburi and Bangkok (see Table 1). These sites were chosen to include a range in the level of prevalence in the communities studied. Our sampling strategy is of a purposive and systematic nature and is neither random nor national in scope. Chiang Mai has one of the highest levels of HIV prevalence in the country. As a consequence of this high level, the community has been a frequent target of many HIV/AIDS interventions organized by both governmental and non-governmental organizations. Rayong is experiencing moderately high and Petchburi moderate levels of HIV. In sharp contrast to Chiang Mai, however, there has been little response in either of these provinces by organizations seeking to stem the spread of HIV or ameliorate the consequences for PWAs and their families. Khon Kaen, despite its low level of prevalence, has been selected due to its high level relative to the rest of the Northeast, which generally is a very low prevalence

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<sup>4</sup> According to a 1990 national study, only 13% of AIDS caregivers in the U.S. were 50 or older (17% in central cities) and only 6% at least 60 (Turner et al. 1994).

region. Lastly, Bangkok was selected because of its large population and its unique nature relative to the rest of the country.

Local sites (*tambols*) within each province were selected per discussions with provincial level health personnel. For Bangkok, the AIDS division of the Bangkok Metropolitan Administration assisted in choosing sites which were limited to lower and lower-middle income communities. The choices of local sites were based upon known existence of HIV cases in the area, the known level of competence of local staff, and familiarity of local staff with the community. Both urban and rural communities were studied in each province since we anticipated that levels of familiarity would be greater in urban areas than in rural ones. We also suspected that local norms and attitudes about AIDS would be a bit more sympathetic in rural areas given the generally closer knit nature of the communities found there. As shown in Table 1, 10 rural sites were selected among the 4 provinces along with 5 provincial urban areas. Bangkok provided an additional 9 urban sites.

All interviews in the provinces and a portion of those in Bangkok were conducted by teams of interviewers from the Institute for Population and Social Research (IPSR) of Mahidol University and under the supervision of the principal investigators (the authors of this report). In Bangkok, responsibility for interviewing was shared with staff from the Bangkok Metropolitan Administration (BMA), AIDS Division, who conducted 270 or 58 percent of the total Bangkok interviews.<sup>5</sup> Except for a small number of elderly persons who were interviewed during a regularly scheduled meeting of an elderly club in Petchburi province, interviews were normally conducted at the home of the respondents.

### **Populations of interest and sampling procedure**

A total of 1174 respondents were interviewed during the first half of 1999. As our primary interest is in the level of understanding older persons have about AIDS and HIV, most of our sample was targeted towards persons age 50 to 74. We employed this range of ages for two reasons. First, people in this age group are old enough to be at substantial risk of having a child old enough to be in the age groups at highest risk for contracting AIDS. Second, individuals in this age range are generally still healthy enough to be available for care giving of ill adult children should they be called upon to do so. We divided the older sample fairly evenly between the young old (age 50-59, n=368) and the older old (age 60-74, n=405).<sup>6</sup> In addition, we aimed for approximately equal numbers of men and women in each group.

Besides the sample of older persons, we included an additional sample of young adults (age 20-39, n=398), also approximately evenly divided by sex, for comparative purposes. Since most AIDS education messages have young adults as their primary target group, they provide a good benchmark from which to compare the outcomes for older adults. Comparing the age groups by using the same questionnaire administered at the same point in the epidemic strengthens this comparison. An additional bonus of this strategy is the provision of up-to-date information regarding AIDS knowledge among young adults in Thailand.

Procedures for selecting respondents varied slightly from site to site depending upon the types of community data that were available. As noted above, in each of the four provinces, both rural and urban sample sites were selected under advice from the personnel assigned to assist us from the provincial

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<sup>5</sup> We originally contacted the BMA to enlist their assistance in making contact with local community health volunteers, who are under their jurisdiction. The volunteers were to assist us in identifying and locating respondents. When we explained our project to the AIDS division staff they felt it would be useful for their own purposes to expand the Bangkok sample beyond that originally budgeted by our project. Their goal was to interview a sizeable enough sample to permit them to do a separate analysis for Bangkok and to issue their own report based on the Bangkok sample.

<sup>6</sup> Three respondents who were older than age 74 are omitted from the present analysis since they fall out of the intended target group.

health office. At each rural health center we initially selected a subset of villages either randomly or, in some cases, according to the familiarity of available personnel (typically village health volunteers) who were available to guide us to the households of respondents. Most rural health centers had listings of all households in their areas of responsibility that included information on the age and sex of the household members. Using these listings, all eligible individuals were recorded on a form (by sex and age group). A sample of the desired size and sex composition was obtained by selecting individuals at appropriate fixed intervals (determined by dividing the number in the particular age-sex category by the number of respondents needed in that category age-sex). In provincial urban areas and Bangkok, household listings were not normally available. In these sites, and in the few rural sites where household listings were unavailable, we relied on local health volunteers to identify the requisite number of respondents in each target age-sex category based on their knowledge of the community.

Interviewers were normally accompanied by the health volunteers to the household for an introduction. Where the selected individual was not available but was thought to be returning later, an appointment was made. Where the selected individual would not be available during the time we were in the village (usually one day), another eligible individual from the household was selected if available. However, substitute households were not selected if there was no one available from the selected households. Interviewers were instructed to try to conduct the interview in private to the extent possible. Generally they were successful in this. When others were present and unwilling to leave, they were asked not to assist the respondent in answering the KAP questions.

In sites where detailed information about potential respondents was not available, households rather than individuals were selected. Upon arrival at the household, if more than one individual was available in the selected age range, a selection procedure was employed to ensure that random choice of available and eligible respondents determined who should be interviewed. This procedure can be found on the first page of the questionnaire (in the appendix). Refusals were rare.<sup>7</sup>

### **The instrument and its administration**

The KAP questionnaire used in the study is included as an appendix. The central purpose of the instrument was to assess knowledge and attitudes of older persons regarding AIDS and PWAs, and much effort was expended in targeting the questions towards this specific group. For example, much of the questionnaire was devoted to knowledge and attitudes about care giving practices (especially the perceived risks attached to them), since it is older persons who are likely to be the major care givers for many PWAs in Thailand and in other medium to high prevalence countries. We also devoted considerable effort to documenting ambivalent and/or qualified answers to questions, since we wanted to be able to assess the extent to which older persons may doubt public health messages which they have heard and to be able to conduct more nuanced analyses that would include ambivalent responses.

The first section of the questionnaire covers key background characteristics that may have important associations with levels of AIDS-related knowledge. The second section asks about sources of information and the level of interest the respondent has about AIDS. Knowledge about transmission of HIV and AIDS manifestation, treatment, and prognosis are covered by a fairly standard series of 19 questions in the next two sections. The use of conventional phrasing (e.g., as used in the National Health Interview Survey) facilitates comparison of these results with other samples.

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<sup>7</sup> We did not keep systematic records of refusals at most sites, in part because they were rare. Our most detailed accounting and field notes were taken at one of our Khon Kaen sites (Ban Wa). We had 6 refusals and 181 successful interviews, a refusal rate of  $6/187 = 3\%$ . An occasional older person selected would refuse to participate because it was thought that discussing AIDS was inauspicious. The success rate of interviewing the originally selected respondent at this site was  $187/203$  attempts = 92%. For all 16 cases for which the selected respondent would not be returning home in time for an interview, we were successful in selecting an alternative respondent.

The next section about the perceived risks of care giving practices were based upon the perusal of care taking manuals, conversations with health personnel, and pretests of earlier versions of the questionnaire. A primary objective is to document the extent to which older persons are aware of how they could reasonably contract (or not reasonably contract) the HIV virus through common care taking responsibilities.

Next we ask the respondent two questions to assess the degree of his or her own personal concern about being infected and whether s/he has in fact been tested for AIDS. We did not ask these questions in instances where others were listening at this point of the interview– this happened in 18 cases. The final section assesses what type of relationship (if any) the respondent has personally had with a person infected with HIV.

In addition to the questions regarding the perceived risks of potential care taking tasks, another unique feature of the survey was the provision made to document ambivalent and/or qualified answers. Pretests showed that respondents are often quite able to respond in a way that is consistent with public health messages they may have heard, but they also often express reservations about whether it is really true or whether they themselves would be willing to engage in what they know is considered to be low risk behavior such as sharing a washed drinking glass. Other comments made by some respondents during the interview reveal substantial hesitation and reservation about engaging in casual contact with PWAs. Our strategy of recording these comments by the respondents and incorporating them into our coding scheme, while time consuming, leads to a much more nuanced documentation of levels of AIDS knowledge than would have been obtained using the conventional approach of completely predetermined categories.

The face to face interviews under the auspices of IPSR were conducted by graduate students and research assistants who received two days training in both interviewing techniques and the details of this particular instrument. They were closely supervised in the field by the principal investigators and their assistant; extensive feedback was provided after their initial interviews.

Two days of training was also provided to the staff from the BMA AIDS Division who conducted the interviews for the supplementary Bangkok sample areas referred to above. This training included observing interviews in Bangkok by the IPSR team who, by that time, had gained experience from their interview conducted in the provinces.<sup>8</sup>

After being introduced to the respondent by the intermediary (usually the health volunteer), the interviewer explained the purpose of the questionnaire to the respondent, explained that no identifying information would be recorded, and explained that participation was strictly voluntary. We asked for privacy in conducting the interview and this was generally granted. The occasional hangers on almost always appeared to lose interest rather quickly and typically would leave after a few minutes. In some cases small children under the care of the older person would be playing near by. The interview usually took about 30-40 minutes to complete.

