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Rural-urban Migration and Sexual Initiation of Never-married Young Adults from Kanchanaburi, Thailand

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This study examines whether migration has an effect on young adults' transition to becoming sexually experienced, using longitudinal data from the Migration and Health Project in Kanchanaburi, Thailand from 2005 and 2007. Survival analysis was used to explore the timing of sexual initiation of never married young adults, and Cox regression was used to examine the effect of migration on the hazard function of sexual initiation. Young adults who did not have sexual experience at T_0 (2005) were followed up at T_1 (2007) to examine whether they had experienced sexual initiation during the interim period. The results show that rural to urban migration was a strong factor in determining sexual initiation for both male and female never married young adults. Working, originating from urban districts and self-perception of being at risk of HIV also increased the likelihood of sexual initiation for males. Attitudes towards sex were found to have an effect as well; young females who were not sure if sex can be refused were more likely to have experienced sexual initiation compared to their male counterparts.

Keywords: *rural-urban migration, migration experience, migration and health, return migration, sexual initiation, HIV risk*

Introduction

Migration has been regarded as a facilitating factor for many health risk behaviors, whether directly or indirectly, and sexual behavior is no exception. Sexual experience may be initiated through the course of other experiences, and migration may be especially likely to facilitate sexual initiation because it may create some forms of freedom, provide opportunities, and enhance the feasibility of having sex.

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Migration often encompasses a time where many young adults change their course of life. This may be motivated by a need to address immediate socioeconomic difficulties or to work towards a lifetime goal of becoming equipped with higher education. Whatever the motivation, the transition often means greater freedom and autonomy: from being financially dependent on guardians to earning their own income, or from being in secondary school, where there are strict rules and regulations for behavior, to being in a university environment with more freedom. In both cases, they are exposed to new experiences. Under these transitions – from being under parental and other elders' control to independence– young adults may be less reluctant to initiate sexual relationships compared to when they were at home with their families. Therefore, for some young adults, migration can be a means to escape some forms of control, especially from their guardians, parents, and family.

Rural-urban migration can cause other changes as well. Rural young adults may be so motivated by the urbanized culture and norms that their behaviors can be affected, either social or sexual. It can be the excitement found in the new environment or the inability to adjust to the transition that affects their behavior. Sexual norms of Thai society have not provided as much space for females to freely engage in sexual activity as it has for males; therefore, men are more likely to initiate their first sexual experience at younger ages than their female counterparts. A survey in 1994 found the average age of sexual intercourse to be 18.4 for males and 20.6 for females (Singh, Wulf, Samara, & Cuca, 2000). Then, more than a decade later, a survey of those aged 18-24 found that the average age of first sexual intercourse had fallen to 17.1 for males and 18.2 for females (Chamratrithirong, Kittisuksathit, Podhisita, Isarabhakdi, & Sabaiying, 2007).

Studying the timing of sexual initiation of young adults may help to explain trends in sexual experience for a population. A number of studies have employed longitudinal techniques to collect data on sexual behavior and sexual initiation of young adults. The strength of studying sexual initiation in a longitudinal fashion is that it reduces recall problems. Respondents with no sexual experience at the time of the baseline assessment are followed through subsequent rounds of data collection to see if they have experienced sexual initiation (Cubbin, Santelli, Brindis, & Braveman, 2005; Roche et al., 2005; French & Dishion, 2003). However, one limitation of some previous studies of adolescents is that the study design omits questions about sexual behavior in Wave 1, and then conducts data analysis with sexual initiation as the outcome for the waves that follow (Burgard & Lee-Rife, 2009; Browning, Leventhal, & Brooks-Gunn, 2005). While most longitudinal studies of this type were conducted among very young people, increasing the likelihood that most respondents were sexually inexperienced at the first wave, they have rarely examined sexual initiation at older ages.

Migration has the potential to influence the social behavior of migrants. It may facilitate short-term relationships, exposure to new experiences, and motivations to take part (or choose not to take part) in new life choices. The impact of migration on sexual behavior is of interest both in the social sciences and in epidemiological studies. Migration can lead to engaging in sexual behavior which may involve risks. From this perspective migration of young adults and their subsequent sexual debut is an important subject of concern.

Migration of young adults is determined by their decision to make a change in their lives. After finishing school, young adults may move to continue their studies outside their hometown; many move to work somewhere else. Also, there are many young adults who move for

marriage or to start new sexual relationships. Young adults may perceive that their sexual behavior will not involve health risks and that it is culturally and socially accepted. Interacting with migration, the excitement of a new atmosphere, or even the inability to adjust to the changes after migration, can increase the probability of sexual initiation. For young adults, the exciting city life may motivate them to engage in sexual relationships, while for others the inability to adjust to the changes in the urban setting may reduce the possibility of engaging in sexual relationships.

It is likely that a proportion of young adults who migrate are not yet sexually experienced, and migration may play some role in this transition. Being away from the potential sexual partner, either for those who migrate or whose potential partners migrate, feeling insecurity in the new place, or difficulties in adjustment, for example, can cause a person not to start any intimate relationships.

Among these numerous issues around sexual behavior and migration, this study focuses only on sexual initiation and migration of young adults. It investigates this issue in two separate analyses. First, the timing of sexual initiation is examined for never-married young adults who have already experienced this transition at the time of the baseline survey, using data on age at first sex reported retrospectively. Then, young adults who have not had sex at the time of the baseline survey are followed through the next two years to examine how migration and sexual initiation are related (given that they do not marry during the period of observation). The focus is to see if young adults who migrate are more likely to have premarital sex. The research questions examined are:

- At what age do never married young adults in Thailand initiate first sex?
- Does migration affect the time to sexual initiation for young adults?
- Do migrants differ in their experience of sexual initiation compared to their counterparts who do not have migration experience?

