Abstract

Migration and health of young adults 15-29 years old: an evident from Kanchanaburi Demographic Surveillance System (DSS), Thailand

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Neoclassical migration theory states that migration will result in improved economic well-being for migrants and their families. In this perspective health status may be a non-monetary consequence of movement. It is expected that health status of migrants would be worse than non-migrants because they are unfamiliar with the environment at the destination. This study is based on data of 6,973 young adults aged 15-29, living in the Kanchanaburi DSS. Health status: social functioning, emotional well-being and its role limitations, and pain, are measured by SF36, The findings are that lifetime internal migrants do worse than non-migrants on the health status indicators, but the opposite true for lifetime cross-border migrants, the majority of whom are from Myanmar. This is perhaps because the cross-border migrants are selected from among the most physically and emotionally healthy. However, focused studies on whether the cross-border migrants perceive the good healthy status because of their assimilation at the destination or as a survival strategy are needed.

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Movements from other countries and/or rural villages to large cities are often undertaken with the hopes of improved opportunities for economic advancement. The neoclassical migration theory is underpinned by the belief that a move will result in improved economic well-being for migrants and their families (Massey et al. 1994; De Jong et al. 2002). However, changes in health status, both physical and emotional, constitute an important set of potential consequences of movement, in both non-monetary costs and benefits. For young adults in the prime ages of migration, one key dimension of health status that can be profoundly affected by migration is their physical and mental health.

Hull (1979) found that differences in health outcomes between migrants and longer-term residents are due to changes in the physical and social environment. These changes can have both positive and negative implications for health. On the positive side, migrants (especially those moving from rural areas to urban areas) could find better access to health care services in the destination, could benefit from better diets, and/or a cleaner environment. The migrants may experience advantages from their continued patterns of beliefs, practices, and social contacts that protect health problems at the destination. On the negative side, migrants can have less care services, which may be related to less familiar, more expensive, and more difficult to access services. Loneliness and unfamiliarity with the new language and culture can lead to a decline in psychological well-being. Unfamiliarity can lead to stress which can have its own negative consequences (Findley 1988); behavior patterns that were automatic in the sending country are no longer applicable in the migrant's new home (Cassel, 1974; Shuval 1993).

These difficulties that migrants experience in their integration into their new environment have been studied extensively based on sociological approaches. Assimilation theory conceives that after an initial adjustment period, migrants become more and more like the native-born as their experience in their new home lengthens (Park 1921; Park 1950; Gordon 1964). Furthermore, it is found in Australia that a health behavior outcome, which is measured through drinking and smoking behavior and the social connectedness of migrants are contrasted with the outcomes of non-adolescent migrants, was initially negative and then later positive for first and second generation migrants (Brandon, 2008). Social connectedness often closely is related to the immigrants' mental health and well-being because the newcomers can not adjust well with culture, rules and regulations at the destination, and particularly for international migrants, who may be faced with language barriers (Downs-Karkos, 2004).

Changes in health and well-being resulting from rural-to-urban migration have not been extensively explored, in part because such impacts are much more difficult to measure than are the monetary costs and benefits of migration. Attempts to measure general health and well-being often employ *ad hoc* instruments, and many such instruments, standardized or not, if applied to generally healthy young and middle age adult populations (the population most likely to migrate) will be sensitive only to cases of extreme physical and psychological distress, rather than to more subtle differences that are likely to be more consequential later in life (Murray and Lopez 1996).

VanLandingham (2003a) and VanLandingham (2003b) have explored potential impacts of rural-to-urban migration on health using one of the key health assessment instruments, the SF-36. It is found that there are statistically significant disadvantages for migrants compared to non-migrants on the dimensions of health status- physical functioning, role limitations due to physical health problems, bodily pain, general mental health, role limitations due to emotional problems and general health perceptions- in a multivariate model controlling for age, sex, and socioeconomic status.

