

Health and mortality differentials among Myanmar, Laos, and Cambodian migrants in Thailand

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Undocumented migrants from Myanmar, Laos and Cambodia residing in Thailand are marginalized. Working in 3D jobs, living in unhygienic and poor sanitary condition, lack of knowledge, limit access to health services and mobility condition intensify migrant's vulnerability to health problems and mortality. This study, therefore, intends to find out health and mortality differentials among migrants from these three countries residing in Thailand. Data from annual epidemiological reports during 1998 to 2006 and vital registration statistics during 2004 to 2008 were employed. The results show that major causes of sickness among these migrants were acute diarrhea, malaria and pyrexia with unknown origin. Major causes of death among Myanmar migrants are malaria, pneumonia, tuberculosis, leptospirosis and suicide while pneumonia, tuberculosis, hepatitis, meningitis and tetanus are causes of death among Cambodian migrants. A major cause of death among Laos migrants is pneumonia. Results from the vital registration revealed that majority of Myanmar and Cambodian migrants died from infectious diseases and accidents while non-infectious diseases stand out for Laos migrants. Differences in sex, age and nationality, also significantly influence different causes of death among these migrants.

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Health and mortality differential have major implications for health policy of multiethnic societies. The increasing trend of international migration from Myanmar, Laos and Cambodia to Thailand had posed a major concern on the migrant's health problems and disparities. Even though numbers of migrant's health strategies and policies including health examination and health insurance scheme for the immigrants have been inaugurated to combat the problems, number of undocumented migrants from Myanmar, Laos and Cambodia residing in Thailand are still marginalized. Working in 3D jobs, living in unhygienic and poor sanitary condition, lacking of knowledge and limiting access to health services and mobility intensify migrant's vulnerability to morbidity and mortality.

According to the United Nation, 1953, ethnic, racial and religious variation, age sex composition, geographical differential due to regional differences in degree of urbanism, income, occupational structure and other social and economic factors, levels of living and housing can influence different levels of mortality. Some type of work can entail occupational hazards than others such as exposure to accidents from dangerous machine, the inhalation of harmful dusts, the absorption of poisons, and exposure to excessive heat and sudden changes in temperature. The migrant workers who expose to these conditions are likely to experience higher mortality rates than workers who are not exposed to any special risk. However, the influence of occupational hazards on mortality must be very small when compare with the influence of the different social and economic situations of the various occupational groups (United Nation, 1953).

Katherine Fennelly study factors that contribute to the deterioration of immigrants' health. She found that poverty, living in substandard housing, not having access to medical care, adoption of an American diet, smoking and substance abuse contributed to deterioration of immigrants' health (Fennelly, 2007).

Noh and Kaspar also describe the change from health advantages to disadvantage of immigrants as a function of acculturation. Poor health behaviour and lifestyles, leaving behind resource (social networks, cultural practices, employment in their field of training, etc. and ways in which the settlement process wears down hardiness and resilience (Fennelly, 2007). This finding coherent with the study of Trovato, 2003 which also found that acculturation to the host society would lead to convergence in death probabilities between immigrants and the Canadian born population. However, acculturation in some cases raised the risk of death among immigrants, while in others it helped to reduce it (Trovato, 2003).

Some researchers also suggested that the healthcare system might influence mortality outcomes for migrant populations. Unequal access opportunities and sub-optimal quality of services were suggested in some studies to have contributed to ethnic disparities in mortality. Learning more about these factors will enable health authorities to adjust the healthcare system in ways that would reduce ethnic inequalities in health. Previous researchers showed that mortality from avoidable causes has significantly declined in the past decades in many countries most likely due to the increased effectiveness of the healthcare services (I stirbu, AE Kunst, V Bos and JP Mackenbach, 2006). In addition, barrier to health care and lack of insurance coverage for the

immigrants in the United States have been implicated as a source of increasing health disparities between immigrants and U.S. born residents (Karl Eschbach, et. al 1999).

This study intends to find out health and mortality differential among Myanmar, Laos and Cambodian migrants residing in Thailand. However, only sex, age and nationalities factors will be included in the analysis. Findings from this study will provide a better understanding on how health and mortality problems among migrants from different age, sex and nationalities can be tackled.

Data and method

Since migrant mortality data in Thailand are quite incomplete, data from 2 main sources have been utilized in this study. Data from annual epidemiological surveillance reports from the Ministry of Public Health in 1998 to 2006 was utilized to compare cause of sickness and death due to major surveillance infectious diseases among Myanmar, Laos and Cambodia migrants and native Thai. Vital registration statistics in 2004 to 2008 were also employed to find out different causes of death from non infectious diseases, accidents, murder and suicide. The 2,858 migrant death cases were drawn from the vital registration statistics. Descriptive and bi-variate analyses were employed to examine differences in causes of death among these migrants.