Previous Research on Migration and Sexual Initiation

Only a few studies in the literature on sexual initiation have examined this association. South, Haynie and Bose (2005) analyzed data collected from students in middle and high schools in the U.S. in multiple waves from 1994 to 1996. They found a significant association between 'residential mobility' and the transition to sexual experience. However, they concluded that it is the behavioral composition of mobile adolescents' peer networks, as well as mobile adolescents' own risk behaviors, that best explains the association (South et al., 2005).

Predictors of sexual initiation

Strong predictors of young adolescents' sexual behavior, as found in many studies, are intention, perceived norms, and an environmental constraint variable such as time and being home alone (Buhi and Goodson, 2006). While the effect of intention and perceived norms were clearly seen to be positively related to the onset of sexual activity of young people, the effect of

environmental factors including parental involvement and monitoring/supervision on the sexual initiation of young people were not clearly shown, especially among young men.

Consequences of migration

Migration means moving from one social network—that of family and friends—to another social network. The network left behind may give young people support and a sense of identity and direction, as well as some forms of control – e.g. parental, familial, or school control. Therefore, moving may mean either losing support or gaining liberation. These losses or gains may generate an intention to have sex, change norms about sexual behavior, and change environmental factors including parental involvement and monitoring/supervision.

Dixon (1971) found in her study that marriage is earliest and most universal, at least for women, in those societies where the extended family is the ideal form of residence. The richer the country and the more urbanized it is, the more likely it is to have a predominantly nuclear household pattern and thus the less feasible marriage becomes. In this study, she determined 'feasibility of marriage' primarily by expectations regarding the financial and residential independence of the newly married couple and by the availability of resources (land, savings, and income) for meeting these obligations. The feasibility of engaging in sexual relationships may be determined by the same factors, but to a somewhat lesser degree, and may be in a different direction.

In the sense that residential independence means freedom from parental and guardians' control, the more a migrant is independent from their extended family, the higher the probability of having a sexual relationship. While to start a marital relationship a set of obligations need to be met and the resources for meeting these obligations have to be available, to start a sexual relationship requires a different level of obligations and therefore a different need of resources. Thinking about non-permanent sexual relationships, such as transactional sex where the giving of gifts or services provides sexual access, migrants who are working and earning their own income (and therefore, financially independent from their family), would have greater feasibility to have sexual relationships, compared to migrants who are not working and receiving monthly stipends from their parents or guardians. However, from any longer-term sexual relationship to clearly permanent sexual relationships, the obligations needed are almost comparable to those for marriage.

According to Dixon (1971), the availability of mates is determined primarily by the sex ratio of persons of marriageable age within endogamous groups, and by the method of mate selection (arranged match or free choice). In other words, the imbalances between the sexes at marriageable ages could delay marriage. Besides, the freedom of selecting mates can either delay or solidify the marriage, while matchmaking can increase the probability. However, applying this concept in explaining the probability of marriage and sexual initiation needs to bear in mind that 'mates' for a marital relationship and a sexual relationship means something somewhat different. For some people, a sexual relationship is not, or will never be, expected to be long-lasting, while for others it paves the way to a long-lasting bond of marriage.

Migration can alter the availability of mates either positively or negatively. On the positive side, migration to urban areas brings young, sexually active migrants to an environment with more

people of the same age group. This can increase the probability of having social contacts and sexual relationships, or even marriage in some cases. On the negative side, migration can result in sexual imbalance at the place of destination if young adults of one sex exceed the other, thus reducing the probability of having a sexual partner or marriage mates.

Dixon (1971) determined the desirability of marriage, or the strength of the motivation to marry as manifested by the availability of social and institutional alternatives to marriage and childbearing—and by the extent to which these alternatives are considered rewarding or involve penalties for marrying late or never. In a society where marrying is rewarding, the desirability will be stronger. While the motivation to marry may be heightened by social or cultural obligation, the strength of the motivation to have sexual relationships can be obstructed by norms that out-of-wedlock or pre-marital sex is less acceptable culturally, as it is in the Thai context. Therefore, migrants who are unmarried may be reluctant to have a sexual relationship, and this is particularly true for women.

The adaptation hypothesis has been applied to the relationship between migration and fertility –the fertility of migrants had been found to decline due to migration and improved living status (Kulu, 2005). If the sexual initiation outcome is similar, adaptation to the place of destination may affect the decision of young adults to start a new sexual relationship or to have another. But interactions with other variables may be important, as their social status at the time of migration may not culturally allow them to feel free to experience sexual initiation, for example if they are still unmarried or in school.

Goldstein (1973) analyzed the relationship between fertility and migration in Thailand in the 1970s. Comparing lifetime and 5-year migrants, he found that the lifetime migrants, who had moved to urban areas when the level of modernization was not as advanced, responded to changes in their environment by conforming more closely to older behavior patterns. On the other hand, the recent or 5-year migrants were more willing to forego the old in favor of new behavior patterns, including even lower fertility than non-migrants at place of destination. Similarly, young migrants from rural provinces may be more willing to forego the old behavioral norms about sexual initiation in favor of new ones. Then, as Goldstein noted, the behavior pattern of young migrants may change after additional years of residence in the destination. Longitudinal research is required to determine the exact patterns of behavior.