Migration in Thailand

Since the 1980s, Thailand has experienced great success in economic development. The economy has been reoriented toward manufacturing exports from an import substitution policy. This dramatically increased levels of internal migration as well as accelerated international migration, particularly from neighboring countries. The majority of migrants are concentrated at the young adult ages (Guest, 1993; Clausen, 2002), with the age distribution of migrants and non-migrants obtained from the Thai National Migration Survey (NMS), being that 58 percent of male migrants were aged 15-29, while 61 percent of female migrants were in this age group (Chamratrithirong et al. 1995). Males comprise the majority of migrants. However, females dominate migration to urban areas, particularly Bangkok. For all migrants the sex ratio for migrants identified in the 1990 census was 123, while for rural-to-urban migrants it was 90. At ages 15-19 the sex ratio for rural-urban migrants was 69 and at 20-24 it was 84 (Pejaranonda et al. 1995). The highest rates for male migrants were generally found for ages 20-24 and 25-29 and for females, the peak migration rates were for ages 15-19 and 20-24. The concentration of migrants into young adult ages has been increasing over time (Pejaranonda et al. 1995).

Migration data from the Kanchanaburi Demographic Surveillance System (DSS) site in 2004, show that almost one in five males and females aged 15-29 had migrated in the 12 months prior to the census (IPSR, 2006), with Bangkok and urban areas of Kanchanaburi accounting for a large proportion of migrants. The upland strata of the Kanchanaburi DSS, which is located on the Thailand-Myanmar border, had the highest proportion of both out and in-migration. The difference in economic development between the two countries, and the conflicts among ethnic minority groups in Myanmar, resulted in an influx of cross-border migrants to Thailand. It is estimated that about 2.8 million international migrants live in Thailand, with the majority at young adult ages (Sciortino and Punpuing, 2009).

Migration by young persons to urban areas is one way in which people can achieve occupational mobility (Ogena and De Jong, 1999). This is particularly important for young persons in rural areas who, if they remained in rural areas, would have very limited occupational choices. The money earned by migrants also provides an important component of the household income of many rural households. Using data from the NMS, Osaki (1999) shows that 37 percent of households receive money from migrants. Most of the money received is used for daily living expenses. Young, single migrants to urban areas remit more to their origin households than do other migrants.

Clausen (2002) indicated how social networks encourage young rural women into factory work in Bangkok and surrounding provinces. These networks provide migrants with information about employment opportunities and a safety net when required. Migrants are more likely than non-migrants to participate in the labor force, with levels of participation highest for young migrants to urban areas. Rural-urban migrants are most likely to work in the production and services sectors (Pejaranonda et al. 1995).

Objective and hypotheses

The paper aims to explain variability in health status that have consequences for health outcomes later in life for populations living in the study areas of the Kanchanaburi Demographic Surveillance System (DSS) site. This investigation will provide important information about health differentials for the population of working age adults (15-29) by employing a set of standardized and sensitive instruments (SF36) that have been used extensively for other populations. Key predictor variables of interest for this study include type of migration, individual characteristics, socio-economic status and social connectedness.

It is expected that both lifetime cross-border and internal migrants have worse outcomes than non-migrants on the following health outcomes:
- Social functioning in the short term, due to the difficulties of adjusting to an unfamiliar social environment;
- General emotional well-being in the short term for most and in the long term for some, due to the difficulties of adjusting to an unfamiliar social environment;
- Role limitations due to a lack of emotional well-being, due to the difficulties of adjusting to an unfamiliar social environment.
- Bodily pain, due to increased difficulties of taking time off and less access to health care;

Data and method

The samples of villages that comprise the Kanchanaburi DSS were selected in 2000. Village selection was undertaken using a stratified systematic sample design. The primary sampling units for rural areas were villages and for urban areas were census

blocks. The data for sample selection were collected from the Kanchanaburi provincial offices of various ministries concerning the amount of agricultural land in each village, the amount of wet rice crops grown, the amount of plantation crops grown (cassava and sugar cane), the number of adult workers employed industry and the population.