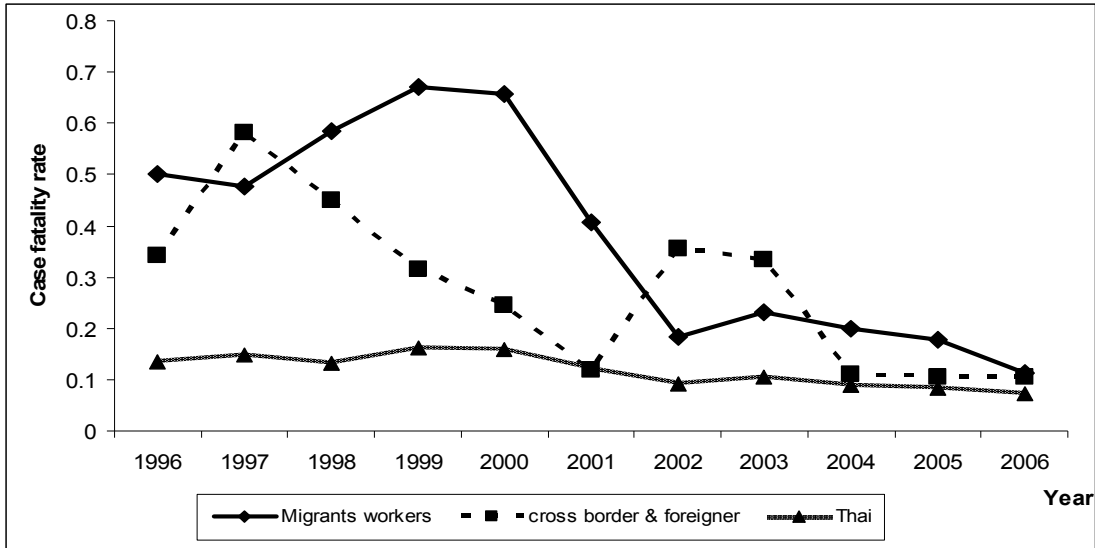
Findings

The department of disease control, Ministry of Public Health, Thailand conducted an annual surveillance system to monitor specific cause of sickness and death among migrant workers, cross border and foreigners in Thailand since 1996 to present. They found that number of migrants' sick and death has change dramatically from 16,578 to 31,205 patients annually during the last decade. In 2006, there are total 31,205 migrants and cross border and foreigner patients attending the hospitals. Among these number, 43 patients die. Mortality rate of these patients is around 0.14. Among these numbers, there are 22,047 migrant workers and 2,841 cross border and foreigners patients. Ages of these migrant patients are between 15-44 years. 72.26 percent are Myanmar follow by Cambodia, Laos, China, Malaysia and Vietnam (Likityingwara, 2006).

The major causes of sickness among these patients are acute diarrhea, malaria, pyrexia of unknown origin, hemorrhagic conjunctivitis, pneumonia, sexually transmitted diseases, food poisoning, tuberculosis, dengue hemorrhagic fever and dysentery. Diseases which have high number of patient death are malaria and pneumonia. 11 Burma and 1 Cambodia die due to malaria and 7 Burma and 3 Cambodia and 2 Laos die due to pneumonia (Likityingwara, 2006)

When comparing trend of case fatality rate among migrants, cross border migrants and foreigners and Thai people during 1998 to 2006, it is found that case fatality rate among migrant workers are quite high when compare with Thai people and cross border foreigners especially during 1997 to 2000. However, this rate dramatically failed down during 2000 to 2002 and tended to decline till 2006 as presented in figure 1.1