The present study argues that the effect of rural-urban migration on sexual initiation of young adults may be indirect rather than direct. In other words, it may be a consequence of migration or even the decision to migrate that is related to sexual initiation. Therefore, the theoretical framework is constructed under the concept that predictors of sexual initiation are assumed to be feasible consequences of migration. The consequences of migration from reviewed literature are argued to be possible predictors of sexual initiation. In other words, this present study argues that migration possibly has some effect on these predictors of sexual behavior.

Data and Analysis

This analysis utilizes data from the project 'Migration and Health', a longitudinal study conducted in 100 villages of Kanchanaburi Province, Thailand in the year 2005 and 2007. The project was implemented as a collaboration between the Institute for Population and Social Research, Mahidol University, Thailand and the School of Public Health and Tropical Medicine of Tulane University, USA. The project builds on the Kanchanaburi Demographic Surveillance System (KDSS), which completed five rounds of data collection from 2000 to 2004 with one-year intervals between rounds. The Migration and Health project followed the fifth round of the KDSS and surveyed the same population as did the surveillance system.

For the Migration and Health project, each round of data collection was spaced at two-year intervals. The first round of the project, conducted between October and December of 2005, is treated as baseline data. In 2007, the second round was conducted in the same households between October and December 2007. Respondents from the 100 villages who migrated to selected urban areas after the first round were followed and interviewed between January and May 2008. The selected urban areas include the urban districts of Kanchanaburi, Nakorn Pathom Province and Bangkok. In short, this data is comprised of the baseline data (2005) and the follow up data (2007), which includes the population of the 100 villages of Kanchanaburi who were still resident and those who migrated to selected urban areas.

The study used three structured questionnaires: (1) household questionnaire for face-to-face interviewing of the head of household; (2) individual questionnaire for face-to-face interviewing of all young adult members of the household; and (3) self-administered questionnaire containing questions about sexual behaviors of young adults. The individual questionnaire was used to interview all household members aged 18-29 in 2005 and age 18-32 in 2007; information about migration and other socio-demographic data was taken from this interview. Upon completion of the individual interviews, all eligible respondents were asked if they would consent to answer another self-administered questionnaire on their sexual behavior. Those who agreed to complete the sexual behavior questionnaire did so by self-administration and in private. The outcome variable of this analysis – sexual initiation – was taken from the question asking if the respondents had ever had sex (yes or no) by the time of the survey.

In the 2005 baseline, 5,042 out of 5,223 respondents or almost 97 percent agreed to answer the self-administered questionnaire on sexual behavior. In 2007, among 6,122 respondents, 5,597 or around 91 percent of them provided informed consent to complete the sex questionnaire. The total number of respondents whose data (including socio-economic status) can be traced in both rounds is 2,582. The total number of never married young adults, out of 2,582, was 670 (351 males and 319 females); these are the focus of this present paper. Of these 670, 392 respondents whose sexual initiation had not occurred by the year 2005 and who did not marry by 2007 are then selected for the multivariate analysis to observe their transition to sexual initiation by the year 2007.

To compare the time to sexual initiation of young adults with migration experience with that of young adults without migration experience, survival analysis is conducted by disaggregating migration experience. The survival analyses thus focus on the distribution of survival times. Then Cox regression is used to investigate the effect of the independent variable—migration

experience—on the timing of sexual initiation of young adults. At the last stage, a logistic regression model is fit to examine the effect of migration experience in predicting sexual experience between the two surveys. For sexual experience, the respondents are categorized into those who have sexual experience before 2005 and those who did not yet have sexual experience by 2005. Migration experience is measured after 2005 (current rural-urban migrants, return migrants and non-migrants). This additional analysis helps support the assumption applied in the present study that migration takes place before sexual initiation.

One limitation of these analyses is that we do not know the exact timing of sexual initiation vis à vis the timing of the main predictor, i.e. migration. Migration experience is measured for the period from July 2004 to December 2007, using a broad definition. Any move from the respondent's place of residence in 2005 in Kanchanaburi, including short-term migration and also migration within the province, was counted as migration. Sexual initiation may have occurred any time during the same period. However, information on the timing of sexual initiation was reported only as the age in full years when first sexual experience occurred, while the data on migration experience is reported month by month during the full period. Thus the study is able to investigate whether migration experience is associated with sexual initiation when the two events occurred during the same period, but it cannot establish which experience took place first. In other words, it cannot distinguish if migration happens and then young adults have sex, or they have sex before they migrate.

These limitations are minimized in the second analysis, which only examines those who had not yet experienced sexual initiation at the first round of data collection. It takes advantage of the longitudinal data to further examine the association of migration and the sexual initiation outcome in the time between surveys, using information about the respondent at the beginning of the period as predictors. However, it should be remembered that only respondents who were sexually inexperienced at the time of the first survey and who remained unmarried throughout the period are included in this analysis. While this focus serves the objectives of the study, it limits the ability to have a good distribution of respondents by migration experience, and to find statistically significant relationships for predictor variables.

