

CIGARETTE, ALCOHOL USE AND PHYSICAL ACTIVITY AMONG MYANMAR YOUTH WORKERS, SAMUT SAKHON PROVINCE, THAILAND

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Abstract. Over 1.2 million migrants from Myanmar are currently residing in Thailand. Little information is known about Myanmar youth risk behaviors. This cross-sectional study aimed to determine the prevalence and the factors associated with cigarette and alcohol use, and physical inactivity, among Myanmar youth working in a harbor town in Samut Sakhon Province, Thailand. One hundred and seventy-seven young workers aged 15-24 years, living in the study area, were interviewed by structured questionnaire. About 21.5% were current smokers, 25.4% were alcohol drinkers, and 36.7% were physically inactive. Univariate analysis indicated one variable was significantly associated with cigarette smoking: education level higher than primary school (OR=2.3, 95% CI 1.02-5.0). Three variables were significantly associated with alcohol drinking: married status (OR=2.2, 95%CI 1.02-4.5); non-seafood-processing workers, *i.e.* street vendors, construction laborers, etc. (OR=3.4, 95% CI 1.7-7.1), and high job stress due to supervisor/boss (OR=2.1 95% CI 1.1-4.2). Two variables were significantly associated with physical inactivity: female youth (OR=3.9 95% CI 2.1-7.5), and education level higher than primary school (OR=0.4, 95% CI 0.2-0.8). The prevalence of smoking, alcohol drinking and physical inactivity among Myanmar migrant youths was quite high. Government and non-government organizations should co-operate to provide interventions to reduce youths' risk behaviors.

INTRODUCTION

Forced migration policies in Myanmar and economic hardship have long-term effects on migration to other countries, including Thailand (Caouette and Pack, 2002; Burma, 2003). Since the late 1980s, Thailand has relied on cheap labor from neighboring countries primarily Cambodia, Lao PDR and Myanmar to help power its economic growth. It is difficult to estimate the actual number of Myanmar migrants in Thailand. During July 2004, the Thai Government initiated a migrant labor registration program in which over 1.2 million individuals registered and have been given a work permit and access to healthcare in Thailand. Myanmar migrant workers made up to 70.4% of the total individuals registered. Samut Sakhon Province had some

of the largest numbers registering (Anonymous, 2004).

Some migrants enter the country legally, but hundreds of thousands work illegally. They cannot access government health services and live in stressful environments, such as poor working and housing conditions (Win *et al*, 2002). In addition, they tend to be isolated and excluded from the discourse and initiatives of the general public, governments, and international agencies. As a result, contact with these populations is extremely limited, making it difficult to provide health information, commodities and services (Burma, 2003).

Migrating to Thailand involves profound changes to the Myanmar migrant workers' social, environmental, and cultural contexts. Many workers migrate without their families or existing social network (Griffin and Soskolne, 2003). Life in Thailand limits opportunities for normative behaviors for youth migrants, such as going out during the holidays. They also receive daily wages in Thailand far less than the minimum

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wage for Thai workers, and are exposed to the noises and smells of seafood processing. Such conditions cause young Myanmar workers stress and may lead to smoking, alcohol drinking, and physical inactivity (Chen *et al*, 2003; Paavola *et al*, 2004). These behaviors are risk factors for several diseases. Preventing risk behaviors among youths is important because behaviors are formed during this time and later affect health and health behaviors (Hetzl and McMichael, 1989; Blair *et al*, 1993; WHO, 2002).

Samut Sakhon is a harbor town whose mainstay is the fishery business. The Myanmar migrant communities in this province are so crowded that one could mistakenly believe that Samut Sakhon is a border province rather than an inner province near Bangkok. In 2002, over 20,000 of these workers were employed in the fishery business. To date, there is limited information related to the health risk behaviors of Myanmar youths in Thailand. This study aimed to explore the prevalence and factors associated with cigarette smoking, alcohol use and physical inactivity among Myanmar youths working in Samut Sakhon Province, Thailand.