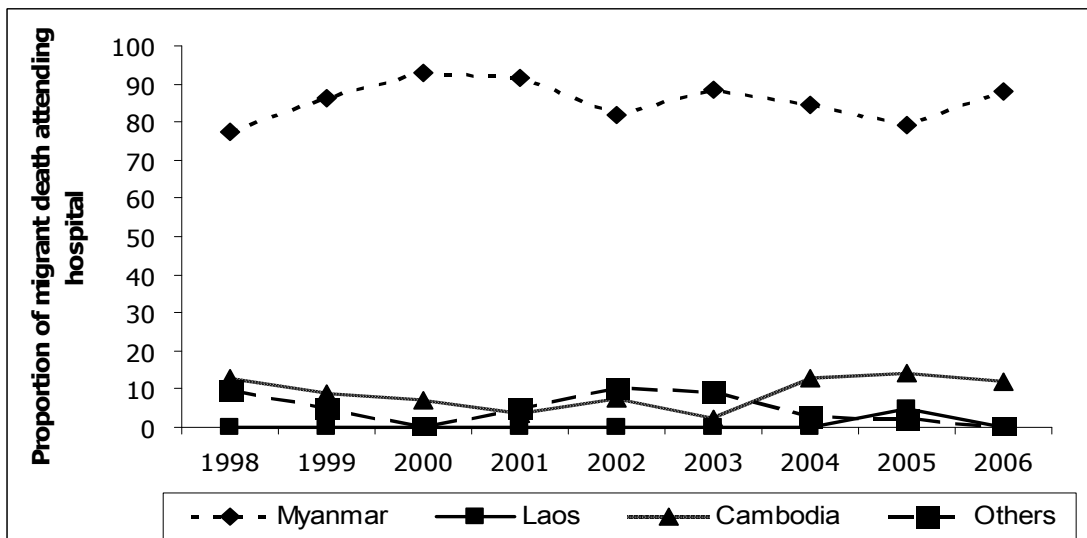
Figure 1. Case fatality rate of Thai people, migrant workers and cross border migrants attending hospital in 1998 to 2006 from major infectious surveillance diseases.



Source: Annual Epidemiological Surveillance Report 1998-2006, Ministry of Public Health

When comparing proportion of migrant death attending hospital due to specific surveillance diseases, Myanmar migrants contributed the highest proportion of death attending hospitals when compare with Cambodian, Laos and migrants from other countries. This proportion is quite fluctuated during 1998-2006. The proportion of Cambodia migrants death tends to increase during 2003 to 2006 while the proportion of Laos migrant death tends to be stable during 1998 to 2004 but it rapidly increase in 2005 then fall down in 2006 as presented in figure 1.2

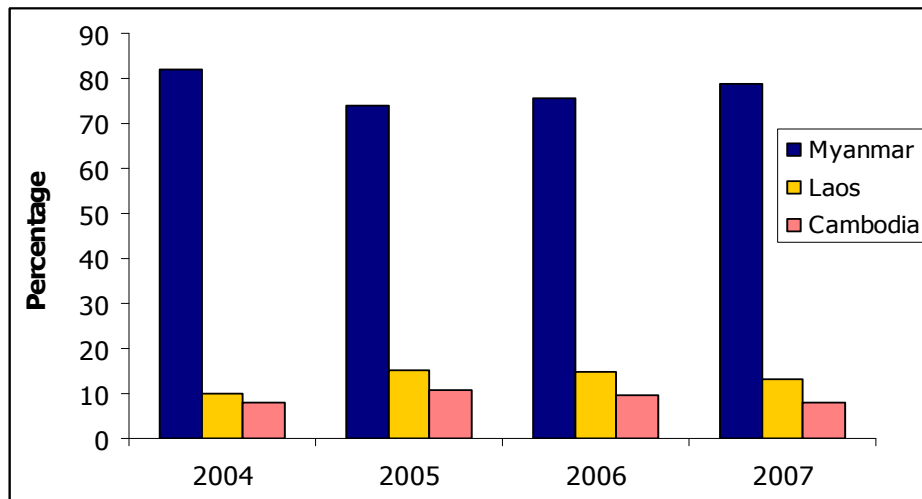
Figure 2 Proportion of migrant death in the hospitals in 1998-2006 from major infectious surveillance diseases.



Source: Annual Epidemiological Surveillance Report 1998-2006, Ministry of Public Health

The data from the Ministry of Interior has shown that among 2,858 cases of migrant death during 2004 to 2008, 81.9% are Myanmar, 10% are Cambodian and only 8.10% are Laos. These percentages are slowly decreased during 2005-2007. However, the proportion of Myanmar, Laos and Cambodian migrants' death are still quite the same as indicated in figure 1.3

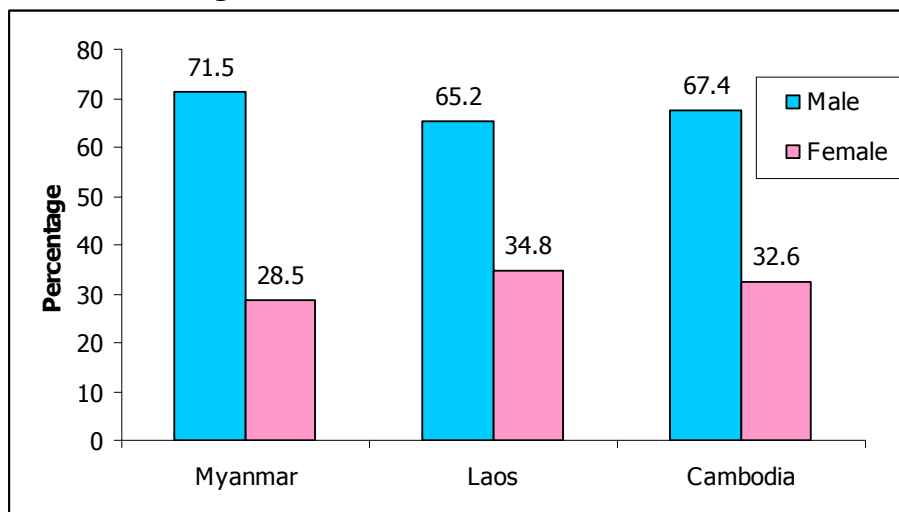
Figure 3 Percentage of Myanmar, Laos and Cambodian migrants death in Thailand during 2004-2007