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<sup>8</sup> Since the principal investigators did not supervise the actual fieldwork of the BMA staff it is possible that some differences in the way respondents were selected or how interviews were conducted occurred, in spite of the training and instruction provided to them. Comparisons of the two portions of the Bangkok sample interviewed by the IPSR team and the BMA team show some contrasts; it is impossible to know whether these reflect actual differences, given that the two teams conducted interviews in different parts of Bangkok, or if they reflect differences in interviewing and sample selection procedures by the two teams. For example, among Bangkok respondents aged 50-74, those interviewed by the BMA team (in comparison to those interviewed by the IPSR team), were more likely to have attended an elderly club (23% vs. 10%) and more likely to have been a health volunteer themselves (13% vs. 8%), and more likely to have gone to an AIDS lecture (31% vs. 13%). A more distinctive feature of the BMA sample is the lower percentage who say they ever knew a PWA compared to the IPSR sample (45% vs. 64%). Overall, the Bangkok respondents interviewed by the BMA team appear to be less well informed about transmission of AIDS than the IPSR-interviewed Bangkok subsample.

## RESULTS

Basic background characteristics of the respondents are presented in Table 2. The sample is fairly evenly split among the 3 age groups of interest and between men and women. As explained above, Bangkok was over-sampled because of an opportunity to increase the sample size through cost sharing with a local government agency interested in the same topic. As expected, single marital status was fairly common among the young adults but rare for older persons; the converse of this is true for widowhood. Because of the over-sampling of Bangkok, the overall sample has more respondents with urban background than rural. The age ranges of children for the older respondents fell clearly within the highest risk groups for AIDS as could be expected.

Educational levels mirror the secular increases occurring in Thailand over the past several decades, increasing dramatically with the age of the sub-samples. A substantial proportion of those in the 60+ age group report current work. Agriculture defines the life career of a third of those in the older age groups, but only about a fifth of the young adults, reflecting the modernization of the Thai economy over the life course of the older respondents. Overall, the proportion whose main occupation is an agricultural one is well below what would be the case nationally, reflecting the heavy urban emphasis of the total sample. Elders club meetings are popular with the oldest respondents, especially older women. About 10% of the total sample (15% of the 50-59 year olds) had served as a health volunteer, which would expose them to a fair amount of information about HIV and AIDS.

Table 3 highlights the respondents' exposure to information about AIDS, their level of interest in the topic, and their contact with persons with AIDS. Essentially everyone had heard of AIDS. Not surprisingly, level of reported interest falls sharply with age, as does the perception that AIDS information is useful to them. About a third of the entire sample report ever attending an AIDS lecture, and surprisingly there is little difference reported between the young adults and the young old groups.

Testing is much more popular among the young than the old, as it is likely the young would perceive themselves to be more at risk than their elders would. Indeed, the proportion of the young who worry some about AIDS (28%) is much higher than it is for older persons; this also holds true for those who worry a lot. But previous interaction with persons infected with AIDS is widespread across all age groups and sex. Sixty nine percent of the entire sample report knowing at least one person suffering from AIDS; the proportion is at least 60% in each age/sex category. Among those knowing at least one PWA, the mean number known ranges from 3 to 5 depending on the categories in the table. Coresidence and/or care taking responsibilities for PWAs, while not common, are fairly consistent across the age groups, ranging from 9–17%. Eight percent of those who know a PWA have a close relative (a child, spouse, and/or sibling) suffering from AIDS.

Table 4 shows variation on these outcomes by province of residence, educational level, and main occupation for the older persons in the sample. Most older persons queried felt that the knowledge they had received about AIDS was useful, and this varied little across the five provinces sampled. Substantially fewer (but still 70%) of the individuals in the lowest education category felt this way. Most older persons were eager to know more about AIDS, and respondents from Khon Kaen were especially so (78%). This may be due to the increasing salience of the epidemic in that province. Older respondents from Chiang Mai, the epicenter of the Thai epidemic and the focus of efforts to combat it, were most likely to have attended an AIDS lecture (45%). These lectures appear to have been more successful at attracting older participants with higher levels of education than those with lower levels, although those with a farming background are more likely to have attended than those with non-farming occupations.

A surprisingly high proportion (13%) of the older sample report having been tested for HIV. While some of this may be due to misunderstanding of the question (an older person having his blood "checked" could perhaps think that it is tested for everything), we tried to emphasize specific testing for HIV in the fieldwork. Differentials in the proportion tested are according to expectations: persons living in areas where the epidemic receives the most attention (Chiang Mai) reported the highest levels of testing while persons in provinces that are only beginning to experience some increases reported the lowest levels (Petchburi and Khon Kaen). Few older persons worry a lot about contracting HIV, although the

proportion of the older Chiang Mai respondents worrying a lot was at least 3 times as high as at the other sites. The high proportion of Petchburi older respondents (83%) knowing a PWA is difficult to explain. Among those who report knowing a PWA, it is more likely that this person is a neighbor or acquaintance than a relative. But among the Chiang Mai and Rayong older respondents who know a PWA, this person is more likely to be a child or sibling than in the other provinces sampled.

Most important sources of AIDS information for the sub-samples are presented in Table 5. Television is most frequently cited first as one of the most important sources for all age, sex, and education groups. While government personnel are cited as sources more frequently by the young adults and the younger old than for the older old, friends and acquaintances are cited more frequently by the older old as a major source of information. Radio is a more frequent most important source of information about AIDS for the older age respondents than for the young adults. Friends, acquaintances, and radio appear more important for older persons with the lowest level of education than for older persons in the higher education categories. Health volunteers are cited infrequently (3%) as the first most important source but are reported more frequently for women than for men; newspapers and billboards are also reported as a most important source infrequently, but more often by men than by women.

While Table 5 focuses on the most important source reported, Table 6 shows all of the sources of information about AIDS reported by the respondents, and differentiates them according to whether the source was mentioned by respondents unprompted (the respondent mentions it on their own) or prompted (the respondent agrees it is a source of information when it is mentioned to him or her). The importance of television is further demonstrated by being mentioned unprompted as a source by 61% of the sample. Friends, radio, newspapers, and government health personnel were mentioned unprompted as a source of information about AIDS by a quarter or more of the sample.

Friends and acquaintances are mentioned unprompted more frequently as the age group becomes older, while television, newspapers, and government health personnel are mentioned unprompted less frequently as the age of the sample groups becomes older. Still, 64% of the young old and 58% of the older old indicated that government health workers were a source of information about AIDS either as an unprompted response or when asked about that particular source. Men and women do not differ greatly in the extent they cite particular sources of information, especially when the combined prompted and unprompted results are considered. The sources that show the largest gender differentials are those which require reading: men are noticeably more likely than women to acknowledge brochures or pamphlets, newspapers, magazines, and billboards as sources of information. Closer examination reveals that this is entirely due to older persons in the sample and very likely reflects the substantial gender differences in education in the past which has limited the ability to read with ease more for older women than for men. No distinct gender difference is apparent for the young respondents for these sources.

Table 7 presents results on knowledge about the transmission of the virus that causes AIDS by age group and sex. We employ several standard AIDS knowledge questions previously used in other surveys in order to allow comparisons between our results and other studies. Coding of responses as “correct” or “incorrect” was straightforward for most questions but was challenging for a few. Our intent is to code in such a way that best allows differentiation between respondents who seem most likely to understand the dimension of knowledge measured by the question from those who do not. Our classification scheme for best answers for each question is included as Appendix 2 and summarized at the bottom of Tables 7-10. For example, for the question:

*How likely do you think it is that a person will contract the AIDS virus from...*

25. Getting a blood transfusion that includes blood from someone infected by the AIDS virus?
  1. Very possible
  2. Somewhat possible
  3. Not possible
  9. Don't know

A respondent choosing choice #1 is coded as having answered the question correctly. A person stating that infection might occur if a mistake occurred in screening, is considered to have qualified the answer reasonably and thus is considered to have answered correctly. A person choosing choice #2, #3, or #9 is considered to have answered the question incorrectly. A person stating that it is possible only if the PWA donating blood had AIDS-related symptoms is coded as having qualified the answer unreasonably and therefore answered incorrectly.

Over 90% of each age-sex group answered correctly about the major conduits of HIV transmission in Thailand, i.e., unprotected sexual relations with an infected person and sharing needles for intravenous drug use. Proportions answering correctly questions pertaining to transmission related to blood transfusions and perinatal transmission, including breast-feeding, were also very high for all age sex categories. Our question about the perceived risks involved with coming into contact with a person with AIDS elicited high proportions of correct answers, i.e., that it was very or somewhat possible if it involved blood-to-blood contact.

Proportions answering correctly for questions about the risks of casual contact were lower for all age groups, but especially so for the older respondents. For example, only 60% of the older old knew that one cannot contract AIDS by sharing a meal with a PWA, 58% knew that using the same toilet as a PWA does not put one at risk, and only 44% knew that sharing a drinking glass posed no risk. Proportions of the younger old answering correctly were higher for all three of these questions, but did not rise above 75%. Rural urban differentials on this set of questions revealed no clear patterns.

Table 8 cross tabulates responses to these same questions about modes of transmission given by the older respondents (age 50 and over) by the degree and type of personal experience the respondent has had with PWAs. Ever having known a person with AIDS increases the proportion answering correctly a question regarding transmission via breast-feeding, a question about transmission via mosquitoes, and several questions about the risks of casual contact. For example, ever having known a PWA increases the proportion who know that it is safe to share a meal with a PWA from 56% to 72%. Where the known PWA was the respondent's child, this generally increases further the proportion answering these questions correctly. For example, among those who had a child suffer from AIDS 63% knew that it was safe to share a meal with a PWA, compared to 57% who had an acquaintance suffer from AIDS and 44% who did not personally know a PWA. As encouraging as these differentials are, the implication that 37% of those who had a child suffer from AIDS did not answer this question correctly is cause for concern.