Survival Analysis of the Timing of Sexual Initiation

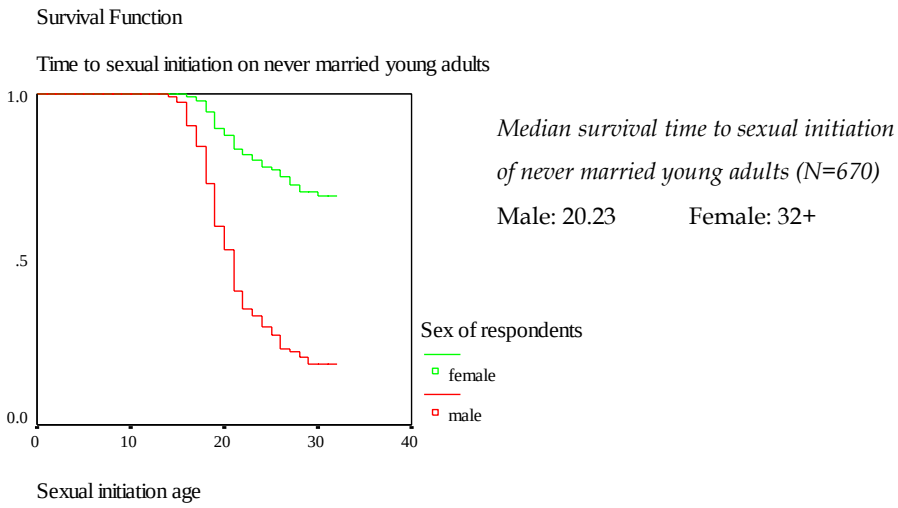
The survival function of time to sexual initiation for never married respondents is shown in Figure 1, and includes 670 respondents. It is clearly seen that males have a lower median age at first sexual initiation than do females. The figure is based on a truncated life table with interval start time at 12 years old for males and 15 years old for females; these are the lowest ages at sexual initiation found for male and female never married young adults. In general, males initiated sexual experience earlier than females. For unmarried males the median age—when 50% of the sample had experienced sex—is 20.2 years For female young adults who have not yet married the median age is more than 32 years, meaning that more than 50% did not yet have sex by the end of the period of observation. The highest numbers experiencing sexual initiation occur at around age 17-18 for both males and females. However, at that highest number of terminal events, the number for females do not as peak as shown by their male counterparts.

About 30 percent of males were censored –i.e. withdrawn from the model because the terminal event (sexual initiation) did not occur—compared to over 76 percent of females. Censorship occurs either when the respondent is interviewed or when the respondent marries. Thus, the majority of never married females do not experience sexual initiation outside of marriage, while a large proportion of never married males do so.

The cumulative proportion surviving – which is the probability of surviving at least until the beginning of the specified interval without experiencing the terminal event – is used to estimate the survival function shown in Figure 1. For never married males, about half experienced sexual initiation in the interval of 19-20 years old. Meanwhile, more than half of never married female young adults still had not experienced sexual initiation by the time the period of observation ended.

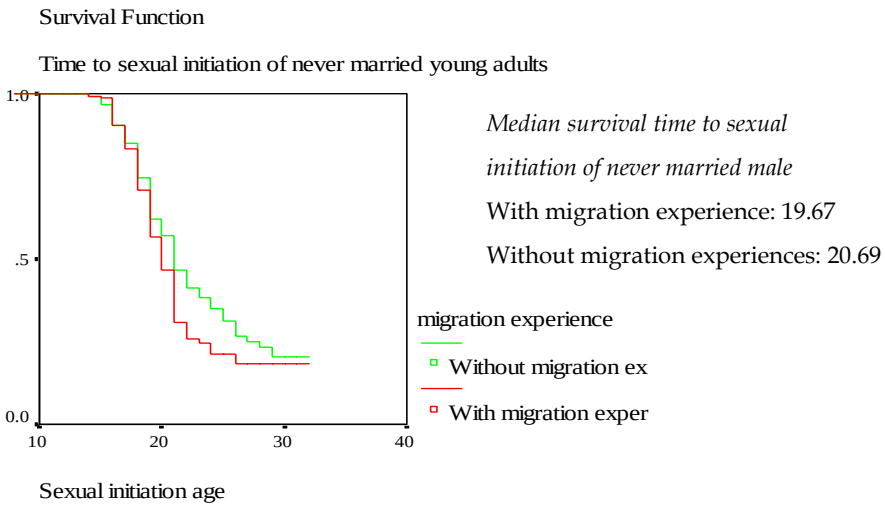
Compared with other studies conducted in Thailand during the same period, respondents in the present study experienced first sex at a later age. The National Sexual Behavior Survey of Thailand (NSBS) (2007) found the average age of first sexual intercourse for males to be 17.1 and for females to be 18.2 (Chamratrithirong et al. 2007), However, it should be remembered that median survival time to sexual initiation refers to the time when half of the studied population has initiated sex, which is different from the mean age at first sex for those who have already had sex. This is because survival analysis includes the experience of those who have not yet had sex. If computed in the same way as the NSBS, the mean age at first sex among young adults who already had sex in the Kanchanaburi data was 18.6 for males and 18.9 for females—still slightly higher than found in the NSBS. Also, while the National Sexual Behavior Survey examined the sexual behavior of young people in the whole kingdom, other studies as well as this present one provide information from local populations. A study conducted in the North of Thailand had a similar median age at first sex of this present study, that is, 17 for males and 18 for females, though it was a sample of younger adolescents in school (Liu et al. 2006). It is interesting to note here also that young adolescents in Bangkok experienced sexual initiation much sooner than those from rural provinces. A survey among students in school who were aged between 15 to 22 years old from the Behavioral Surveillance Survey (BSS) in Bangkok 2009, obtained an average age at first sex of about 15 years old (Srivanichakorn, Teptien, Wongsawas, Trakulwong, & Tasee, 2009). In general the evidence shows that rural populations become sexually experienced later than urban populations. Gupta and Mahy (2001) rejected this hypothesis and found that urban residence was associated with a reduction by about half in the probability of first sex before age 18 in Côte d'Ivoire, Ghana, Mali, Senegal and Zimbabwe, similar to what was found by Mazengia and Worku (2009), revealing that early sexual initiation is more likely among rural than urban youths. However, a contradictory result is seen in a study in Thailand, revealing that young adults living in urban areas were more likely than those living in rural areas to report ever having had sexual experience (Rasamimari, Dancy, Talashek, & Park, 2007).