Source: Migrants' vital registration 2004-2007, Ministry of Interior

When comparing percentage of death between male and female migrants, the result has shown that More than half of male migrants die more than female migrants in Thailand among these three nationalities as presented in figure 4.

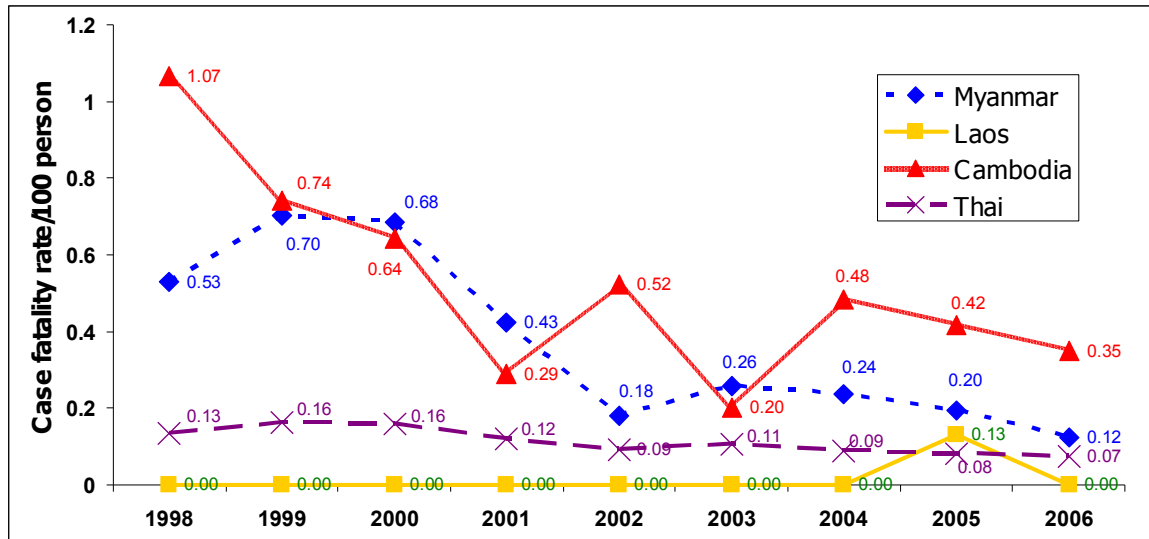
Figure 4 Percentage of male and female Myanmar, Laos and Cambodian migrants death in Thailand during 2004-2008



Source: Migrants' vital registration 2004-2008, Ministry of Interior

However, when comparing case fatality rate among Myanmar, Laos and Cambodia migrants with Thai people, the figure show that Cambodia migrants tend to have higher case fatality rate than Myanmar, Laos migrants and Thai people. Case fatality rate of Myanmar and Cambodia migrants are still higher when compare with Thai people but the rate for Laos migrants tend to be lower than Thai people as reflected in figure 1.5.

Figure 5 Comparison case fatality rate of Myanmar, Laos and Cambodian migrants with Thai people during 1998 to 2006



Source: Annual Epidemiological Surveillance Report 1998-2006, Ministry of Public Health

When comparing cause of death of Myanmar, Laos and Cambodian migrants with Thai people by using data from annual epidemiological surveillance report of Ministry of Public Health in 2006 , this study found that Cambodian migrants had surprisingly high case fatality rate on meningitis, tetanus and hypatitis. They also had the highest case fatality rate on pneumonia, tuberculosis, pyrexia and malaria when compare with migrants from Myanmar, Laos and Thai people. The major cause of death of Myanmar migrant are leptospirosis, suicide, scrub typhus, measles, pneumonia and tuberculosis and malaria. While the major cause of death of Laos migrants in Thailand is mainly pneumonia. When comparing the major cause of death of these migrants with the death of Thai people it is found that tetanus stand out for the highest major cause of death among Thai people. However, it is still lower when compare with the death from tetanus in Cambodian migrants. Suicide is also another major concern among Thai people even though it is a little bit lower than Myanmar migrants. Minigititis, leptospirosis, pneumonia, and tuberculosis are also other causes of death among Thai people. However, these rates are much lower when comparing with the migrants as presented in table 1.1