Fear about contracting AIDS by attending the funeral of a PWA did not follow this differential. Those respondents who had a child suffer from AIDS were in fact slightly less likely to answer this question correctly than were respondents who did not know any PWAs.

In Table 9 we turn to a second set of AIDS knowledge dimensions: manifestation, treatment, and prognosis. These dimensions are assessed by questions 37-42 in the questionnaire. The first item in the table demonstrates that 85% or more of each age group understands that AIDS is currently incurable, with slightly fewer older respondents are aware of this compared to the young adults. The proportion of young adults understanding this aspect of AIDS is impressive (88%), even among the least educated members of this group. Among young men with only elementary levels of education or less, for example, 93% answered this question correctly (results not in table). This is in sharp contrast to 1991, when in an earlier study of men conducted in Chiang Mai city found only 71% of the soldiers, 60% of the municipal workers and 64% of the construction workers answered this question correctly (VanLandingham et al. 1997). Among women in this same age/sex/education category in the current study, only 83% answered the question correctly (results not in table).

Age differentials are more apparent on the question assessing whether the respondent knows that persons infected with HIV can show no symptoms: just under 60% of the oldest age group were aware of this. Again, lesser educated young men in this sample show improvement compared to the beginning of the decade although the pattern is not quite as clear as it was for the item about cures discussed above. For young adult men with elementary education or less in the current study, 72% (results not in table) answered this question correctly (60% for the women in this education category). For the young men included in the 1991 sample cited above, 72% of the soldiers, 44% of the construction workers, and 51%

of the municipal workers answered this question correctly (VanLandingham et al. 1997). It is quite possible that this aspect of AIDS knowledge was emphasized to the soldiers even early in the decade.<sup>9</sup>

Majorities of all age-sex groups in the current study knew that modern drugs exist that can lengthen the life of a PWA, but the proportions answering correctly were again inversely associated with age. Perhaps most worrisome for older persons' own sexual health, over 40% did not understand that traditional medicines or remedies can not prevent the transmission of AIDS. Most respondents in all age-sex categories appear to be overly sanguine about the ability of traditional drugs to lengthen the life of a person suffering from AIDS.

Table 10 cross tabulates the responses to these questions regarding AIDS manifestation, treatment, and prognosis by the degree and experience the older persons have with AIDS and PWAs. Ever knowing a PWA increases by at least 10 percentage points the proportion of older persons who know that modern drugs can lengthen the life of a PWA; that there are no modern drugs available to the public that can prevent the transmission of HIV; and that traditional drugs cannot prevent HIV transmission. Examination of these differentials by the type of relationship the older person has with the PWA is hampered by very small numbers in the appropriate categories. Among those who report knowing a PWA, those reporting non-close relatives or friends with AIDS are most likely to be aware that modern drugs can lengthen the life of a PWA. Those with an infected child are most likely to know that taking traditional drugs does not prevent the transmission of HIV. Living with or caring for a PWA does not lead to consistently better answers to this set of questions relative to those who know a PWA but have never lived with or cared for them.

Table 11 presents tabulations to questions about what are perceived by the respondents to be the most appropriate care giving practices. These questions were motivated by a desire to assess to what degree older persons have the information they need to protect themselves from unnecessary exposure to HIV and associated pathogens should they be called upon to care for a relative suffering from AIDS; and to explore the extent to which older persons may be unduly concerned with the minimal risks that care taking may pose for them.

Ninety-five percent of the respondents said yes when asked "Should someone who cares for a PWA wear plastic gloves if the PWA has open sores or wounds or is soiled by diarrhea?" This high percentage varied little by age-sex category, or by whether the respondent had ever known or lived with a PWA. The percentage responding yes to a similar question but one that stipulated that the ill person had no open sores or diarrhea was 63%, again with little variation by the factors examined in the table except for ever having cared for or lived with a PWA – fewer of these respondents (53%) agreed with this statement.

While it is encouraging that fewer respondents felt that it would be necessary to wear gloves if the patient had no open sores, it is still of concern that so many respondents across so many age/sex categories felt that gloves would be necessary. A similar pattern occurs for questions pertaining to the perceived necessity of wearing a mask when caring for PWAs with and without TB. However, in this case, only 39% of the entire sample thought a mask would be necessary in the absence of TB. This percentage rises to about half of the oldest respondents. Those who had ever lived with or cared for a PWA were again the group least likely to agree with this statement.

Little concern was exhibited about sharing a pen or book used by a PWA, but over half of the entire sample and nearly two thirds of the oldest group did not feel that washed dishes or a washed glass could be safely shared. More than 4 in 5 of the older respondents thought that PWA dishes required special treatment and/or handling. A quarter of the sample would discard PWA clothes soiled by blood or other body fluids, even among those ever co-residing and/or caring for a PWA.

Table 12 reports opinions of the respondents on HIV testing by age/sex categories and by their experiences with PWAs. A major purpose of this series of questions was to explore whether respondents

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<sup>9</sup> Interestingly, among the 11 young men in our current sample with university education all answered this question correctly. Eighty nine percent of the 519 university students in the 1991 Chiang Mai study answered this correctly.

were familiar with the symptoms associated with HIV. Ninety percent or higher of each age group thought that a person who suspected they had AIDS should go for a test. Young adult women reported the highest rate of such positive opinions about testing, perhaps due to the fact that so many young women are unwittingly put at risk by virtue of being married to infected husbands. Symptoms commonly associated with AIDS such as persistent headaches, frequent colds, diarrhea and weight loss, and persistent skin rash and dark spots were thought to indicate a need for testing by significant proportions of respondents. Symptoms not generally thought to be indicative of AIDS, such as occasional headaches, colds, and diarrhea, were less frequently seen by the respondents as indicating a need for testing. Even so, over 20% of the sample thought that these common ailments warranted a blood test for AIDS, suggesting either over-reaction on the part of a substantial minority, over-eager responsiveness to a questionnaire about HIV and AIDS, or perhaps misunderstanding the question to mean *any* sort of health test (see the appendix for phrasing of question 51).

Many of the questions asked in the survey are when considered by themselves merely suggestive of a respondent's knowledge and attitude about a particular dimension of AIDS. A few items have no clear cut correct answer, and it is possible to be scored incorrect on any single item when in fact a respondent could have an unusually sophisticated understanding of the science underlying HIV and AIDS. We minimize these problems by probing, recording, and coding the more nuanced and qualified answers. A second way to improve the validity and reliability of the instrument is by employing more than one question to assess a dimension of interest. We pursue this second strategy in Table 13 by constructing scales of the items that are thought to measure particular aspects of AIDS knowledge. For example, kscale1 includes 14 items that were included to assess respondents' understanding of AIDS transmission. The second scale, kscale2, includes 6 questionnaire items included to assess knowledge about what happens when someone contracts AIDS, i.e., its manifestation, treatment, and prognosis. The final scale, kscale3, includes all 20 questionnaire items.

The value of these scales can be assessed in part through reliability coefficients. Cronbach's alpha is a standard measure of reliability, and is often interpreted as how well a given scale measures a quality compared to some ideal scale. Our overall knowledge scale has an alpha of 0.70, within an acceptable range of reliability. The scale including the subset of items assessing knowledge of AIDS transmission has an alpha of 0.72. This higher level of reliability for a smaller number of questions can be explained by the fact that kscale1 seeks to measure a narrower aspect of AIDS knowledge than does the overall scale. The second scale (kscale2), which attempts to measure knowledge of AIDS manifestation, treatment, and prognosis, has an alpha of only 0.33, indicating a poor level of reliability. This can be explained by the fairly broad range of issues covered by only 6 questions. We retain this second scale for illustrative purposes only; we have much less confidence in the results from this scale compared to the other two.

Knowledge among the respondents as a whole was high. For the total scale including all items (at the far right of the table), the average score was 14.28 out of a total of 20 questions; the median was 15 questions. Only 12% got half or fewer of the questions correct, less than 1% missed them all, and less than 3% got only 7 or fewer questions correct, approximately the number the respondent would get correct if they were unwilling to choose "don't know" and guessed among the other choices in a random manner.

The male respondents know significantly more about AIDS than do the female respondents. Men responded correctly on average to about a half a question more on both the transmission scale and the full scale; there was no sex difference on the scale measuring AIDS manifestation, treatment, and prognosis. Age affected average knowledge scale scores as anticipated. The young adults answered on average 1 question more than the younger old on the full scale, and 2 questions more than the older old. Age group distinguishes average scores at a statistically significant level for all 3 knowledge scales and the same negative association between level of knowledge and age is observed for each scale.

Differences in knowledge as assessed by the scales by province are significant for the total scale and kscale2. Respondents from the fairly high prevalence provinces of Chiang Mai and Rayong average the highest scores. Petchburi respondents score at an intermediate level, and respondents from Bangkok

and Khon Kaen score the lowest. While statistically significant, the differences among the provinces are not large.

The bottom half of Table 13 limits the analysis to only the older respondents in the sample, i.e., those 50 and over. The reliability of the scales for this older group as assessed by Cronbach's alpha, is higher, indicating that the scales do a better job at assessing AIDS knowledge for the older respondents than for all respondents. The alpha for kscale2 remains low.

Sex differences in AIDS knowledge among the older sample resemble those for the entire sample. While older men and women both score lower on average than their younger counterparts, the difference between older men and women expands slightly for the older respondents for the scale measuring transmission knowledge and the scale including all items. Provincial differences among the respondents age 50 and above are nearly identical to those found for the entire sample. Respondents from Chiang Mai and Rayong again score the highest on the overall scale. All of these differences on average scale scores by province are statistically significant for the older sample. Older rural respondents scored slightly higher on two of the three scales compared to their urban and periurban counterparts, but the difference was small and significant only for kscale2.