MATERIALS AND METHODS

The study area was Samut Sakhon Province, a seaside town about 30 km southwest of Bangkok, where there are many seafood-processing factories. Although Samut Sakhon Province is centrally located just below Bangkok and not adjacent to the border, it has the largest Myanmar migrant population in Thailand. In 2002, a total of 22,656 local work permits were issued for foreign migrant workers in two sectors, fishery and fishery-related industries, but the actual number exceeded the official ceiling (Samut Sakhon Provincial Health Office, 2003).

The sample size for this study was estimated using the single proportion formula with 95% confidence interval. Sample size was calculated based on a rate of 3% drinking alcohol among Myanmar youths in Yangon (Than, 2001). Precision was set at 6.75%. The respondents were interviewed with structured questionnaires during January and February 2003. Although it was a convenience sampling, 177 youth migrant

workers were drawn from over 20,000 migrants in Talad Kung, Koh Samut, Klong Banya and Ta Jeen Wat Hong sub-districts, where most of the Myanmar migrant workers lived. Inclusion criteria were young workers aged 15-24 years, who had lived in the area for at least 3 months. Those who could not communicate verbally were excluded.

The study protocol was reviewed and approved by the Ethics Committee for Human Research of Mahidol University. Written consent was gained from individual participants before data collection.

Instruments

The structured questionnaire was translated from English into the Myanmar language by the third author and his research assistant, who are fluent in Myanmar languages. The questionnaire was comprised of 4 parts: 1) general characteristics; 2) health-risk behaviors, focusing on smoking, alcohol drinking, and physical inactivity; 3) financial problems; and 4) job stress.

General characteristics included age, sex, marital status, education level, occupation, and average monthly income.

Smoking and alcohol drinking. Current smokers were those youths who reported smoking in the past 30 days. Former smokers were those youths who reported smoking a whole cigarette, but not having smoked in the past 30 days. Similar classifications were used to categorize alcohol status. Current drinkers were those who reported drinking in the past 30 days, while former drinkers were youths who had consumed at least one alcoholic beverage in their lifetime, but not in the past 30 days.

Physical activity was measured through the number of hours/days involved in 3 main activities: 1) vigorous physical exercise, such as soccer, running, or fast bicycling; less vigorous, such as fast walking, slow bicycling, 2) engage in activities at home/work, such as carrying loads, heavy gardening; less vigorous activities, such as cleaning the house, walking to work, or carrying light things, 3) watching TV/video (sedentary lifestyle). It consisted of 5 items, and the positive items used the number of days per week on a score of 0-7. A reverse score was assigned

for negative items. A total score of $\leq 70\%$ was classified as physical inactivity.

Financial problems were measured with 6 items, using a 3-point Likert scale, rated as 0=always, 1=sometimes, and 2=never. Cronbach's alpha was 0.75. The respondents were asked to rate the affordability of 6 spending areas in the household, *ie*, accommodation, clothing, household equipment or entertainment accessories, food, medical care, and leisure.

Job stress was measured through 21 items, using a 3-point Likert scale, rated as 3=agree, 2=uncertain, and 1=disagree; Cronbach's alpha was 0.84. The components covered: workload, feeling at work, workplace situation, colleagues and supervisor/boss at work and role within the workplace. Scores $\geq 80\%$ of the possible total score were classified as high, scores 60-79% as moderate, and $< 60\%$ as low.

Data analysis

Descriptive statistics were used to describe all variables. The odds ratio and 95% confidence interval (CI) were used to determine the association between the studied factors (referred to independent variables, dependent variables): cigarette and alcohol use, and physical activity.

RESULTS

Of the 177 young workers, 53.1% were male, with a mean age of 21.1 years. Seventy point six percent were in the age group 20-24 years. Seventy-three point four percent had finished primary or secondary school. Only 4% were illiterate. Seventy-four point six percent were seafood workers, while 11.3% were street vendors. The average monthly income ranged from 2,000 to 12,000 baht (40 baht=US\$1.00) with a median of 4,000 baht. Ninety point four percent had an average monthly income $\leq 5,000$ baht. Seventy-four point six percent were single and 19.8% were married and lived together.