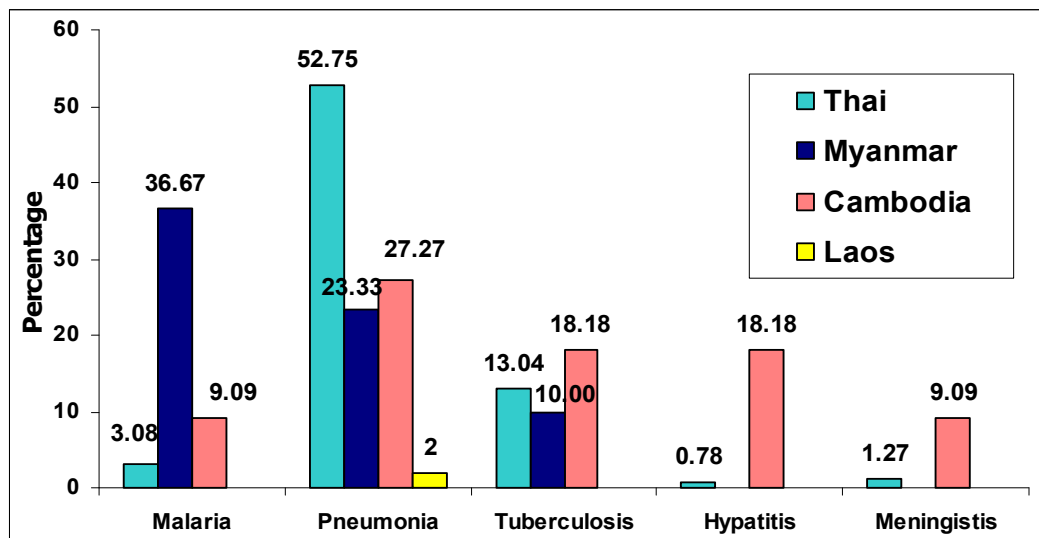
Table 1 Comparison case fatality rate of Burma, Lao and Cambodia migrant with Thai people by major cause of death in 2006

Cause of death	Case fatality rate			
	Myanmar	Cambodia	Laos	Thai
Meningistis	0	33.33	0	1.34
Tetanus	0	16.66	0	8.90
Hypatitis	0	16.66	0	0.15
Leptospirosis	3.84	0	0	1.72
Suicide	3.33	0	0	3.05
Pneumonia	0.54	3.12	2.63	0.60
Tuberculosis	0.56	2.85	0	0.64
Scrub typhus	1.20	0	0	0.09
Measles	1.09	0	0	0.02
Pyrexia	0	0.80	0	0.01
Malaria	0.18	0.46	0	0.17

Source: Annual Epidemiological Surveillance Report 2006, Ministry of Public Health

When comparing percentage of death by nationalities, the department of disease control, Ministry of Public Health reported that the major causes of death of these migrants according to the major surveillance diseases in 2006 are malaria, pneumonia, and tuberculosis (MOPH, 2006). High percentage of Myanmar migrants die due to malaria. Cambodia and Laos migrants die more due to Pneumonia. However, their percentage of death due to pneumonia are surprisingly low when compare with native Thai.

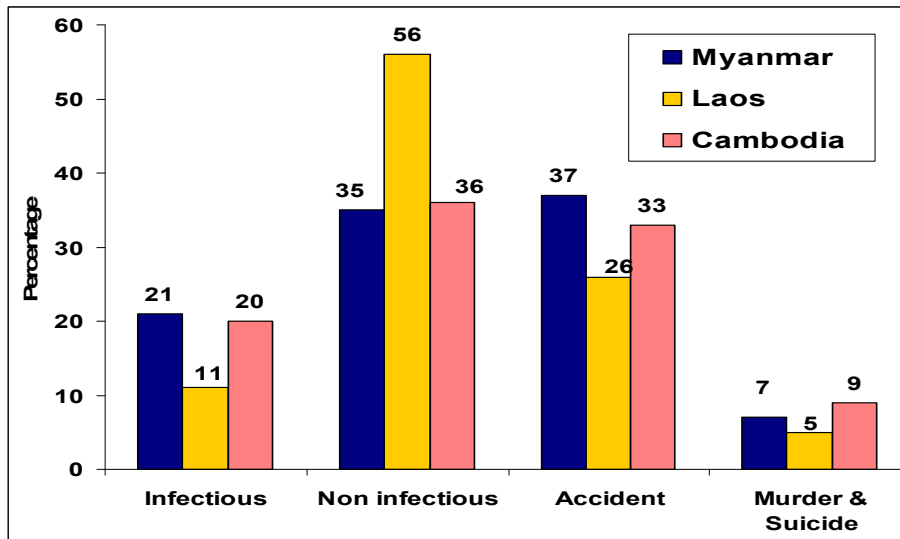
Figure 6 Comparison percentage of death of Myanmar, Laos and Cambodian migrants with Thai people during in 2006