Kanchanaburi is the third largest province in Thailand and is located in the western part of the country. The province shares a long border with Myanmar and contains a variety of ethnic groups and migrants, both documented and undocumented, from Myanmar. The province is also within easy reach of Bangkok, and hence is the location of many industries.

This study is based on the data collected through face-to-face interviews, using a structured questionnaire in 2005. The sample is 6,973 young adults aged 15-29 years old who are currently living in the study area that consists of 87 villages in rural areas and 13 census blocks in urban areas.

In this study, lifetime cross-border migrants are defined as those whose place of birth is not in Thailand. The majority is from Myanmar. Lifetime internal migrants are those whose place of birth is in Thailand and it is different from the current place of resident at the time of data collection (November-December 2005). Health accessibility is determined by a holding of any health care insurance card. Social connectedness in this study is measured through the time that someone would give when the respondents felt the need. It includes how often that someone will listen to him/her, give advice, help with daily chores, provide emotional or financial support, provide trust, confide or depend on, protect, take care when he/she got sick, and the available of someone when the respondents want to show their love and affection. The higher the score, the higher the social connectedness.

The dependent variables are four items of health indicators measured through the SF36. These are social functions, role limitation due to emotional problem, emotional well-being and bodily pain. These indicators are measured on an interval scale and multiple regression is employed in the analysis. There are two models, model 1 tests the direct relationship between migration and health status, and second model includes confounding factors such as age, sex, marital status, education, working status, social connectedness and health accessibility. These variables have been shown to be related to physical and mental health, and are also related to migration.

It is important to note that the data upon which the analysis is based is measured at one point in time. Only those migrants who may be considered as 'successful' are interviewed. Other migrants may have returned to their homes or moved elsewhere. Ideally longitudinal data should be used for this analysis. This data have been collected and will soon be available for analysis

Measurement of SF-36

SF-36 stands for Short Form, 36 questions. This set of generic questions has evolved over years of scientific testing at academic institutions. It accurately measures general improvement in mental and physical wellness. The test is simple, reliable, valid, and easily administered.

The SF36 measures eight multi-item set of health status: physical functioning (10 items), role limitations due to physical problems (2 items) and emotional problems (2 items), energy/fatigue (4 items), emotional well-being (5 items), social functioning (2 items), bodily pain (2 items) and general health (5 items). There is an additional un-scaled single item on changes in respondent's health over the past year. For each variable item scores are coded, summed and transformed to a scale from 0 (worst) to 100 (best).

Based on the literature review, only four selected components of health status are employed. They are social functioning, emotional well-being, role limitations due to emotional health and bodily pain. The measurement for each set of health status is tested for reliability; the set of social functioning shows a low α value, which is 0.54, α values for emotional well-being, role limitation due to emotional health and bodily pain are 0.60, 0.78 and 0.66 respectively. It is important to interpret the social functioning indicators with care.

For each variable item scores, are coded, summed and transformed on to a scale from 0 (worst) to 100 (best). Every item is averaged, which in this set the score for emotional well-being is the lowest (74.5), while the highest score is for social functioning. The average score for emotional well being is below 75. This partly may be related to the way the data were collected. In this study, face-to-face interviews were employed, which may result in biased answers, particularly on subjective questions.

Table 1: SF 36 – health status indicators classify by reliability and average score

Health Indicator	Reliability (α –alpha)	Average score	Number
Social functioning	0.54	84.2	6,971
Emotional well being	0.60	74.5	6,967
Role limitations due to emotional problems	0.78	80.1	6,968
Bodily pain	0.66	80.4	6,973

About half (54 percent) perceived that their health is about the same as the previous year, only 15 percent perceived that their health status is worse than the previous year, while approximately 30 percent believed that their health status is somewhat better or much better than one year ago.