Prevalence of smoking, alcohol drinking and physical inactivity

Smoking. The prevalence of current smoking was 21.5% (Table 1). Of the 38 current smokers, all were young male smokers and 75.0% started smoking at age 15-20 years. Sixty-five

Table 1
Prevalence of cigarette and alcohol use, and physical inactivity among 177 young Myanmar workers.

Variable	Number	%
Smoking	44	24.9
Current smokers	38	21.5
Former smokers	6	3.4
Alcohol drinking	45	25.4
Physical inactivity	65	36.7

Table 2
Smoking behavior of 38 young Myanmar workers.

Variable	Number	%
Sex		
Male	38	100.0
Female	0	0.0
Age started smoking (years)		
10 - 14	4	9.1
15 - 19	33	75.0
20 - 22	7	15.9
Mean \pm SD = 17.1 \pm 2.3		
Tried to quit smoking during the past 12 months	25	65.8
Smoked a cigarette during the past 30 days (days)		
5 - 9	6	15.8
10 - 19	9	23.7
20 - 30	23	60.5
Mean \pm SD = 22.7 \pm 9.5		
Number of cigarettes per day on the smoking days		
1 - 2	14	36.8
3 - 5	21	55.3
6 - 10	3	7.9
Mean \pm SD = 3.3 \pm 2.3		

point eight percent tried to quit smoking during the past 12 months. Sixty point five percent had smoked cigarettes 20-30 days in the past 30 days. Fifty-five percent smoked 3-5 cigarettes per day on the smoking days (Table 2).

Alcohol drinking. Twenty-five point four percent were current alcohol drinkers (Table 1). Of the 45 drinkers, all were young males, and 57.8%

started drinking at age 18-20 years. Sixty-four point five percent drank 1-4 days during the past 30 days, 20.0% drank ≥ 5 drinks for 2-5 days during the past 30 days (Table 3).

Physical inactivity. The proportion of physically inactive youths was 36.7% (Table 1). Nearly 60% of the youths did not take part in either vigorous or less vigorous physical exercise. For those who took part in physical exercise ≥ 3 days, 25.9% took part in vigorous and 29.4% in less vigorous physical exercise. Although 62.1% of the youths did not engage in vigorous activities at home or in the workplace, 68.9% were engaged in less vigorous activities for the whole week. Forty-nine point two percent watched TV/video for at least one hour per day for the whole week (Table 4).

Financial problems and job stress

Sixty-four point four percent of respondents reported they had high financial problems (Table 5). Upon further analysis of the details, only 20% reported that they always had enough money to afford entertainment accessories, *ie*, TV and CD player, leisure and fun activities (Table 6). Regarding job stress, only 1.1% reported they had high overall job stress. Considering the individual components of job stress, 10.2% said that they had high job stress due to the supervisor or boss (Table 5).

Factors associated with health risk behaviors

Univariate analysis indicated one variable was significantly associated with cigarette

smoking: education level higher than primary school (OR=2.3, 95%CI 1.02-5.0). Three variables were significantly associated with alcohol drinking: married status (OR=2.2, 95%CI 1.02-4.5); non-seafood-processing workers, *ie*, street vendors, laborers, etc. (OR=3.4, 95%CI 1.7-7.1),

Table 3
Alcohol drinking behavior of 45 young Myanmar workers.

Variable	Number	%
Sex		
Male	45	100.0
Female	0	0.0
Age started drinking (years)		
13 - 14	1	2.2
15 - 17	14	31.1
18 - 20	26	57.8
21 - 23	4	8.9
Mean \pm SD = 18.2 \pm 2.2		
Drank alcohol during the past 30 days (days)		
0	5	11.1
1 - 4	29	64.5
5 - 9	6	13.3
10 - 18	5	11.1
Mean \pm SD = 3.8 \pm 4.1		
Drank ≥ 5 drinks of alcohol during the past 30 days (days)		
0	25	55.6
1	11	24.4
2-5	9	20.0
Mean \pm SD = 0.9 \pm 1.4		

Table 4
Percentages doing physical exercise during the past seven days, among 177 young Myanmar workers.