Source: Annual Epidemiological Surveillance Report 2006, Ministry of Public Health

The result from vital registration from Ministry of Interior which include all causes of death both inside and outside the hospital has shown that non-infectious diseases such as cardiovascular and cancer are becoming the major concerns among the migrants. High proportion of death from accident and injuries also rose dramatically. However, there are some similarities among native Thai and migrants in terms of certain causes of death such as accident, cardiovascular disease and cancer (MOI, 2008).

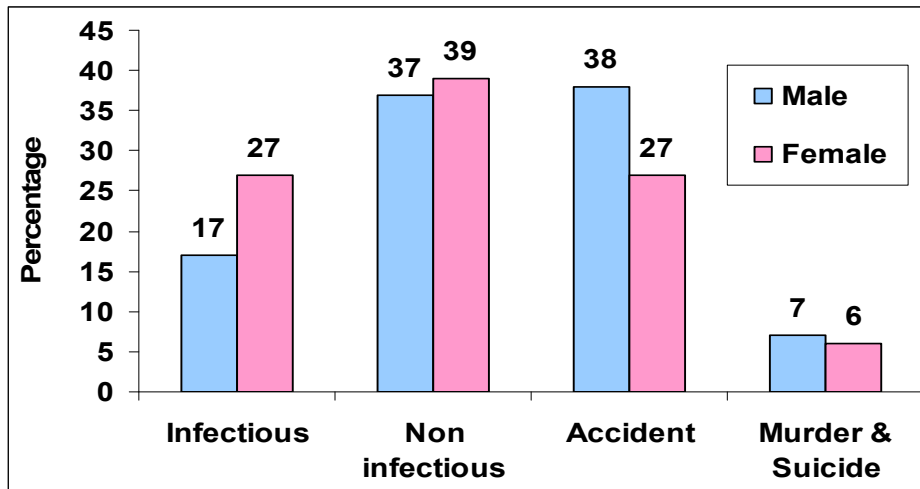
Figure 7 Comparison cause of death of Myanmar, Laos and Cambodian migrants during 2004-2008



Source: Migrants' vital registration 2004-2008, Ministry of Interior

With regard to gender differences, male migrants of the three nationalities have higher percentage of death when compare to female migrants. The common causes of death for male migrants are external causes such as accident, murder and suicide while for female migrants are infectious and non infectious diseases. It might be due to the fact that male migrants are mainly work as seafarer, construction and agricultural workers while female migrants are mainly work for fishery processing industry, and domestic workers. Their risk in cause of death, are therefore, different.

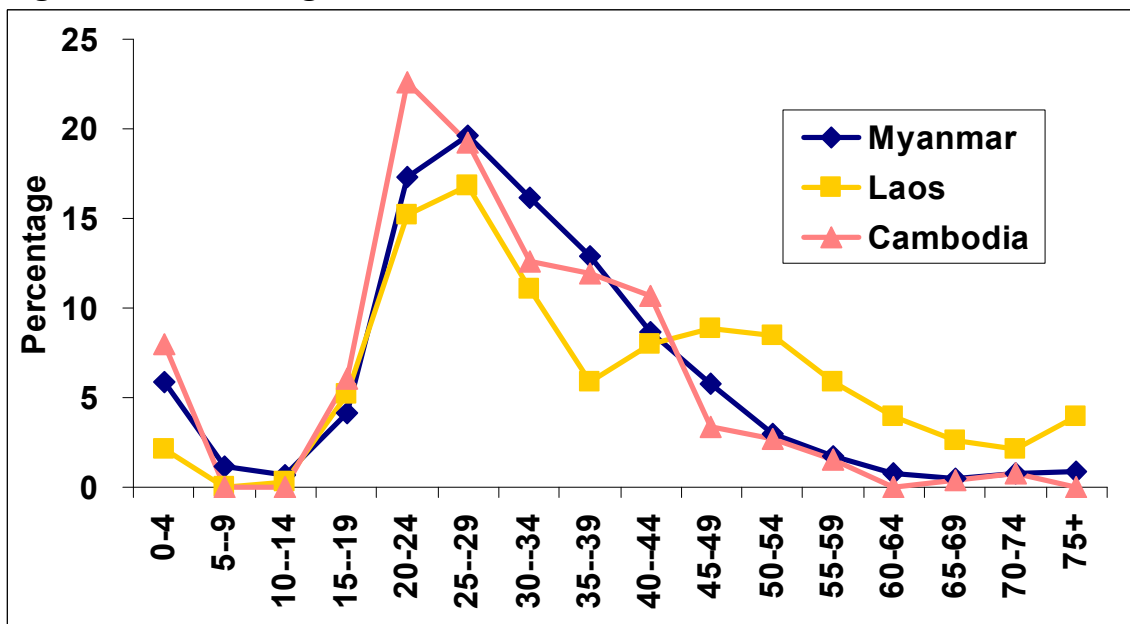
Figure 8 Comparison different in cause of death of male and female migrants from Myanmar, Laos and Cambodia during 2004-2008