Figure 1: Timing to sexual initiation of never married young adults, by sex of respondents (N=670)



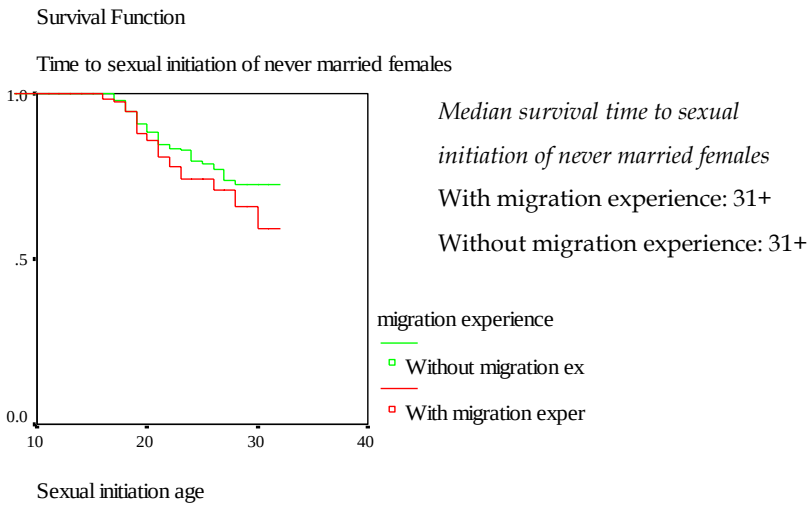
To compare the timing of sexual initiation between never married respondents with and without migration experience (N=670), survival analysis for males is presented in Figure 2. The interval start time (lowest reported age of sexual initiation) is 13 years old for males with and without migration experience, and the highest number of events occurs in the same interval for migrants and non-migrants, i.e. 19-20 years old. About 25 percent of male migrants did not experience sexual initiation by the end of the observation period, compared to over 34 percent of males without migration experience. Thus, never married males with migration experience were more likely to experience first sex than non-migrants.

Figure 2: Timing to sexual initiation of never married males by migration experience (N=351)



For never married young females (Figure 3), the interval start time of those with migration experience is one year earlier than those without migration experience, at age 15 and 16 respectively. At the end of observation period, over 78 percent of young females without migration experiences are still sexually inexperienced. The percentage is slightly lower for females with migration experiences, which is about 75 percent. The peak age, with the highest frequency of events, is around 18 years old for both groups.

Figure 3: Timing to sexual initiation of never married females by migration experience (N=319)



Comparing males and females, these results indicate that never married males with migration experience have a median age at sexual initiation of about 20 years old, and those with migration experience on average had sex sooner than those without migration experience. For females, both groups had less than 50% reach sexual initiation by the end of the observation period, so that the median age is higher than the upper age of the sample. It should be remembered that females exit the survival model if they marry before experiencing sexual initiation, so that the median age is calculated based only on females who remain unmarried. And for females, the differentials between those with and without migration experience are not large.

The time-constant Cox regression model is used to examine the effect of migration on the hazard of having sexual experience before marriage for young adults. As seen in Table 1, 69.2 percent of never married males and 22.9 percent of never married females are uncensored, meaning that they experience the event of interest (sexual initiation). While all cases are employed for calculating the baseline hazard function, only cases that experienced the event are used to compute the covariate regression coefficients. The covariate in this model is migration experience in the period 2005 to 2007. The -2 log likelihood ratio test shows that the covariate in the model is statistically significant ($p<.05$) for males but not for females (p value = .256). The hazard function indicates the probability that the event, i.e. sexual initiation, will occur within each time unit—in this case, year of age—given that an individual has survived up to the beginning of the interval. For males, the estimated hazard in the migration experience group increases by exp (.272) = 1.132 times compared to the no migration experience group. In other

words, males with migration experience are 1.13 times more likely to experience sexual initiation than those without it. The estimated hazard for females in the migration group is at a similar level to that of males, but the hazard is not statistically significant.

Table 1: Cox regression analysis: Effect of migration on time to sexual initiation of never married young adults, by sex of respondent

Covariates	Male (N=351)			Female (N=319)		
	Exp(B)	Sig.	*95% CI for Exp(B)*	Exp(B)	Sig.	*95% CI for Exp(B)*
Migration						
With migration experience	1.132	.037	[1.016 - 1.694]	1.317	.256	[.819 – 2.119]
Without migration experience	*Ref.*					

Multivariate Analysis of the Probability of Sexual Initiation

Variables included in the logistic regression model of whether sexual initiation occurred in the period between surveys are listed in Table 2. Most of the variables are measured at $Time_0$ (2005). The small sample size poses limitations in categorizing these variables, and so most of the independent variables are divided into only two or three categories.

While the socio-demographic variables are self-explanatory, the attitude variables included in the analysis require some explanation. Attitude towards social connectedness was measured by asking how often the respondent experienced various aspects of friendship and support, measured on a 5-point scale ranging from "never" to "all the time". Overall alpha for the social connectedness scale was .84. To measure urban attitudes, respondents were asked whether they agreed or disagreed with statements about positive and negative aspects of urban life (alpha .73). The last two variables are related to thoughts and perceptions of respondents towards sexual activity, i.e. whether sex can be refused and whether the respondents perceived being at risk of HIV infection. The first question was asked differently for males and females. Males were asked if their partners could refuse to have sex with them, while females were asked if they could refuse to have sex with their partners.