Findings

According to the hypotheses established for this paper, the relationship between migration and each health indicators are investigated separately. Model 1 shows a direct association between migration and health, model 2 indicates a net effect of migration on health status when other variables are held constant.

A. *Social functioning*

Social functioning is measured through two questions on whether the physical and/or emotional health problems interfered with normal social activities with family, friends, neighbors or groups. The higher the score, the lower the impact of physical and/or emotional health problems on normal social activities. It is found that migration has a significant relationship with the social functioning indicator in both models, although the influence of lifetime internal migration disappears in model 2. Compared with non-migration, the lifetime cross-border migrants tended to report that their social functioning is better than the non-migrants which mean their physical and/or emotional health interfered with social activities less than the non-migrants. On the other hand, the lifetime internal migrants had problems adjusting, and are even worse than the non-migrants. These findings are different for the lifetime cross-border and internal migrants. Comparing the non-migrants and internal migrants, our finding partially supports our hypothesis that migrants may not be familiar with the environment at the destination. It is possible that lifetime cross-border migrants are more likely to be positively selected for their good health compared to internal migrants. They also have less social activities because of the limitations in their network, as well as cultural and language factors. They, compared to internal migrants, spend most of their time working.

In model 2, age, sex, education and social connectedness have a statistically significant association with social functioning. As age increases, social functioning also increases. Females feel that their social functioning is effected by the physical and or emotional problem less than their male counterparts. The higher the education, the lower the score, on social functioning. And lastly, those with high social connectedness also have high social functioning.

Table 2: Coefficient of relationship between migration and social functioning impacted by physical and/or emotional health

	Model 1		Model 2	
	Coefficient (B)	Std.Error.	Coefficient (B)	Std.Error.
A. Migation				
Non-migration [a)]				
Lifetime cross-border migration	15.289***	1.778	14.316***	1.918
Lifetime internal migration	1.913**	.967	1.582	1.012
B. Migrant's demo./soc-eco. Characteristics				
Age			.368***	.128
Sex				
Male [a)]				
Female			-3.977***	.913

Marital status				
Divorced/separated/widows [a]				
Single			3.081	2.777
Currently married			-.138	2.675
Education				
None or primary level [a]				
Lower secondary			-5.088***	1.173
Higher secondary			-6.099***	1.212
Tertiary			-6.807***	1.629
Working status				
Not currently working [a]				
Currently working			-.919	1.046
C. Social connectedness			.565***	.065
Constant	166.023***	.811	143.137***	4.638
Adjusted R Square	.010		.028	
R Square Change	.011***		.018***	
Number	6960		6951	

[a] = reference category
*** = significant at 0.01 level; ** = significant at 0.05 level; * = significant at 0.10 level

Although controlling for individual factors reduces the effect of both internal migration and international migration on social functioning, the effect is greater for internal migrants. In model 2, internal migrants are not significantly different from non-migrants in terms of their social functioning score.

B. Emotional well-being

Emotional well-being is measured through five questions related to feelings on: nervousness, dumps, calm and peaceful, downhearted and blue, and happiness. Unexpectedly, lifetime cross-border migrants have significantly higher emotional well-being than do non-migrants. In model 1, the lifetime cross-border migrants have higher emotional well-being than non-migrants, and the association is stronger when other confounding factors are included in model 2. However, in model 2, lifetime internal migrants have a lower score on emotional well-being compared to non-migrants. This may be related to lifetime cross-border migrants being more likely to be selected for both physical and emotional good health compared to other both internal migrants and non-migrants. In addition, lifetime cross-border migrants may compare the situation with that in their country of origin, which tended to be much worse than in their present situation. Cross-border migration is much more difficult than moving within the country and therefore those who migrate across a border are likely to be highly motivated.

Model 2 shows that females have lower emotional well-being than males. Higher levels of education are also associated with lower levels of emotional well-being. This may be related to higher expectations of those with higher education compared with a lower level of education, which results in a lower score of emotional well-being. A positive association exists between social connectedness and emotional well-being.