Differences on knowledge scale scores are next examined by levels of education and occupation for the older respondents. Such a comparison is not computed for the entire sample since the results would be hopelessly confounded by age differences: older persons had on average much less opportunity for education and modern sector employment than have subsequent cohorts. This problem is reduced but not entirely eliminated by focusing on those age 50 and above for these calculations.

Knowledge differentials are in fact quite substantial for the older sample. While the highest category of education (those who completed lower elementary or had at least some high elementary education) includes only 13% of the older respondents, these relatively highly educated individuals scored on average about 2 questions higher on the scale including all items than those with the least amount of education and about 1 question higher than the majority of older respondents who fall into the middle education category. This same pattern (but not the magnitude) of difference is observed for all 3 knowledge scales and the observed differences by education level are highly significant for each scale.

AIDS knowledge scores by occupational categories for the older respondents are presented in Table 13 just below the education-based results. Scores generally increase as occupation moves from none to farm-related to nonfarm-related (except for kscale2), but the differences are small and only significant for the transmission scale and only at the  $p = 0.05$  level.

## CONCLUSIONS AND IMPLICATIONS

This study of AIDS related knowledge among Thais is based upon data collected during 1999 in 5 provinces (Bangkok and 4 provinces in the north, central, and northeastern regions). We sampled areas in high, medium, and low prevalence areas in both rural and urban locales and stratified our sample by 3 age groups: 20-39; 50-59; and 60-74. Our study is the only one we know of outside of the U.S. that compares AIDS related knowledge among older people with AIDS knowledge of young adults sampled in the same locales at the same point in time using the same instruments.

Our results show that levels of interest, familiarity, and knowledge about AIDS among Thais at this point in Thailand's HIV/AIDS epidemic, while high, are variable across population strata. Understandably, young adults report higher levels of interest in learning more about AIDS, are more likely to be worried about contracting it, and are more likely to have been tested than are the older respondents. But similar proportions across age groups report ever having known a PWA, and 7.5% of the older sample report ever having lived with or cared for a PWA.

Much progress has been made in educating young men about the dangers posed by HIV and AIDS. Comparing results from this study to an earlier one of young men conducted in the city of Chiang Mai during 1991 suggests rising levels of knowledge among lesser educated men. Knowledge levels of young women remain lower than that of men; trends are difficult to discern since fewer early KAP studies of women and AIDS were conducted than of men. Such a focus on men made sense since until recently

more men were at risk of contracting HIV than women, and normative male behavior played a greater role in its spread. But the prior imbalance of infection towards men is diminishing as more and more women become infected through their relationships with already infected men. Information, education, and communications programs targeting young women should receive high priority at this stage in the epidemic. Our results show more young women expressing an interest in learning about AIDS than any other age-sex group in the study. Also, the high proportions of young women who express positive opinions about HIV testing may imply widespread interest and receptivity to information and education about AIDS at this stage in the epidemic.

Much more attention should be paid to what older Thais understand and do not understand about AIDS, since many of them will be called upon to care for their adult children or other younger relatives stricken by this disease. Furthermore, older persons in Thai society occupy positions of respect and thus often serve as opinion leaders within a community. Older persons are more likely to cite friends and acquaintances as important sources of information, suggesting that they are less likely to be reached by official AIDS educational campaigns than are young adults. This is particularly true for seniors with the lowest levels of education. Seniors are much more likely than young adults to overstate the risks of contracting HIV by casual contact, e.g., by sharing a meal, eating utensils, or a home with a PWA. Many also appear overly concerned about the risks for acquiring HIV should they ever have to engage in care giving activities, even though in fact such risks are extremely slight (Editor 1994). For example, over 60% of the older respondents felt that someone giving care to a PWA should wear plastic gloves even in the absence of open sores or diarrhea; half of the oldest group felt that wearing a mask was necessary during care giving even in the absence of TB; and less than half of the older respondents felt that washed dishes or drinking glasses could be safely shared with a person suffering from AIDS.

Such unfounded fears of casual contact and routine care giving tasks have important implications both for seniors and for PWAs. PWAs with whom seniors come into contact may suffer from unnecessary cautious behavior either by the seniors themselves or by others influenced by these fears. While previous contact with a PWA is associated with a better understanding of the low risks of casual contact, there is much more that government and NGOs could do to improve the education of seniors about AIDS even before they have interactions with PWAs, as increasing numbers of them inevitably will (Wachter et al. 2000).

Also, recent research shows that many Thai seniors remain sexually active well into their 50s (Knodel and Chayovan 2000), making these KAP findings relevant for the sexual health of older persons themselves. Only two-thirds of our respondents in their 50s understood that a person infected with HIV can be asymptomatic, and 40% of this age group did not understand that taking traditional drugs cannot protect one from acquiring HIV.

Analysis of scales constructed of the questionnaire items confirms that older persons are less informed about AIDS than are young adults. Levels among older respondents are lowest for those with the least education, those who identified no principal occupation during their lives, and those living outside of the higher prevalence areas of Chiang Mai and Rayong. But even in these higher prevalence areas, much misinformation about AIDS remains. For example in Chiang Mai, almost a fifth of the young adults and over a third of the older respondents did not know that traditional drugs cannot prevent the contraction of HIV (results not in tables). Both among the young adult and the older populations, better dissemination of accurate information about AIDS is still needed.

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**Table 1 Characteristics of local areas selected for the study by province**

Area characteristics	Total	Chiang Mai	Rayong	Petchburi	Khon Kaen	Bangkok <sup>a</sup>
Location of health stations						
Rural	10	2	2	3	3	0
Urban	2	0	1	1	0	0
Urban local community <sup>b</sup>	12	1	0	0	2	9
Elders club	1	0	0	1	0	0

<sup>a</sup> Staff members from Bangkok Metropolitan Authority, AIDS division, helped collect the information in Bangkok, resulting in a large number of sites.

<sup>b</sup> The term 'community' used here refers to the local areas officially recognized by the municipality as a densely populated area with low to moderate income

**Table 2 Background characteristics of respondents by age and sex**

Respondent characteristics	Total	Age group			Sex		Age group and sex					
							20-39		50-59		60-74	
		20-39	50-59	60-74	Male	Female	Male	Female	Male	Female	Male	Female
Province (number of cases)												
Chiang Mai	177	56	54	67	85	92	25	31	26	28	34	33
Rayong	169	60	53	56	82	87	28	32	28	25	26	30
Petchburi	177	60	48	69	81	96	29	31	22	26	30	39
Khon Kaen	181	60	63	58	84	97	30	30	29	34	25	33
Bangkok	467	162	150	155	229	238	81	81	71	79	77	78
Total n	1171	398	368	405	561	610	193	205	176	192	192	213
Percent of total	100	34	31	35	48	52	16	18	15	16	16	18
Marital status (%)												
Single	11	27	3	3	16	7	40	14	3	4	3	3
Married	69	66	79	63	76	62	53	78	92	66	85	42
Divorced/Separated	6	6	7	6	3	9	6	7	2	11	3	9
Widowed	14	1	12	29	4	23	0.5	2	3	19	9	47
Type of place grew up (%)												
Rural	43	38	48	43	40	45	36	40	48	48	37	48
Urban	57	62	52	57	60	55	64	60	52	52	63	52
Mean number of living children												
Son	1.4	0.6	1.5	2.2	1.4	1.5	0.5	0.7	1.4	1.6	2.2	2.1
Daughter	1.4	0.6	1.5	2.2	1.3	1.5	0.4	0.7	1.5	1.4	2.1	2.2
Total	2.8	1.2	3.0	4.3	2.7	3.0	0.9	1.4	2.9	3.1	4.3	4.3
Mean age of living children												
Eldest	28	9	29	40	28	29	9	10	28	31	38	42
Youngest	21	5	22	29	21	22	5	6	20	23	27	30
Mean number of children living at home												
	1.5	1.1	1.7	1.6	1.4	1.5	0.8	1.4	1.7	1.7	1.7	1.4

**Table 2 (Continued)**

Respondent characteristics	Total	Age group			Sex		Age group and sex					
							20-39		50-59		60-74	
		20-39	50-59	60-74	Male	Female	Male	Female	Male	Female	Male	Female
Level of education (%)												
No education or some lower elementary	12	3	9	25	9	16	4	2	4	13	19	31
Finished lower elementary or has at least some high elementary	63	52	76	63	61	65	43	60	78	75	65	62
At least some middle school or higher	24	45	15	12	30	19	53	38	18	12	17	7
(If not completed grade 4), ability to read without difficulty	58	71	59	52	64	54	75	68	63	55	61	46
Currently work (%)												
Yes	64	73	73	47	72	57	82	65	84	64	52	43
No, retired	18	0.3	12	42	17	19	0	1	6	17	44	40
No, other reasons	18	27	15	11	11	24	18	35	10	20	4	17
Main lifetime occupation (%)												
Farmers/agricultural laborers	28	19	33	34	27	29	17	21	32	33	33	34
Non-farming occupations	60	67	58	57	66	55	71	63	65	51	64	50
No occupation <sup>a</sup>	11	15	10	10	6	16	13	17	3	16	3	16
Ever attend elders club meeting (%)												
Ever worked as health volunteers (%)	23	0	12	34	19	28	0	0	9	15	28	39
	9	7	15	8	7	12	3	10	12	17	7	8
Among those ever worked as health volunteers:												
Percent with AIDS training	71	78	72	62	55	80	75	79	55	82	46	75

<sup>a</sup> Includes students and unknown.