Item	Number of days							
	0	1	2	3	4	5	6	7
Participated in physical exercise:								
Vigorous	58.2	7.3	8.5	5.6	2.8	2.8	4.0	10.7
Less vigorous	59.9	6.8	4.0	7.9	1.7	2.8	2.3	14.7
Engaged in activities at home/workplace:								
Vigorous	62.1	4.0	6.2	4.5	2.3	1.1	7.9	11.9
Less vigorous	5.6	4.5	4.5	6.8	2.8	4.5	2.3	68.9
Sedentary lifestyle:								
Watched TV/video ≥ 1 hr/day	3.4	6.8	14.7	15.8	5.6	2.3	2.3	49.2

Table 5
Percentages for level of financial problems
and job stress of 177 young Myanmar
workers.

Variable	High	Moderate	Low
Overall financial problem	64.4	19.8	15.8
Overall job stress	1.1	16.9	81.9
Work load	8.5	30.5	61.0
Feeling at work	6.8	26.0	67.2
Work place	4.0	22.6	73.4
Colleagues	1.7	20.9	77.4
Supervisor/Boss	10.2	27.7	62.1
Role within the workplace	3.4	15.3	81.3

Table 6
Percentages for financial problems of 177
young Myanmar workers, by item.

Item	Always	Some-	Never
		times	
Enough money to:			
Rent accommodation	42.4	51.4	6.2
Afford:			
Food	36.7	57.6	5.6
Medical care	31.6	65.5	2.8
Clothing	26.6	71.2	2.3
Leisure and fun activities	19.2	71.2	9.6
Entertainment accessories (TV)	18.1	70.6	11.3

and high job stress due to supervisor/boss (OR=2.1, 95%CI 1.1-4.2). Two variables were significantly associated with physical inactivity: female youth (OR=3.9, 95% CI 2.1-7.5), education level higher than primary school (OR=0.4, 95%CI 0.2-0.8), as shown in Table 7.

DISCUSSION

The research findings indicate that only male youths reported current smoking and alcohol drinking during the 30 days before the survey. A possible reason was that society considers both smoking and alcohol drinking as bad behaviors. Even though substance use was an unacceptable behavior for both boys and girls, the blemish was greater for girls. This is because cultural and social restrictions on the use of these

substances by women are strongly held, while for men smoking and alcohol drinking behaviors were considered uncontrollable male activities. Male smoking was seen as normal (Morrow *et al*, 2002). The results confirmed previous studies, which indicated that cigarette smoking and alcohol consumption begins in adolescence and the prevalence increases with age and education (Johnston, 1997; Elder *et al*, 2000; Holmen *et al*, 2000; Kulbok *et al*, 2002; WHO, 2002; Paavola *et al*, 2004).

Young married workers were 2.2 times more likely to drink alcohol than young single workers. The possible reasons were: 1) married youth workers might have more social problems than single persons in Thailand because they had to struggle for their families; 2) they might be more socially active than single persons. Alcoholic beverages will be served at many social activities to reflect the generosity of the host; 3) they may try to release their stress by drinking alcohol. Once they have partners, they tend to drink more. Other workers had to work harder than seafood-processing workers and were more tired. It is possible that they were more likely to drink alcohol than seafood-processing workers.

The prevalence of inactivity among young Myanmar workers was 32.8%. Of these, 24.8% were female (data not shown). Often, in many workplaces, females were found to work shift-work for 16 hours to get double payment in a day. They were exhausted and did not want to do physical exercise or physical activity. This result confirmed previous studies, which found that females had lower levels of physical activity (Dowdell and Santucci, 2004; Paavola *et al*, 2004).

No significant association was found between overall financial problems, overall job stress, and health-risk behaviors, except among young workers with high/moderate job stress related to the supervisor/boss. The result confirmed the finding of a previous study, that individuals drank more alcohol as a means of coping with economic stress, job stress, and marital problems (Pohorecky, 1991). The migrants had fewer problems with renting accommodation because several of them stayed at their workplace.