Table 2: Independent Variables measured at $Time_0$ in the Logistic Regression Analysis

Variables	Definition	Coding
Age in 2005	Age of respondent	Continuous
Education	Educational level	1=Lower education 2=Higher education
Work	Work status	1=Working 2=Not working
Original residence	Residence	1=Urban area 2=Rural area

Variables	Definition	Coding
Living with parent	Living arrangements	1=Live with both parents 2=Live with only one parent 3=Live with others
Social connectedness	Attitudes towards social connectedness	1=Low 2=Medium 3=High
Urban attitudes	Attitudes towards life in urban destinations	1=Low 2=High
TV Watching	How often the respondent spends leisure time watching TV	1=Regularly 2=Not regularly
Pub	Whether the respondent ever spends leisure time going to pubs and drinking	1=Yes 2=No
Self-assessment HIV risk	Respondent's self-assessment of whether they are at risk of HIV	1=No HIV risk 2=At HIV risk 3=No comment
Sex can be refused or not	Respondent's opinion whether sex can be refused if one partner doesn't want it	1=Every time 2=Not every time 3=No comment

Bivariate analysis was first conducted to determine if there are significant differentials in characteristics of never married young adults with different types of migration experience. Current rural-urban migrants are those who migrated to urban destinations (i.e. Bangkok, Nakhon Pathom and urban districts of Kanchanaburi) and remained at the destination at $Time_1$. Return migrants refers to those who had moved from their place of origin during the interval and then returned to their place of origin by $Time_1$. Finally non-migrants are those who did not migrate between $Time_0$ and $Time_1$. The results are presented in Table 3.

Age has a statistically significant relationship with migration experience during 2005 to 2007 for both males and females: the mean age of rural-urban migrants is significantly younger that of non-migrants and return migrants. The mean age of rural-urban migrants is about 19, while non-migrants are the oldest group and females are older on average than males. The average age of 21 for males and 23 for females implies that, if they are return migrants, they may be young adults who have already finished school and choose to work at their place of origin after migrating for study away from home. Meanwhile, some of the younger rural-urban migrants are those who are still in school.

Education level is statistically significant for both males and females in explaining whether migration occurred. A larger proportion of migrants had higher educational attainment than non-migrants. For females, rural-urban migrants and non-migrants are similar in terms of education level, while a slight difference is seen among return migrants. On the other hand, the differentials in education levels of male young adults with different migration experiences are not significant.

Significant differentials are seen in work status for both males and females. Most rural-urban migrants, both male and female, are working, while the majority of male and female non-migrants are not working. The male return migrants tend to be not working, while female return migrants are working.

Table 3: Bivariate analysis: Migration experience and selected characteristics of never married young adults from Kanchanaburi

	Male (N=133)						Female (N=256)					
	Rural-urban migrant (n=17)		Return migrant (n=16)		Non-migrant (n=100)		Rural-urban migrant (n=48)		Return migrant (n=14)		Non-migrant (n=194)	
	%	N	%	n	%	n	%	n	%	n	%	N
Age												
Mean	18.7		20.3		21.1		19.3		19.1		23.1	
Std. Deviation	.86		2.08		3.08		2.53		1.14		3.74	
Mean difference Sig. level			.005						.000			
Education												
Primary or below or no education	0	0	37.5	6	42.0	42	2.1	1	7.1	1	24.2	47
Higher than primary school	100	17	62.5	10	58.0	58	97.9	47	92.9	13	75.8	147
Sig. (2-tailed)				*.004*						*.001*		
Work												
Working	11.8	2	68.8	11	72.0	72	18.8	9	14.3	2	65.5	127
Not working	88.2	15	31.3	5	28.0	28	81.3	39	85.7	12	34.5	67
Sig. (2-tailed)				*.000*						*.000*		
Original residence												
Urban area	58.8	10	25.0	4	37.0	37	27.1	13	50.0	7	38.1	74
Rural area	41.2	7	75.0	12	63.0	63	72.9	35	50.0	7	61.9	120
Sig. (2-tailed)				*.177*						*.207*		
Living with parent												
Both parents	70.6	12	62.5	10	76.0	76	68.8	33	78.6	11	70.6	137
Only one parent	17.6	3	25.0	4	16.0	16	14.6	7	21.4	3	20.6	40
No parent	11.8	2	12.5	2	8.0	8	16.7	8	0	0	8.8	17
Sig. (2-tailed)				*.829*						*.308*		
Social connectedness												
Low	11.8	2	12.5	2	27.0	27	8.3	4	0	0	13.9	27
Medium	47.1	8	62.5	10	47.0	47	58.3	28	57.1	8	53.6	104
High	41.2	7	25.0	4	26.0	26	33.3	16	42.9	6	32.5	63
Sig. (2-tailed)				*.336*						*.496*		
Urban attitudes												
Low	82.4	14	93.8	15	82.0	82	83.3	40	92.9	13	89.7	174
High	17.6	3	6.3	1	18.0	18	16.7	8	7.1	1	10.3	20
Sig. (2-tailed)				*.497*						*.405*		
TV Watching												
Regularly	88.2	15	62.5	10	65.0	65	79.2	38	71.4	10	75.3	146
Not regularly	11.8	2	37.5	6	35.0	35	20.8	10	28.6	4	24.7	48
Sig. (2-tailed)				*.149*						*.789*		
Pub												
Yes	47.1	8	37.5	6	40.0	40	35.4	17	42.9	6	26.8	52
No	52.9	9	62.5	10	60.0	60	64.6	31	57.1	8	73.2	142
Sig. (2-tailed)				*.830*						*.260*		
Self-assessment HIV risk												
No HIV risk	58.8	10	81.3	13	71.0	71	70.8	34	78.6	11	72.7	141
At HIV risk	23.5	4	6.3	1	15.0	15	20.8	10	14.3	2	14.4	28
No comment	17.6	3	12.5	2	14.0	14	8.3	4	7.1	1	12.9	25
Sig. (2-tailed)				*.662*						*.725*		
Sex can be refused or not												
Every time	41.2	7	56.3	9	20.0	20	25.0	12	42.9	6	24.7	48
Not every time	41.2	7	25.0	4	49.0	49	70.8	34	57.1	8	51.1	99
No comment	17.6	3	18.8	3	31.0	31	4.2	2	0	0	24.2	47
Sig. (2-tailed)				*.022*						*.004*		