**Table 3 Experience of the respondents with AIDS by age and sex**

Experience with AIDS	Total	Age group			Sex		Age group and sex					
							20-39		50-59		60-74	
		20-39	50-59	60-74	Male	Female	Male	Female	Male	Female	Male	Female
% ever heard of AIDs	99.7	100	100	99.3	99.8	99.7	100	100	100	100	99.0	99.0
% interested to know about AIDS	75	87	76	61	75	74	81	92	77	76	67	55
% perceived AIDS knowledge received was useful	87	97	89	76	88	86	97	97	91	87	77	75
% ever attended AIDS lecture	34	36	37	29	36	32	37	36	40	34	31	27
% ever been tested for HIV	22	38	17	10	25	19	38	39	21	13	15	6
% ever worried about getting AIDS												
Never	77	66	80	87	81	74	71	61	84	75	87	87
Some	17	28	17	8	15	20	23	32	14	20	8	7
A lot	4	6	3	4	4	5	6	5	2	4	4	5
% ever lived with or cared for PWA	13	16	11	11	12	13	17	15	9	13	11	11
% ever known PWA	69	70	70	67	72	66	69	71	73	66	75	60
Mean number of known PWA (among those who know PWA)	4.4	4.2	4.5	4.4	5.1	3.6	5.0	4.0	5.0	4.0	5.0	3.0
Relationship to known PWA (%) <sup>a</sup>												
Close relative (own child, spouse, or sibling)	8	8	8	10	7	10	5	10	6	10	9	10
Own child	4	1	5	6	3	5	0	1	4	6	6	7
Spouse	2	3	2	2	3	1	2	3	2	1	3	0
Sibling	3	5	2	2	2	5	3	7	1	3	1	3
Relatives	25	22	24	29	22	29	17	26	24	25	24	35
Friends	19	41	9	6	28	10	59	25	15	3	12	0
Neighbors	46	33	55	51	42	50	21	44	52	59	52	49
Acquaintances	37	36	38	37	39	35	36	36	42	33	39	34

<sup>a</sup> Asked of those who know a PWA; this forms the denominator for these proportions. Because some respondents know more than one PWA and some categories overlap, total percentage exceeds 100.

**Table 4 Experience with AIDS by province, education, and main life time occupation (Older persons age 50 and above)**

Experience with AIDS	Total	Province of residence					Education <sup>a</sup>			Main life time occupation		
		C	R	P	K	B	Lowest	Middle	High	Farming related	Non-farming	No occupation
% ever heard of AIDS	99.6	100	99.4	98	100	100	100	99	100	99	100	100
% perceived AIDS knowledge received was usefi	82	83	83	83	82	81	70	85	85	84	82	80
% interested to know about AIDS	68	72	68	62	78	65	56	71	71	72	66	68
% ever attended AIDS lecture	33	45	36	39	36	23	26	34	38	38	30	30
% ever been tested for HIV	13	23	12	7	6	15	15	12	20	11	14	17
% ever worried about getting AIDS												
never	83	78	78	75	87	90	84	82	92	79	86	82
some	12	11	19	19	11	8	10	14	7	15	11	12
a lot	4	12	3	4	1	2	6	4	1	4	3	6
% ever live with or cared for PWA	11	14	13	7	13	10	18	11	4	12	11	12
% ever known PWA	68	90	87	83	54	53	66	69	67	75	64	70
Mean number of known PWA (among those who know PWA)	4.4	7.0	5.0	4.0	3.0	3.0	4.0	4.0	5.0	5.0	5.0	3.0
Relationship to known PWA (%) <sup>b</sup>												
Close relative (own child, spouse, or sibling)	9	13	15	3	5	7	14	8	4	10	9	2
Own child	6	9	8	3	5	4	11	5	3	6	6	2
Spouse	2	0	2	0	0	4	2	1	1	0	2	0
Sibling	2	5	4	0	0	1	1	2	0	3	1	0
Relatives	27	30	44	26	34	12	26	29	14	42	17	22
Friends	8	6	8	7	5	9	5	7	16	4	10	6
Neighbors	53	62	58	48	49	47	51	55	42	56	48	66
Acquaintances	37	32	33	51	28	39	38	34	54	28	44	34

n = 773

<sup>a</sup> Educational levels - Low (No education or some lower elementary); Medium (Finished lower elementary or has at least some high elementary); High (At least some middle school or higher).

<sup>b</sup> Asked of those who know a PWA; this forms the denominator. Because some respondents know more than one PWA and some categories overlap, total percentage exceeds 100.

**Table 5 Percentage citing particular sources first as most important for obtaining AIDS information by age, sex, and education**

Source of information	Total	Age group			Sex		Education (Older persons age 50 and above)		
		20-39	50-59	60-74	Male	Female	Low	Middle	High
Television	42	43	44	40	42	42	48	41	42
Government health personnel	21	23	24	18	21	21	15	22	22
Friends/acquaintances	11	8	8	16	10	12	19	12	7
Radio	5	2	6	7	5	5	9	5	7
Health volunteer	3	4	3	2	2	4	0	3	1
Brochures/pamphlets	3	6	1	2	3	2	0	1	3
Newspapers	2	3	2	3	4	1	0	2	8
Private clinic	2	3	3	2	3	2	1	3	3
Magazines	2	4	1	1	2	2	0	1	3
Billboard	1	1	1	1	2	0.2	0	2	0
Family member	1	1	1	1	0.4	1	2	1	0
Elderly clubs	1	0	0	2	1	1	2	1	0
Other government official	1	1	1	1	1	1	1	1	0
NGO	0.4	1	0	1	0.2	1	1	0.2	0
Traditional doctor	0	0	0	0	0	0	0	0	0
Other sources	4	3	6	5	4	5	3	6	5
	100	100	100	100	100	100	100	100	100
							n=127	n=515	n=101

Note: Total n = 1,141 and excludes 3 cases who never heard of AIDS and 27 cases who did not know which source of information was most important. Four persons gave more than one source of information. The first recorded answer is presented in the table.

<sup>a</sup> Educational levels - Low (No education or some lower elementary); Medium (Finished lower elementary or has at least some high elementary); High (At least some middle school or higher).

**Table 6 Known sources of information on HIV/AIDS by age and sex**

Source of information	% mentioned unprompted											
	Total	Age group			Sex		Age group and sex					
							20-39		50-59		60-74	
		20-39	50-59	60-74	Male	Female	Male	Female	Male	Female	Male	Female
Television	61	73	63	47	61	61	71	76	63	64	50	48
Government health personnel	25	33	23	18	26	24	31	35	24	23	22	17
Friends/acquaintances	43	38	42	48	37	48	35	42	35	49	41	54
Radio	31	40	28	23	34	28	38	43	34	22	30	19
Health volunteer	13	14	15	9	11	14	12	16	13	19	9	9
Brochures/pamphlets	8	13	5	4	8	7	13	13	5	6	7	3
Newspapers	25	36	24	15	29	22	36	37	29	20	21	12
Private clinic	7	10	5	5	7	7	7	13	6	5	7	5
Magazines	10	19	6	4	10	10	19	20	6	7	4	4
Billboard	7	12	4	4	9	5	15	9	5	4	5	3
Family member	6	5	5	8	6	7	4	6	6	6	7	9
Elderly clubs	3	1	2	5	3	3	1	1	1	3	5	5
Other government official	3	3	3	3	3	3	4	3	3	2	4	2
NGO	2	2	2	2	2	2	1	2	3	1	2	3
Traditional doctor	1	1	1	0	1	1	2	1	2	1	1	1
Others	16	16	18	13	16	15	17	14	18	18	14	14

Note: Total n = 1,141 and excludes 3 cases who never heard of AIDS and 27 cases who did not know which source of information was most important.

**Table 6 (Continued)**

Source of information	% mentioned prompted or unprompted											
	Total	Age group			Sex		Age group and sex					
		20-39	50-59	60-74	Male	Female	20-39		50-59		60-74	
							Male	Female	Male	Female	Male	Female
Television	93	98	93	89	96	91	98	98	96	90	95	86
Government health personnel	64	71	64	58	65	64	66	76	66	63	63	54
Friends/acquaintances	79	82	81	75	80	79	80	84	83	80	78	74
Radio	72	84	71	60	76	67	86	82	76	67	68	56
Health volunteer	47	51	49	40	47	46	47	54	46	54	49	34
Brochures/pamphlets	47	68	43	30	53	42	69	67	52	36	38	24
Newspapers	68	85	68	52	76	61	85	84	77	62	68	42
Private clinic	37	46	35	29	37	36	39	53	39	31	35	27
Magazines	45	66	39	29	50	40	67	65	46	35	39	23
Billboard	73	90	73	57	78	69	87	93	79	68	69	48
Family member	57	66	57	48	56	58	58	74	57	56	55	46
Elderly clubs	15	7	11	25	13	16	5	9	9	13	24	26
Other government official	30	31	31	29	33	28	30	32	35	27	36	23
NGO	13	14	16	10	13	14	15	14	15	18	9	11
Traditional doctor	15	16	13	15	15	14	15	16	15	12	15	16
Others	18	18	21	17	19	18	20	16	22	20	17	17

Note: Total n = 1,141 and excludes 3 cases who never heard of AIDS and 27 cases who did not know which source of information was most important.