Table 7

Prevalence and odds ratio (OR) of current smoking, alcohol drinking, and physical inactivity by general characteristics, financial problems, and job stress among 177 young Myanmar workers.

Characteristic	N	Current smoking			Alcohol drinking			Physical inactivity		
		%	OR	95%CI	%	OR	95%CI	%	OR	95%CI
Gender										
Male	94	40.4						22.3	1.0	
Female	83	0.0	n/a	n/a	0.0	n/a	n/a	53.0	3.9 ^c	2.1-7.5
Age (years)										
15-19	52	19.2	1.0		17.3	1.0		44.2	1.0	
20-24	125	22.4	1.2	0.5-2.7	28.8	1.9	0.9-4.4	33.6	0.6	0.3-1.2
Marital status										
Single	132	21.6	1.0		21.2	1.0		36.6	1.0	
Married	45	20.9	1.96	0.4-2.2	37.8	2.2 ^b	1.02-4.5	37.2	1.03	0.5-2.1
Education										
≤primary school	72	13.9	1.0		19.4	1.0		48.6		
>primary school	105	26.7	2.3 ^b	1.02-5.0	29.5	1.7	0.9-3.6	28.6	0.4 ^c	0.2-0.8
Occupation										
Seafood workers	132	18.9	1.0		18.9	1.0		40.9	1.0	
Others	45	28.9	1.7	0.8-3.8	44.4	3.4 ^c	1.7-7.1	24.4	0.5	0.2-1.0
Income (baht) ^a										
≤4,000	121	19.8	1.0		21.5	1.0		40.5	1.0	
>4,000	56	25.0	1.4	0.6-2.9	37.8	1.9	0.9-3.8	28.6	0.6	1.2-0.1
Overall financial problem										
Low/Moderate	63	15.9	1.0		28.6	1.0		33.3	1.0	
High	114	24.6	1.7	0.8-3.8	23.7	0.8	0.4-1.6	38.6	1.3	0.7-2.4
Overall job stress										
Low	145	19.3	1.0		22.8	1.0		38.6	1.0	
Moderate/High	32	31.3	1.9	0.8-4.5	37.5	2.0	0.9-4.6	28.1	0.6	0.3-1.4
Supervisor/boss										
Low	110	21.8	1.0		20.0	1.0		38.2	1.0	
Moderate/High	67	20.9	0.95	0.5-2.0	34.3	2.1 ^b	1.1-4.2	34.3	0.85	0.5-1.6

n/a = not applicable; ^a40 baht = 1 US\$; ^bp < 0.05; ^cp < 0.01

The limitations of the study include: 1) information relied on self-reports without biochemical measures to validate cigarette and alcohol use; 2) there was limited information about the occupational environment; 3) being a cross-sectional survey, it is not possible to describe the true causality between exposure and outcome; 4) random sampling could not be used, with a consequent problem of selection bias. The result can be generalized only to migrant youths working in Samut Sakhon Province. They are not representative of all persons in this age group, or all Myanmar youths working in Thailand. Further studies should include a more representative sample size.

In conclusion, the prevalence of cigarette and alcohol use, and physical inactivity among Myanmar youth workers in Samut Sakhon Province was quite high. This study provides needed baseline information for implementing community-based tobacco/alcohol use prevention programs, interventions to increase physical activity and for further studies that target this socio-cultural context. Massive economic restructuring has caused local workers, especially youths, to move away from the "3Ds": dirty, dangerous and difficult. Many young Thais have been found to be working in convenience stores, fast-food chains, gasoline stations, and department stores. Therefore, migrant labors are still needed.

The government should introduce a healthy workplace in small or family-owned factories. Companies with good workplace environments and good bosses or friendly supervisors can reduce migrant workers job stress. In an indirect way, this may reduce job stress-induced smoking and alcohol use and occupational injuries among migrant workers.

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