Males and females also differ among migration categories by sexual attitudes. A large proportion of males who are rural-urban migrants believe that sex can be refused every time, while for females a large proportion of non-migrants had no comment to this question.

Two logistic regression models are analyzed. The first model is a one-predictor model that only includes migration. For the second model, all other independent variables are included. The analyses are done separately for males and females, and the results are presented in Table 4.

Table 4: Odds ratios and 95% confidence intervals from logistic regression analyses assessing the risk of never married respondents initiating sex in the period 2005-2007, by sex of respondent and selected characteristics

Predictors	Never married male (N=133)				Never married female (N=256)			
	Model 1		Model 2		Model 1		Model 2	
	Exp(B)	Sig.	Exp(B)	Sig.	Exp(B)	Sig.	Exp(B)	Sig.
Migration experience								
Rural-urban migrant	**6.375**	**.001**	5.365	.028	**3.643**	**.040**	2.879	.240
Return migrants	1.889	.322	2.385	.281	5.222	.057	2.992	.319
Non migrant (Ref.)								
Age in 2005			**.701**	**.011**			**.631**	**.018**
Education								
Higher education			1.720	.465			.537	.580
Lower or no education (Ref.)								
Work								
Not working (Ref.)								
Working in 2005			3.688	.071			2.580	.354
Original residence								
Rural area (Ref.)								
Urban area			**4.179**	**.015**			1.736	.447
Living with parent								
Both parents (Ref.)								
Only one parent			1.500	.564			2.198	.353
No parent			.430	.491			.352	.432
Social connectedness?								
High (Ref.)								
Low			1.045	.956			.353	.426
Medium			1.317	.654			.963	.957
Urban attitudes?								
High (Ref.)								
Low			.625	.494			.588	.664
TV Watching								
Not regularly (Ref.)								
Regularly			1.013	.983			4.613	.190
Pub								
No (Ref.)								
Yes			2.001	.220			**8.832**	**.006**
Self-assessment HIV risk								
No HIV risk (Ref.)								
At HIV risk			3.312	.094			1.469	.635
No comment			1.787	.512			.000	.997
Sex can be refused or not								
Every time (Ref.)								
Not every time			1.100	.884			2.296	.374
No comment			.292	.130			10.178	.063

Among males, rural-urban migrants are slightly more than 6 times (6.375) more likely than non-migrants to have initiated sex between 2005 and 2007. The odds slightly decrease when other variables are controlled. The odds of unmarried female rural-urban migrants are also significantly higher, almost 4 times (3.643). However, the effect of migration experience among females is no longer significant when other variables are controlled. Increased age is related to a decreased probability of sexual initiation for both males and females. The odds of having sex for males decreases 30 percent ($p<.05$) and for females 37 percent ($p<.05$) with each increased year of age. Previous studies of sexual behavior among the young population have shown different results – an increase in age raises the probability of having sex (Chamratrithirong, et al., 2007). However, for young adults in this study, as age increases, the chance to have sexual experience is lessened.

Other than migration experience and the age of respondents, the model shows that working, originating from an urban district and perceiving oneself to be at risk of HIV increase the likelihood of sexual initiation for male young adults, while these factors were not significantly related to the probability of sexual initiation for females.

Replying 'no comment' to whether sex can be refused rather than 'every time' significantly increases the probability of sexual initiation for females (10.178, $p<.05$). Perhaps females do not know or are not sure if sex can be refused; they may not perceive that sexual relationships can be equally controlled by both partners but rather feel that it is the decision of the male partner. This, therefore, leads to a higher probability of having sex as well as the vulnerability to unwanted sex

Conclusion and Discussion

Among never married respondents aged 18 to 32 from Kanchanaburi province, male young adults experienced sexual initiation earlier than female young adults. The survival function of time to sexual initiation for never married respondents shows that males have a lower median age at first sexual initiation than do females: about 20 years old for males compared to more than 32 years old for their female counterparts. However, the fact that over 76 percent of females were censored –i.e. withdrawn from the model because the terminal event did not occur—indicates that the majority of unmarried males become sexually experienced while their female counterparts do not. It should be remembered that, among young adults aged 18 to 32 years old who have not yet married, those at older ages are less typical; and that many of the censored female cases are withdrawn from the model because they marry before experiencing sexual initiation.

When taking migration experience into account, a larger proportion of never married males and females who migrated between the two surveys had first sex than those who did not. And for males, those who migrated have first sex earlier than those who did not. The median age of having sexual initiation is 19 year old for males. For females, though it is observed that those with migration experience are more likely to initiate sex, the median age at first sex of those who migrated and those who did not are not significantly different.