**Table 7 Percentage giving correct answers to questions regarding modes of HIV transmission by age, sex, and residence**

AIDS knowledge question	% stating correct answer															
	Total	Age group			Age group and sex						Age group and residence					
					20-39		50-59		60-74		20-39		50-59		60-74	
		20-39	50-59	60-74	Male	Female	Male	Female	Male	Female	Rural	Urban	Rural	Urban	Rural	Urban
Get AIDS by having unprotected sexual relations with a PWA*** (q34)	98	99	97	97	99	99	98	96	99	95	99	99	97	97	95	98
Get AIDS from sharing needles used for drug injection with a PWA* (q32)	94	96	95	92	95	97	96	94	91	92	94	97	96	94	89	94
Get AIDS from tainted blood transfusion* (q25)	89	90	91	87	91	90	92	90	86	87	91	90	88	92	82	90
Get AIDS from coming into contact with the blood of a PWA, for example during care giving?*** (q28)	92	93	92	92	92	93	91	92	93	91	94	92	93	91	90	93
Newborn can get AIDS from being born to a PWA*** (q30)	89	93	88	87	93	94	89	87	85	88	91	94	93	85	90	86
Newborn can get AIDS from being nursed by a PWA mother*** (q31)	85	83	87	85	78	87	86	88	83	87	80	84	95	82	87	84
Get AIDS from PDA funeral** (q26)	83	89	84	77	89	90	88	81	81	73	94	87	81	85	74	78
Get AIDS from work or live nearby PWA** (q23)	70	74	73	63	73	75	75	71	65	62	74	76	75	80	61	63
Get AIDS from sharing meal with PWA** (q24)	69	72	75	60	74	71	78	72	64	56	76	70	80	72	63	57
Get AIDS by using the same toilet as a PWA** (q35)	67	78	64	58	82	75	71	57	68	49	79	78	68	62	56	59
Get AIDS by living in the same household with a PWA** (q36)	66	74	65	60	73	74	72	58	64	57	72	75	58	68	58	62
Get AIDS by sharing a drinking glass with a PWA** (q33)	57	66	62	44	69	62	68	57	51	39	65	67	60	63	45	44
Get AIDS from eating a meal prepared by someone who has the AIDS virus** (q27)	56	65	58	47	68	62	63	54	48	45	67	64	56	59	50	45
Get AIDS from mosquitoes that have bitten a PWA** (q29)	38	50	38	27	56	44	45	31	33	23	54	47	40	37	28	27
Total number	1171	398	368	405	193	205	176	192	192	213	141	257	134	234	153	249

Key:

\* Best answers are true or very possible. \*\* Best answers are false or not possible. \*\*\* Best answers are very or somewhat possible.

**Table 8 Percentage stating correct answer to questions regarding modes of HIV transmission by ever known or cared for PWA, and relationship with known PWA (Older persons age 50 and above)**

AIDS knowledge question	Total	% ever known PWA <sup>a</sup>		% relationship with PWA <sup>b</sup>							% ever lived with/cared for PWA <sup>c</sup>		
		Yes	No	Own child	Spouse	Other			Friends	Neighbors	Acquaintances	Yes	No
						Sibling	relatives						
Get AIDS by having unprotected sexual relations with a PWA***-q34	97	98	95	97	100	100	99	98	99	98	98	98	98
Get AIDS from sharing needles used for drug injection with a PWA* (q32)	93	93	95	93	100	90	94	35	94	92	93	93	93
Get AIDS from coming into contact with the blood of a PWA, for example during care giving?*** (q28)	92	93	89	90	63	90	94	90	93	94	91	94	94
Newborn can get AIDS from being born to a PWA*** (q30)	87	90	82	87	88	90	89	90	92	90	90	90	90
Get AIDS from tainted blood transfusion* (q25)	89	89	90	93	75	100	87	95	89	89	91	88	88
Newborn can get AIDS from being nursed by a PWA mother*** (q31)	86	88	83	90	75	90	91	85	89	88	93	88	88
Get AIDS from PDA funeral** (q26)	80	82	78	77	88	100	80	88	83	82	84	82	82
Get AIDS from sharing meal with PWA** (q24)	67	72	56	87	88	80	72	83	74	70	84	71	71
Get AIDS from work or live nearby PWA** (q23)	68	71	63	90	63	70	65	73	72	67	84	69	69
Get AIDS by using the same toilet as a PWA** (q35)	61	65	54	77	63	80	68	63	67	63	76	64	64
Get AIDS by living in the same household with a PWA** (q36)	62	65	58	80	75	90	59	70	68	62	74	64	64
Get AIDS by sharing a drinking glass with a PWA** (q33)	53	59	41	70	88	70	58	73	58	58	71	57	57
Get AIDS from eating a meal prepared by someone who has the AIDS virus** (q27)	52	56	44	63	63	50	54	63	58	57	67	55	55
Get AIDS from mosquitoes that have bitten a PWA** (q29)	32	36	27	43	38	40	36	45	36	37	47	34	34
Total number	773	519	238	30	8	10	141	40	277	196	58	464	464

<sup>a</sup> Total n = 757. 3 cases are excluded because they never heard of AIDS, 18 cases were not asked this question due to the presence of another person during interview.

<sup>b</sup> Only persons who stated that they knew someone who suffered from AIDS were asked this question. Total n = 702.

<sup>c</sup> Only persons who stated that they knew someone who suffered from AIDS were asked this question.

Key: \* Best answers are true or very possible. \*\* Best answers are false or not possible. \*\*\* Best answers are very or somewhat possible.

**Table 9 Percentage giving correct answers to questions regarding AIDS manifestation, treatment, and prognosis, by age and sex**

AIDS knowledge question	Total	Age group			Age group and sex					
		20-39	50-59	60-74	20-39		50-59		60-74	
					Male	Female	Male	Female	Male	Female
No cure for AIDS at present* (q42)	86	88	85	85	90	87	85	86	85	85
Infected persons may be asymptomatic* (q37)	66	72	66	59	77	66	67	66	58	60
Modern drugs exist that can lengthen the life of a PWA**** (q39)	71	77	72	65	77	76	70	74	66	64
Modern drugs are available to public that can prevent HIV contraction** (q38)	62	68	60	57	68	67	62	59	60	55
Traditional drugs exist that can prevent HIV contraction** (q40)	60	68	60	53	69	66	65	56	54	52
Traditional drugs exist that can lengthen the life of a PWA** (q41)	29	32	23	30	31	33	23	23	29	31
Total	1171	398	368	405	193	205	176	192	192	213

**Key:**

\* Best answers are true or very possible.

\*\* Best answers are false or not possible.

\*\*\* Best answers are very or somewhat possible.

\*\*\*\* Best answers are true or might be true.

**Table 10 Percentage giving correct answers to questions regarding AIDS manifestation, treatment, and prognosis by ever known PWA, relationship with PWA, and ever lived with or cared for a PWA (Older persons age 50 and above)**

AIDS knowledge question	Total	% ever known PWA <sup>a</sup>		% relationship with PWA <sup>b</sup>							% ever lived with/cared for PWA <sup>c</sup>	
		Yes	No	Own child	Spouse	Sibling	Other			Yes	No	
							relatives	Friends	Neighbors Acquaintances			
No cure for AIDS at present* (q42)	85	86	84	77	100	100	85	85	86	86	79	87
Infected persons may be asymptomatic* (q37)	62	64	60	57	75	50	66	70	68	63	60	65
Modern drugs exist that can lengthen the life of a PWA**** (q39)	68	72	61	73	75	70	77	78	73	72	69	73
Moderns drugs are available to public that can prevent HIV contraction** (q38)	59	63	51	70	63	50	62	60	65	64	62	64
Traditional drugs exist that can prevent HIV contraction** (q40)	57	61	49	80	50	60	60	48	60	60	71	60
Traditional drugs exist that can lengthen the life of a PWA** (q41)	27	27	27	33	38	40	26	23	27	22	34	26
Total number	773	519	238	30	8	10	141	40	277	196	58	464

<sup>a</sup> Total n = 757. 3 cases are excluded because they never heard of AIDS, 18 cases were not asked this question due to presence of another person during interview.

<sup>b</sup> Only persons who stated that they knew someone who suffered from AIDS were asked this question.

<sup>c</sup> Total n = 702.

Key: \*Best answers are true or very possible. \*\* Best answers are false or not possible. \*\*\* Best answers are very or somewhat possible. \*\*\*\*Best answers are true or might be true.

**Table 11 Percentage agreeing with statements about safe care-giving practices by age, sex and level of contact with a PWA**

Statement about caregiving	Total	Age group			Sex		Age group and sex						Ever known PWA		Ever lived with/cared for PWA <sup>A</sup>	
							20-39		50-59		60-74		Yes	No	Yes	No
		20-39	50-59	60-74	Male	Female	Male	Female	Male	Female	Male	Female				
Caregiver should wear plastic gloves if PWA has open sores or diarrhea (q43)	95	95	96	94	95	94	95	95	97	95	95	94	96	93	98	96
Caregiver should wear plastic gloves if PWA has no open sores or diarrhea (q44)	63	60	63	66	64	62	62	58	64	62	65	67	64	60	53	66
Caretaker of PWA with TB should wear a mask (q47)	94	93	97	92	94	94	93	94	98	96	92	92	95	94	95	94
Caretaker of PWA with no TB should wear a mask (q48)	39	32	35	50	38	40	32	32	33	38	48	52	38	42	24	40
Housemates of PWA can safely share (q49):																
Laundered clothes	33	43	33	22	40	26	50	37	41	25	28	16	35	27	45	33
Washed dishes	45	55	45	35	54	37	64	47	55	36	43	27	48	38	56	47
A washed drinking glass	45	56	45	35	54	37	64	48	54	36	46	26	49	36	59	48
A book	85	93	82	79	89	80	96	90	87	78	85	74	86	82	88	86
A pen	84	93	81	78	88	80	96	90	85	78	85	74	86	81	87	86
Clean PWA dishes (q49):																
As usual	16	17	18	14	20	13	19	15	23	14	18	11	17	15	25	16
Boil them	35	30	40	36	41	30	36	25	44	35	42	30	34	37	27	35
Keep separate	41	45	37	40	32	49	37	52	31	42	28	51	41	39	41	41
Other	6	7	4	8	6	6	7	4	2	6	9	7	6	6	6	6
Wash PWA clothes soiled by blood or body fluids (q49):																
As usual	5	6	5	5	6	4	6	5	5	5	6	3	5	4	8	5
Boil them	26	22	30	27	27	26	24	20	32	28	26	28	27	25	29	26
Wash separate	33	38	30	29	28	37	32	45	26	34	25	32	32	34	31	32
Throw away	25	22	26	28	27	23	24	20	29	22	29	27	25	25	26	25
Burn or bury	8	8	8	8	9	6	10	6	7	8	11	5	8	6	5	9
Other	1	2	1	2	1	2	1	3	1	1	2	2	1	2	0	1
Total number	1171	398	368	405	561	610	193	205	176	192	192	213	796	357	102	697

<sup>a</sup> Only persons who stated that they knew someone who suffered from AIDS are included.