Source: Migrants' vital registration 2004-2008, Ministry of Interior

Pattern of death by age group are quite similar among migrants aged 0-19 years, which proportion of Cambodian migrants was slightly higher than that of the other two nationalities. Proportion of death among Laos migrants aged 20-39 years was lower, but for age group 40-75 years, it became higher than those of Myanmar and Cambodian migrants.

Figure 9 Comparison different age pattern of Myanmar, Laos and Cambodian migrant's death during 2004-2008

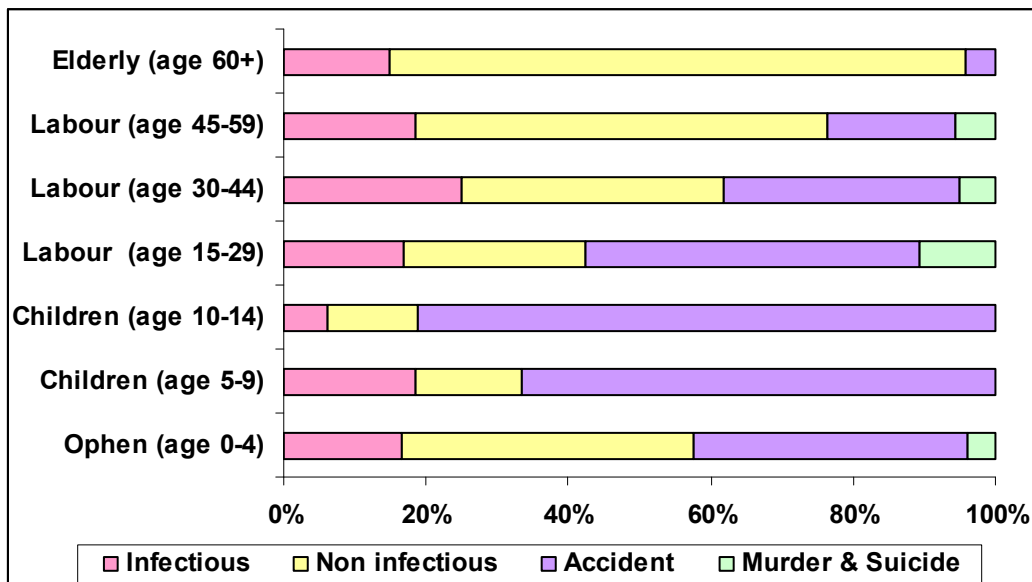


Source: Migrants' vital registration 2004-2008, Ministry of Interior

The causes of death by age shows that major causes of deaths for children (age 0-4 years) are maternal and child health (26.2%) including premature labor, amniotic aspiration, congenital abnormal, congenital heart disease, congenital malformation. These children also face problems from infectious disease such as septicemia (12.2%) and pneumonia (5.8%). 38.4% of them also die due to accident. For children (age 5-9), major cause of death among this group are accident (25.9%), beaten by animal or insects (37), drawn (3.7%), and injuries (3.6%). Children age (10-14 year) death was related to accident (12.5%), beaten by animal or insects (37.5%), drawn (25%), and injuries (6.3%)(Ministry of Interior, 2004-2008).

Causes of death among migrants (age 15-29 years) are accident (18.2%), injuries (17.8%), beaten by animal or insects (5.1%). 7.4% of them also have septicemia and 7.3% were murder. The causes of death for labor force age (30-44 years) are infectious diseases such as septicemia (10.2%), HIV/AIDs (7.1%) pneumonia (3.6%), and malaria (0.8%) are also their. Number of them also death due to accident (12.6%) and injuries (12.9%). 3.4% were also murder. For migrants age 45-59 years and older, non-infectious diseases stand out among this group. These non-infectious diseases include cardiovascular diseases (15.5%) cancer (15.5%), cirrhosis (4.7%), cerebral disease (4.4%), and degenerating organs (26.10%) (Ministry of Interior, 2004-2008).