Table 3: Coefficient of relationship between migration and emotional well-being

	Model 1		Model 2	
	Coefficient (B)	Std.Error	Coefficient (B)	Std.Error
A. Migration				
Non-migration [a]				
Lifetime cross-border migration	10.342***	3.506	16.350***	3.676
Lifetime internal migration	-2.512	1.907	-3.247*	1.940
B. Migrant's demo./soc-eco. Characteristics				
Age			.095	.246
Sex				
Male [a]				
Female			-13.932***	1.750
Marital status				
Divorced/separated/widows [a]				
Single			3.365	5.321
Currently married			3.657	5.125
Education				
None or primary level [a]				
Lower secondary			-6.487***	2.248
Higher secondary			-10.945***	2.324
Tertiary			-8.715***	3.124
Working status				
Not currently working [a]				
Currently working			1.279	2.005
C. Social connectedness			2.739***	.125
Constant	373.316***	1.599	283.081***	8.889
Adjusted R Square	.002		.074	
R Square Change	.002***		.073***	
Number	6956		6947	

[a] = reference category
*** = significant at 0.01 level; ** = significant at 0.05 level; * = significant at 0.10 level

C. Role limitations due to emotional problems

Questions were asked whether emotional problems effected work or other activities in terms of amount of time, accomplishments, and care with which the work was undertaken. The higher the score the lower the impacts of emotional health problems on the respondents work. Model 1 indicates that lifetime cross-border migration has a significant positive relationship with limitations due to emotional problems. Lifetime cross-border migrants are likely to positively perceive their emotional problems (if they have any), and did not feel that it interferes with their work. This corresponds with findings earlier in the paper that lifetime cross-border migrants have higher emotional well-being than either internal migrants or non-migrants, and this is associated with limited effect of emotional problems on their work and other activities.

After other variables are controlled, the net effect of migration on health status is stronger for internal migrants, with emotional problems having a large and significant effect on role limitations, compared to non-migrants. The lifetime internal migrants reported that emotional problems affected the amount of time they spend at work, their accomplishments and the amount of care they gave to their work, more than did

non-migrants. Without strong social support, the lifetime internal migrants may have more problems adjusting to the working environment than do non-migrants.

In model 2, education and social connectedness are significantly related to limitations due to emotional problems. Those with higher secondary or tertiary education perceive that the emotional problems had less of an impact on different aspects of their work than those with no- or primary education levels. If social connectedness increased, the less impact from emotional function on their work or other activities.

Table 4: Coefficient of relationship between migration and role limitation due to emotional function

	Model 1		Model 2	
	Coefficient (B)	Std.Error.	Coefficient (B)	Std.Error.
A. Migration				
Non-migration [a)]				
Lifetime cross-border migration	15.951***	5.002	14.813***	5.408
Lifetime internal migration	-3.547	2.720	-5.666**	2.854
B. Migrant's demo./soc-eco. Characteristics				
Age			.399	.362
Sex				
Male [a)]				
Female			-1.921	2.574
Marital status				
Divorced/separated/widows [a)]				
Single			10.097	7.828
Currently married			7.488	7.540
Education				
None or primary level [a)]				
Lower secondary			-8.551	3.309
Higher secondary			-14.001**	3.419
Tertiary			-3.965***	4.594
Working status				
Not currently working [a)]				
Currently working			3.862	2.951
Social connection			1.614***	.183
Constant	241.305***	2.281	173.139***	13.075
Adjusted R Square	.002		.016	
R Square Change	.003***		.015***	
Number	6957		6948	

[a)] = reference category
*** = significant at 0.01 level; ** = significant at 0.05 level; * = significant at 0.10 level

D. Bodily Pain

Pain is indicated by two questions on whether there was any bodily pain and does it interfere with work outside the house and housework. A higher score indicates a lower impact of bodily pain on a persons work. In this model the variable on health accessibility is added. It is found that migration has a statistically significant relationship with bodily pain in both models, but in an opposite direction depending on the form of migration. The lifetime cross-border migrants are less likely to

perceive bodily pain than the non-migrants, while the lifetime internal migrants more likely to perceive bodily pain than are non-migrants. As mentioned previously, the lifetime cross-border migrants are more likely to be selected on health indicators than are the internal migrants. Cross-border migrants are less likely to mention problems because they engage in jobs such as construction or transportation which are directly related to bodily pain.