**Table 12 Percentage agreeing with statements about HIV-related symptoms and testing by age, sex, and level of contact with a PWA**

Statement about HIV testing	Total	Age group			Age group and sex						Ever known PWA	Ever lived with or cared for PWA <sup>a</sup>
					20-39		50-59		60-74			
		20-39	50-59	60-74	Male	Female	Male	Female	Male	Female		
If a person suspects him/herself to be HIV positive, he/she should get an HIV blood test (q50)	91	93	91	90	90	96	89	93	91	89	92	91
Persons with the following symptoms should test for HIV (q51):												
Persistent skin rash and dark spots	86	89	87	83	85	92	91	82	84	82	88	90
Frequent colds, diarrhea and weight loss	84	91	83	77	86	96	85	81	77	77	86	86
Persistent headaches	62	65	59	63	65	64	59	59	62	64	65	68
Occasional headaches	29	22	29	35	21	22	28	31	33	36	31	37
Occasional diarrhea	28	27	27	29	23	30	23	30	28	30	29	30
Occasional cold and cough	22	18	21	26	18	17	19	23	26	26	23	27
Total number	1171	398	368	405	193	205	176	192	192	213	796	102

<sup>a</sup> Only persons who stated that they knew someone who suffered from AIDS are included.

**Table 13 Knowledge indices by age, sex, and province****For all respondents**

Characteristics	K-scale 1 (q23-36)	K-scale 2 (q37-42) manifestation, treatment, & prognosis	Fullscale (q23-42)
	Transmission Full index=14	Full index=6	All questions Full index=20
Total average score (n=1171)	10.54	3.74	14.28
Cronbach's reliability coefficient	0.72	0.33	0.70
Sex			
Men	10.83**	3.79	14.62**
Women	10.28	3.69	13.97
Age group			
20-39	11.21**	4.04**	15.25**
50-59	10.67	3.68	14.35
60-74	9.76	3.50	13.26
Province			
Chaing Mai	10.92	3.81**	14.73**
Rayong	10.69	4.08	14.78
Petchburi	10.65	3.81	14.46
Khon Kaen	10.37	3.67	14.04
Bangkok	10.37	3.58	13.96

\* f-test, statistically significant at  $p \leq 0.05$

\*\* f-test, statistically significant at  $p \leq 0.01$

**Table 13 (continued)**  
**For respondents age 50 and over**

Characteristics	K-scale 1 (q23-36)	K-scale 2 (q37-42)	Fullscale (q23-42)
	Transmission Full index=14	Manifestation, treatment, & prognosis Full index=6	All questions Full index=20
Total average score (n=773)	10.20	3.58	13.78
Cronbach's reliability coefficient	0.73	0.37	0.71
Sex			
Men	10.58**	3.62	14.20**
Women	9.85	3.55	13.40
Province			
Chaing Mai	10.79*	3.66**	14.45**
Rayong	10.35	3.96	14.31
Petchburi	10.34	3.58	13.92
Khon Kaen	9.83	3.55	13.39
Bangkok	9.99	3.43	13.42
Current residence			
Rural	10.20	3.79**	13.99
Urban or periurban	10.20	3.46	13.66
Level of education			
No education or some lower elementary	9.62**	3.31**	12.92**
Finished lower elementary or has at least some high elementary	10.17	3.60	13.77
At least some middle school or higher	11.07	3.86	14.93
Main lifetime occupation			
No occupation	9.85*	3.50	13.35
Farm related	9.87	3.71	13.58
Non-Farm	10.44	3.52	13.97

\* f-test, statistically significant at  $p \leq 0.05$

\*\* f-test, statistically significant at  $p \leq 0.01$

**Appendix 1: KAP Questionnaire**  
**Questionnaire on Knowledge Attitudes and Practices Related to AIDS**

Location of interview: \_\_\_\_\_ Province  
 \_\_\_\_\_ Amphoe  
 \_\_\_\_\_ Tambol  
 \_\_\_\_\_ Date questionnaire administered  
 \_\_\_\_\_ Interviewer

Please circle type of area of sample site:

1. Rural village
2. Sanitary district (sukapiban)
3. Town (tetsabaan)
4. Bangkok

Please circle target group for this interview:

1. Older person (aged 50 – 74)
2. Younger person (age 20-39)

*Instructions for selecting respondent if more than one person in the eligible age range of target age group is in the household:*

List the ages of each eligible respondent in the target age group from youngest to oldest:

- A. age in years \_\_\_\_\_
- B. age in years \_\_\_\_\_
- C. age in years \_\_\_\_\_
- D. age in years \_\_\_\_\_
- E. age in years \_\_\_\_\_

Then select respondent by using the table below.

Number of persons in target age group	Last digit in household address									
	1	2	3	4	5	6	7	8	9	0
2	A	B	B	A	B	A	A	B	B	A
3	B	A	C	B	C	A	C	B	A	B
4	C	A	D	B	A	C	B	A	D	C
5	E	C	D	A	B	D	B	C	A	E

*Interviewer instruction: Try to conduct this interview in private. If others are present, and they try to help the respondent answer, ask them not to help the respondent since we are assessing the respondent's own knowledge.*

Thank you for being willing to participate in our study. Our goal is to try to assess what older and younger persons know about AIDS. We'll ask you a number of questions and then jot down the answer that you give to us. Your participation is voluntary and the questionnaire is anonymous. We don't ask for your name anywhere on the form.

## Background of respondent

1. How old are you? (If respondent does not fall in the age of the intended target group, terminate interview.)  
\_\_\_\_\_ years old (in completed years)
2. (If age 50 or older) Have you ever attended an elderly club meeting?
  1. Yes
  2. No
3. Interviewer: circle the sex of respondent
  1. Male
  2. Female
4. What kind of area would you say you spent most time when you were a youth?
  1. Rural village
  2. Sanitary district (sukapiban)
  3. Town (tetsabaan)
  4. Bangkok
5. What is the highest grade of education you have completed?
  0. never attended school
  1. P1-P3
  2. P4-P7
  3. M1-M2, MS1-MS2
  4. M3, MS3
  5. M4-M5, MS4
  6. M6, MS5
  7. lower vocational
  8. upper vocational
  9. university
  10. Other (specify): \_\_\_\_\_
6. (If grade 4 or less): Are you able to read letters or newspapers comfortably, with difficulty, or not at all?
  1. can read comfortably
  2. can read with difficulty
  3. can not read letters and newspapers at all
7. Are you working now?
  1. Yes (specify occupation) \_\_\_\_\_
  2. No - stopped working due to old age ("retired")
  3. No - not working for other reason (state reason): \_\_\_\_\_
8. What has been your main occupation during your life? \_\_\_\_\_
9. Have you ever been a health volunteer?
  1. Yes, ever
  2. No, never
10. (If yes in question 9): Have you ever received training about AIDS?
  1. Yes
  2. No

11. What is your marital status?
1. Currently married or cohabiting
  2. Divorced
  3. Separated
  4. Widowed
  5. Never married
12. How many living sons and daughters do you have? (include step and adopted children)  
 \_\_\_\_ sons \_\_\_\_ daughters
13. How old is the oldest child? \_\_\_\_ completed years
14. How old is the youngest child? \_\_\_\_ completed years
15. How many children are living in the same house or compound with you now? \_\_\_\_
16. How many children are not living with you? \_\_\_\_

**Sources of information about HIV/AIDS**

17. Have you ever heard of AIDS?
1. Yes (go to question 18 directly)
  2. No (see special instructions below)

*Special instructions if respondent said no to question 17: Read all the sources in question 18 and confirm if respondent really never heard of AIDS from any. If respondent has heard of AIDS from any source, circle each source in the prompted response column and change answer to yes in question 17. If respondent really never heard of AIDS after going through sources, terminate interview.)*

18. Where all have you received information about AIDS? (*Circle all spontaneously mentioned sources in the first column and all additional prompted sources in the second column; if respondent did not receive information from the source, circle 3rd column.*)

Unprompted response	Prompted response	Not a source	Source of Information (Read after the respondent is finished giving unprompted sources).
1	2	3	1 Government health worker
1	2	3	2 Private clinic
1	2	3	3 Village volunteer (aw saw maw)
1	2	3	4 Traditional healer
1	2	3	5 Family member
1	2	3	6 Village headman or other government official
1	2	3	7 Non-government organizations/representatives
1	2	3	8 TV
1	2	3	9 Radio
1	2	3	10 Magazines
1	2	3	11 Newspapers
1	2	3	12 Street signs/billboards
1	2	3	13 Elderly clubs
1	2	3	14 Brochures (specify from where if possible):
1	2	3	15 Friend/acquaintance
1	2	3	16 Other (please specify): _____