In the Cox regression model, for males, the estimated hazard of sexual initiation among migrants was 1.132 times that of non-migrants, and the difference was statistically significant. Again, the logistic regression model revealed that rural-urban male migrants are more likely to have initiated sex during the period between the two surveys. However, the effect was statistically significant only in the model when other variables were not controlled. Though the Cox regression model did not show a significant effect of migration on sexual initiation for females, the logistic regression found that rural-urban migration during the period between surveys increased the likelihood of females who were sexually inexperienced in 2005 to become sexually experienced in 2007. Again, the difference disappeared when other variables were controlled.

While the limited number of cases affected the number of variables that could be included in the models, the fact that the significance of the effect of migration experience on sexual initiation disappeared when other variables were added suggested that there should be further analysis to test for interactions between migration and other factors. For example, it is interesting that female return migrants are about 5 times more likely to have initiated sex during 2005 to 2007, compared to unmarried female non-migrants. In other words, it appears that females tend to come back home to experience sexual initiation at their place of origin rather than to have sexual experiences during migration. Though this is not statistically significant, it implies that networks and migration ties between origin and destination might be more important and influential for women; tight knit, family-based networks for women may be safer venues for migrating and, in turn, 'protect' women from the impact of migration on risky behavior (Curran & Saguy, 2001).

Referring to the limitations mentioned in the data and analysis section, this study shows that migration experience is associated with sexual initiation when the two events occurred during the same period, but cannot establish which experience took place first. In other words, it cannot distinguish if migration happens and then young adults have sex, or they have sex before they migrate. Regarding the main finding, it is suspected that migrant men and women may be more likely to remain unmarried than non-migrant men and women, thus the future study may consider providing them a wider "exposure time" to experiencing premarital sexual initiation if they stay unmarried for longer periods of time.

References

Browning, C. R., Leventhal, T., & Brooks-Gunn, J. (2005). Sexual initiation in early adolescence: The nexus of parental and community control. *American Sociological Review,* 70, 758-78.

Buhi, E.R., & Goodson, P. (2007). Predictors of adolescent sexual behavior and intentions: a theory-guided systematic review. *Journal of Adolescent Health*, 40(1), 4-21.

Burgard, S. A. & Lee-Rife, S. M. (2009). Community characteristics, sexual initiation, and condom use among young black South Africans**.** *Journal of Health and Social Behavior*, 50(3), 293-309.

Chamratrithirong, A., Kittisuksathit, S., Podhisita, C., Isarabhakdi, P. & Sabaiying, M. (2007). National *Sexual Behavior Survey of Thailand 2006*. Salaya: Institute for Population and Social Research, Mahidol University (IPSR Publication No. 338).

Curran, S.R. & Saguy, A.C. (2001). Migration and cultural change: A role for gender and social networks. *Journal of International Women's Studies*, 2(3), 54–77.

Cubbin, C., Santelli, J., Brindis C.D., & Braveman, P. (2005). Neighborhood context and sexual behaviors among adolescents: findings from the National Longitudinal Study of Adolescent Health. *Perspectives on Sexual and Reproductive Health*, 37(3), 125–134.

Dixon, R. B. (1971). Explaining cross cultural variations in age at marriage and proportions never married. *Population Studies,* 25(2), 215-233.

French, D. C. & Dishion, T. J. (*2003*). Predictors of early initiation of sexual intercourse among high-risk adolescents. *Journal* of *Early Adolescence*, 23*(3),* 295-315.

Goldstein, S. (1973). Interrelations between migration and fertility in Thailand. *Demography,* 10(2), 225–241.

Gupta, N., & Mahy, M. (2001, August). Sexual initiation among adolescent women and men: Trends and differentials in Sub-Saharan Africa. Paper prepared for the XXIVth IUSSP General Population Conference. Salvador da Bahia, Brazil.

Kulu, H. (2005). Migration and fertility: Competing hypotheses re-examined. *European Journal of Population,* 21, 51–87.

Liu, A., Kilmark, P., Jenkins, R.A., Manopaiboon, C., Mock, P.A. & Jeeyapunt, S. (2006). Sexual initiation, substance use, and sexual behavior and knowledge among vocational students in northern Thailand. *International Family Planning Perspectives*, 32(3), 126–135.

Mazengia, F. & Worku, A. (2009). Age at sexual initiation and factors associated with it among youths in North East Ethiopia. *Ethiopian Journal of Health Development,* 23(2), 154-162.

Rasamimari, A., Dancy, B., Talashek, M. & Park, C.G. (2007). Predictors of sexual behaviors among Thai young adults. *Journal of the Association of Nurses in AIDS Care,* 18(6), 13-21.

Roche, K.M., Mekos, D., Alexander, C.S., Astone, N.M., Bandeen-Roche, K., & Ensminger, M.E. (2005). Parenting influences on early sex initiation among adolescents: How neighborhood matters. *Journal of Family Issues*, 26(1), 32–54.

Singh, S., Wulf, D., Samara, R., & Cuca, Y. P. *(*2000*)* Gender differences in the timing of first intercourse*:* Data from 14 countries. *International Family Planning Perspectives,* 26(1), 21–28, 43.

South, S. J., Haynie, D. L., & Bose, S. (2005). Residential mobility and the onset of adolescent sexual activity. *Journal of Marriage and Family*, 67(2), 499-514.

Srivanichakorn, S., Teptien, B., Wongsawas, S., Trakulwong, P., & Tasee, P. (2009). The Behavioral Surveillance Survey of 7 Target Groups in Bangkok, 2009 (การศึกษาพฤติกรรมที่สัมพันธ์กับการติดเชื้อเอชไอวี ใน 7 กลุ่มประชากร เป้าหมายปี 2552). Nakhon Pathom: ASEAN Institute for Health Development, Mahidol University. (in Thai)