In model 2, sex, marital status, education, working status, social connectedness and health accessibility variables are significantly related to pain. Females are less likely to report that they have bodily pain and/or that pain interferes with their work than are males. The higher the level of education, the lower the pain score, which probably is related to the educated population being more likely to be involved in skilled or semi-skilled work where it is not necessary to use strength than are those with no/or primary education. Those who are currently working, or holding any type of health care card perceive pain more than those who are not currently working or not holding any health care card respectively. The relationship between social connectedness and bodily pain is positively and statistically significant.

Table 5: Coefficient of relationship between migration and bodily pain

	Model 1		**Model 2**	
	Coefficient (B)	Std.Error .	Coefficient (B)	Std.Error
A. Migration				
Non-migration [a]				
Lifetime cross-border migration	5.448***	1.901	7.742***	2.055
Lifetime internal migration	-5.941***	1.033	-3.140***	1.081
B. Migrant's demo./soc-eco. Characteristics				
Age			-.085	.137
Sex				
Male [a]				
Female			-3.488***	.975
Marital status				
Divorced/separated/widows [a]				
Single			.326	2.967
Currently married			-5.293*	2.858
Education				
None or primary level [a]				
Lower secondary			-3.849***	1.253
Higher secondary			-6.453***	1.295
Tertiary			-3.174*	1.741
Working status				
Not currently working [a]				
Currently working			-6.393***	1.118
C. Social connectedness			.380***	.069
D. Health Accessibility			-19.081**	8.453
Constant	164.244***	.867	180.922***	9.753
Adjusted R Square	.009		.028	
R Square Change	.009***	-	.020***	-
Number	6962		6952	

[a] = reference category
*** = significant at 0.01 level; ** = significant at 0.05 level; * = significant at 0.10 level

Conclusion

Migration, particularly lifetime cross-border migration can help explain variation in health status that is measured by social functioning, emotional well-being, role limitations due to emotional health and bodily pain. The main hypothesis of this paper is supported by the relationship between migration and health status. However, this study only partially supports the other four hypotheses that migrants have worse health status than non-migrants. This occurs only for internal migrants, not international migrants. For internal migrants this is probably due to unfamiliarity with the environment at the destination compared with non-migrants. For cross-border migrants the relationships are in the opposite direction, with international migrants having higher scores on all the indicators compared to non-migrants.

In our study, lifetime internal migrants have worse health than non-migrants in every aspect of health status being studied. He/she is less likely to cope with impacts of both physical and emotional problems, which is reflected in social functioning, role limitations due to emotional health and bodily pain, compared to the non-migrant. It is important to re-emphasize that variability in health status has consequences for health outcomes later in life.

A lifetime cross-border migrant, which in the context of Kanachanburi, primarily means coming from Myanmar, tends to adjust well in the four aspects of health status being examined. This is unexpected, but lifetime cross-border migrants compared to internal migrants are more likely to be selected for both physical and emotional health and well-being.

Adaptation strategies play an important role for the different group of migrants. Assimilation theory would predict that after an initial adjustment period, migrants become more and more like the native-born because of their experience in the new home. Indeed, different generations of immigrants have dissimilar level of assimilation to the destination (Gordon, 1964; Brandon, 2008). This is a topic that needs further investigation. We are also collecting data, which includes migrants to Bangkok, on a longitudinal basis. This data will allow a complete analysis of the effects of migration on health.

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