19. Of the different sources from which you received information about AIDS, which one would you say was the most important for you? (Try to get only one answer. Write the corresponding source code from question 18 in the space below. If the respondent can not answer, enter 99 as the source code.)  
\_\_\_\_\_ source code of most important source

20. Has the information you heard about AIDS been useful for you?  
1. Yes  
2. No  
3. Other (specify): \_\_\_\_\_

21. Are you interested generally in knowing about AIDS?  
1. Yes  
2. No  
3. Other (specify): \_\_\_\_\_

22. Have you ever attended a lecture or presentation about AIDS?  
1. Yes  
2. No

### **Knowledge about how AIDS is transmitted**

*How likely do you think it is that a person will contract the AIDS virus from...*

23. Working or living near someone with the AIDS virus?  
1. Very possible  
2. Somewhat possible  
3. Not possible  
9. Don't know

24. Sharing a meal with someone who has the AIDS virus?  
1. Very possible  
2. Somewhat possible  
3. Not possible  
9. Don't know

25. Getting a blood transfusion that includes blood from someone infected by the AIDS virus?  
1. Very possible  
2. Somewhat possible  
3. Not possible  
9. Don't know

26. Attending the funeral of someone who has died from the AIDS virus?  
1. Very possible  
2. Somewhat possible  
3. Not possible  
9. Don't know

27. Eating a meal prepared by someone who has the AIDS virus?  
1. Very possible  
2. Somewhat possible  
3. Not possible  
9. Don't know

28. Having an open wound or cut come into contact with the blood of a person who has the AIDS virus, for example during care giving?
1. Very possible
  2. Somewhat possible
  3. Not possible
  9. Don't know
29. Being bitten by mosquitoes or other insects that have also bitten someone infected with the AIDS virus?
1. Very possible
  2. Somewhat possible
  3. Not possible
  9. Don't know
30. Being born to a mother who is infected with the AIDS virus?
1. Very possible
  2. Somewhat possible
  3. Not possible
  9. Don't know
31. Being nursed (breast fed) by a mother who is infected with the AIDS virus?
1. Very possible
  2. Somewhat possible
  3. Not possible
  9. Don't know
32. Sharing needles used for drug injection (e.g., heroin or amphetamines) with someone who has the AIDS virus?
1. Very possible
  2. Somewhat possible
  3. Not possible
  9. Don't know
33. Drinking from the same glass as an infected person?
1. Very possible
  2. Somewhat possible
  3. Not possible
  9. Don't know
34. Having sexual relations with a person who has the AIDS virus without using a condom
1. Very possible
  2. Somewhat possible
  3. Not possible
  9. Don't know
35. Using the same toilet as an infected person?
1. Very possible
  2. Somewhat possible
  3. Not possible
  9. Don't know
36. Living in the same household with a person with AIDS
1. Very possible
  2. Somewhat possible
  3. Not possible
  9. Don't know

## Knowledge about AIDS manifestation, treatment, and prognosis

Are the following statements correct or not?

37. A person can be infected with the AIDS virus and not have symptoms of the disease AIDS.
1. True
  2. Might be true
  3. False
  9. Don't know
38. (Modern) drugs/medicine(s) are now available to the public that protect a person from contracting AIDS.
1. True
  2. Might be true
  3. False
  9. Don't know
39. (Modern) drugs/medicine(s) exist now that can lengthen the life of a person infected with the AIDS virus.
1. True
  2. Might be true
  3. False
  9. Don't know
40. Traditional drugs/herbs/concoctions exist now that protects a person from contracting AIDS. (*circle only one answer*)
1. True
  2. Might be true
  3. False
  9. Don't know
41. Traditional drugs/herbs/concoctions exist now that can lengthen the life of a person infected with the AIDS virus
1. True
  2. Might be true
  3. False
  9. Don't know
42. There is no cure for AIDS at present. (*circle only one answer*)
1. True
  2. Might be true
  3. False
  9. Don't know

## Knowledge about safe care-giving practices

*Sometimes PWAs are cared for by other family members. I'd like to ask you some questions about your ideas on how one might do this.*

43. Should someone who cares for a PWA wear plastic gloves if the PWA has open sores or wounds or is soiled by diarrhea?
1. Yes
  2. No
  3. Other (*specify*) \_\_\_\_\_
  9. Don't know.

44. What if the PWA does not have open sores or wounds or is soiled by diarrhea, should the care taker wear plastic gloves?

1. Yes
2. No
3. Other (*specify*): \_\_\_\_\_
9. Don't know.

45. What is the proper way to clean the dishes used by a PWA?

1. As usual (same as for a non-PWA).
2. One must boil the dishes before they can be used again.
3. One should keep separate dishes for the PWA .
4. Throw away after each use.
5. Other (*specify*): \_\_\_\_\_
9. Don't know.

46. What is the proper way to wash the clothes of a PWA that have been soiled by blood, diarrhea, or other body fluids?

1. As usual (The same as for a non-PWA).
2. Boil them when washing.
3. The clothes should be washed separately.
4. The clothes discarded and not used again.
5. Other (*specify*): \_\_\_\_\_
9. Don't know.

47. Should someone who takes care of a PWA with TB wear a mask?

1. Yes
2. No
3. Other (*specify*): \_\_\_\_\_
9. Don't know.

48. What if the PWA does not have TB, should the care taker wear of mask?

1. Yes
2. No
3. Other (*specify*): \_\_\_\_\_
9. Don't know.

49. Can members in the same house with a PWA safely share the following objects with the PWA? (*ask about each separately*)

	Yes	No	Other (specify)	Don't know
A. Clothes that have been laundered	1	2	3 _____	9
B. Dishes that have been washed	1	2	3 _____	9
C. A glass that have been washed	1	2	3 _____	9
D. A book	1	2	3 _____	9
E. A pen	1	2	3 _____	9

50. If someone thinks he may have AIDS, is it better to go for a test to find out for certain or is it better not to be tested?

1. Better to be tested
2. Better not to be tested
3. Depends on circumstances (*specify*): \_\_\_\_\_
9. Don't know.

51. If someone has the following symptoms, should they get tested for having AIDS:

	Yes	No	Other (specify)	Don't know
A. Occasional headaches	1	2	3 _____	9
B. Occasional cold or cough	1	2	3 _____	9
C. Occasional diarrhea	1	2	3 _____	9
D. Frequent colds and coughs, with diarrhea and weight loss	1	2	3 _____	9
E. Persistent headaches	1	2	3 _____	9
F. Persistent rashes and dark spots	1	2	3 _____	9

52. Interviewer: Indicate if anyone else helped the respondent answer any of the prior questions relating to AIDS knowledge?

1. Yes
2. No

53. Interviewer: Indicate if any one else besides the respondent is present and listening to the interview at this point?

1. Yes (*End interview with closing statement.*)
2. No

### **Personal concerns about HIV/AIDS**

54. Have you ever worried about getting AIDS yourself?

1. Never
2. Some
3. A lot
4. Other (specify) \_\_\_\_\_

55. Have you ever been tested for the AIDS virus?

1. Yes
2. No
9. Don't know.

### **Experience with PWAs**

56. Have you ever known anyone who suffered from AIDS?

1. Yes
2. No (*Skip to the end of the questionnaire.*)

57. How many persons? \_\_\_\_\_

58. What is/was your relation to this (these) person(s)? (*circle all that apply*)

1. Child
2. Sibling
3. Other Relative
4. Friend
5. Neighbor
6. Acquaintance
7. Other (specify): \_\_\_\_\_

59. Have you ever lived in the same household or helped care for someone who had AIDS?

1. Yes (*Complete table below for each case.*)
2. No (*Skip to the end of the questionnaire.*)

PWA / PDA	Relation to respondent	Is this person still living	Is PWA/was PDA living with respondent?	Does/did respondent care for the PWA/PDA?	For how many months did respondent give care?
#1		1 Yes 2 No	1 Yes 2 No	1 Yes 2 No	___ months
#2		1 Yes 2 No	1 Yes 2 No	1 Yes 2 No	___ months
#3		1 Yes 2 No	1 Yes 2 No	1 Yes 2 No	___ months
#4		1 Yes 2 No	1 Yes 2 No	1 Yes 2 No	___ months

*(Note to interviewer: Give the respondent the opportunity to talk about their experience in caring for the PWA, if they wish to. Be sure not to leave them distressed at the end of the interview. Allow for ample time to wind down the interview.)*

*Closing: Thank you very much for helping us with our study. Do you have any questions or comments about what we asked?*

## Appendix 2: Coding Scheme for AIDS Knowledge Questions

The following are considered to be the best answers, and are scored 1 in the scales.

<i>Knowledge about how AIDS is transmitted</i>		<i>Knowledge about AIDS manifestation, treatment, and prognosis</i>	
q23	3 impossible	q37	1 true
q24	3 impossible		4 reasonably qualified
q25	1 very possible	q38	3 false
q26	3 impossible		6 reasonably qualified
q27	3 impossible	q39	1 true
q28	1 very possible		2 might be true
	2 somewhat possible		4 reasonably qualified
q29	3 impossible	q40	3 false
q30	1 very possible		6 reasonably qualified
	2 somewhat possible	q41	3 false
q31	1 very possible		6 reasonably qualified
	2 somewhat possible	q42	1 true
q32	1 very possible		4 reasonably qualified
q33	3 impossible		
q34	1 very possible		
	2 somewhat possible		
q35	3 impossible		
q36	3 impossible		