Figure 10 Comparison different cause of death among different age group of Myanmar, Laos and Cambodian migrants during 2004-2008



Source: Migrants' vital registration 2004-2008, Ministry of Interior

The result from bi-variate analysis has shown that sex, age, and nationality have significantly relationship with different causes of death among these migrants as present in table 2

Table 2 Crosstabulation of migrant's age sex and nationalities with different causes of death.

	Infectious diseases %	Non Infectious diseases %	Accident %	Murder & suicide %	Total %	Chi-square	P value
Sex						52.087***	0.000
Male	17.1	37.4	38.3	7.2	100		
Female	27.2	39.3	27.5	6.0	100		
Age group							
Baby (0-4 year)	16.5	41.2	38.4	4.0	100	9.102*	0.028
Children (5-9 year)	18.5	14.8	66.7	0.0	100	13.459**	0.004
Children (10-14 year)	6.3	12.5	81.3	0.0		15.122**	0.002
Labour age 1 (15-29year)	16.8	25.6	47.0	10.6	100	212.008**	*
Labour age 2 (30-44 year)	24.90	37.0	33.0	5.1	100	28.216***	0.000
Labour age 3 (45-59year)	18.40	57.90	18.10	5.6	100	74.29***	0.000
Elderly (60+ year)	14.8	80.9	4.3	0.0	100	100.464**	*
Nationality						70.207***	0.000
Myanmar	21.5	34.9	36.8	6.8	100		
Laos	11.6	56.4	26.5	5.4	100		
Cambodia	20.7	36.4	33.7	9.2	100		

Source: Migrants' vital registration 2004-2008, Ministry of Interior

Discussion

The result of these study suggested that Myanmar, Laos and Cambodian migrants are marginalized and are still vulnerable in accessing to health services. Their case fatality rates are still higher than native Thai. Nationalities differences also influence different cause of death of the migrants as the result indicated that Cambodian migrant has the highest case fatality rates when compare with Myanmar, Laos and Thai. Cause of death of each nationalities are also different.

Sex of the migrants also influences different cause of death. Female migrants are still marginalized due to death from infectious, non infectious disease and murder and suicide while male migrant face more problems on accident. Male also have higher percentage of death when compare with female migrants. These might be due to the fact that migrants from different sex exposed to different kind of job. Their cause of death are therefore different.

Age of migrants also influences different cause of death. Migrant children (age 0-4) die due to problem on maternal and child health, while migrant children (age 5-9 and 10-14) face more problems on accident such as drawn and biting by animal and insect and injuries. Labor force age also face problems on accident, injuries and murder. Infectious diseases such as septicemia, pneumonia, HIV/AIDS, malaria are still under concern among this group rather than the elderly migrants. On the contrary, the elderly

migrant face more problem from non-infectious diseases. Age, sex and nationalities also have significant relationship with different cause of death among these migrants.

Even though number of study had indicated that immigrants are generally healthier than that the native-born populations as indicated by mortality rates, chronic conditions, mental health, etc which often referred as “*epidemiological paradox*”, the advantage enjoyed by immigrants tends to deteriorate over time (Lu, 2007). The result of this study contradicted with this idea since most of the undocumented migrants from Myanmar, Laos and Cambodia residing in Thailand have been forced to move due to political and economic reasons. Migrant health selectivity are therefore cannot be completely applied.

However, the results of this study can only reflect some parts of the whole picture of migrant’s sickness and death in Thailand since the epidemiological surveillance data applied in this study include only the migrants who died in the hospitals and registered death. Numbers of undocumented migrants who did not attend the hospitals and did not register death are still absence. Some of the migrant also decide to go back to die in their birth place. Number of migrant’s death in the vital registration is, therefore, quite low due to under enumeration especially for those who have not been registered yet.

Recommendations

In order to combat migrant health problems in Thailand, health service and preventive strategies should be developed as appropriate for sex, age, and nationalities of migrants. These strategies should also pay more attention on different in cause of death among male and female migrants and different age and nationalities. Strategies to prevent migrant death from accidents and injuries due to occupational hazard especially among the migrant children and labor force age should be developed. More efforts which focus on prevention of infectious diseases among the labor force age migrants should also be enhanced.

In term of migrant mortality data, more efficient instruments at national and local level should be developed in order to overcome both under enumeration and under registration of migrant death especially for undocumented migrants.

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