TOBACCO AND ALCOHOL USE AMONG CHRONIC DISEASE PATIENTS IN CAMBODIA, MYANMAR AND VIETNAM

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Abstract. The aim of this study was to explore the prevalence of tobacco and alcohol use and to determine the factors associated with tobacco and alcohol use among chronic disease patients in Cambodia, Myanmar and Vietnam. A cross-sectional survey was conducted among 4,803 adult chronic disease patients (mean age 49.3 years; SD=16.5) recruited systematically from health facilities. Fifteen point five percent of those studied were current smokers, 14.5% current smokeless tobacco users, 20.7% daily tobacco users (smokers or smokeless tobacco), 9.3% problem drinkers and 4.1% both daily tobacco users and problem drinkers. Having been diagnosed with hypertension, chronic obstructive pulmonary disease (COPD), liver disease, and dyslipidemia were positively associated with daily tobacco use; liver disease, gout and other musculoskeletal conditions, kidney disease, and dyslipidemia were positively associated with problem drinking. On multivariate logistic regression analysis, socio-demographics (being male, older age, lower education, coming from Myanmar, being single, divorced or widowed, rural residence and part-time employed), problem drinking and having two or more chronic health conditions were associated with daily tobacco use. Socio-demographics (being male, younger age, coming from Vietnam, being married or cohabiting), daily tobacco use and not having depressive symptoms were found to be associated with problem drinking. High prevalences of daily tobacco use and problem drinking were found among chronic disease patients and several socio-demographic, disease specific, and other health risk behavior factors were identified which can guide substance use intervention programs for this population.

Keywords: smoking, smokeless tobacco use, alcohol use, chronic disease patients, health risk behavior, Cambodia, Myanmar, Vietnam

INTRODUCTION

The epidemiological transition from communicable to non-communicable diseases (NCDs) have been observed in Southeast Asia posing a public health challenge (Oo *et al*, 2015). The identification, prevention and treatment of common

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NCD risk factors, such as tobacco and alcohol use, are vital in the general population and in particular among chronic disease patients. A number of chronic conditions are worsened by tobacco and/or alcohol use (Ryan *et al*, 2013).

In Southeast Asia a high prevalence of tobacco (smoking and smokeless) use among men in the general population has been observed (Thakur *et al*, 2011; Hoy *et al*, 2013), including Cambodia (48.0% of men and 3.6% of women) (Singh *et al*, 2009), Myanmar (31.8% of men and 0.4% of women) (Thakur *et al*, 2011) and Vietnam (59% of men and 0.7% of women) (Minh *et al*, 2008). In Southeast Asia a high prevalence of problem drinking among men in the general population has been reported (Giang *et al*, 2013; Hoy *et al*, 2013), including in Cambodia, Myanmar and Vietnam (67% of men and 3% of women (Minh *et al*, 2008).

Studies in the general population and among primary care and chronic disease patients found the following factors to be associated with tobacco use: 1) sociodemographic factors, including older age (Sreeramareddy *et al*, 2014), lower education level (Lee *et al*, 2013; Sreeramareddy *et al*, 2014), unmarried status (Lee *et al*, 2013) and poverty (Sreeramareddy *et al*, 2014), 2) health risk behaviors, including alcohol use (Manwell *et al*, 2002; Banta *et al*, 2013), and 3) specific diseases and poor mental health (Lee *et al*, 2013). Factors associated with problem drinking include: 1) sociodemographic factors such as young age (Lee *et al*, 2013), a lower education level (Lee *et al*, 2013), unmarried status (Lee *et al*, 2013); 2) health risk behaviors, including tobacco use (Rosal *et al*, 2000; Banta *et al*, 2013), poorer diet (Rosal *et al*, 2000; Maatoug *et al*, 2013); physical inactivity (Rosal *et al*, 2000), and 3) chronic diseases and poor mental health, such as a higher number of chronic diseases (Ryan *et al*, 2013), hypertension (Naing and Aung, 2014; Do *et al*, 2015) and poor mental health (Lee *et al*, 2013).

There is a lack of studies investigating tobacco and alcohol use among chronic disease patients, especially in Southeast Asia. Therefore, the aim of this study was to explore the prevalence of tobacco and alcohol use and to determine the factors associated with that use among chronic disease patients in Cambodia, Myanmar and Vietnam.

MATERIALS AND METHODS

Study design and sampling

In the study countries (Cambodia, Myanmar and Vietnam) a cross-sectional survey in rural and urban health facilities was conducted among out-patients with chronic diseases. The study facilities were convenience selected. Each eligible patient aged ≥18 years with a chronic disease was selected from the health facility, using a systematic sampling procedure.

Trained research assistants conducted interviews with the patients using structured questionnaires after obtaining informed consent. For this study, patients with one of these 20 chronic conditions were included in the study: asthma, chronic obstructive pulmonary disease (COPD), diabetes mellitus, hypertension, dyslipidemia, coronary artery disease, cardiac failure, cardiac arrhythmias, stroke, arthritis, cancer, gout, Parkinson's disease, liver disease, kidney disease, thyroid disease, stomach and intestinal diseases and mental disorders (Lee *et al*, 2004).

Ethical considerations

In Cambodia, the National Ethics Committee for Health Research, Minis-

try of Health, Cambodia (Reference no: 0225NECHR), in Myanmar the Research and Ethics Committee, University of Medicine 1, Yangon, and in Vietnam The Committee for Research Ethics, Hanoi School of Public Health and in Thailand, The Committee for Research Ethics in Social Sciences, Mahidol University (COA. No.: 2014/193.0807), approved the study protocol.

Research instrument

Tobacco use was assessed with four questions: 1) Do you currently smoke any tobacco products, such as cigarettes, cigars or pipes? If they answered yes, they were asked 2) Do you currently smoke tobacco products daily? 3) Do you currently use any smokeless tobacco, such as snuff, chewing tobacco, betel? If they answered yes, they were asked 4) Do you currently use smokeless tobacco products daily? (WHO, 1998).

Problem drinking was assessed using the Alcohol Use Disorder Identification Test (AUDIT)-C with a cut-off score of four defined as problem drinking (Bush *et al*, 1998). The Cronbach alpha for the AUDIT-C was 0.81 for this sample.

For diet, we asked about 7 food habits: consumption of fast food, fruits and vegetables, sweet drinks, protein, chips and crackers, desserts and fats during the previous 7 days (Gaskins *et al*, 2007). From these 7 items we calculated a total dietary score of up to 14 points with 0 points signifying the best dietary habits and 14 signifying the poorest dietary habits (Gaskins *et al*, 2007).

Physical activity was assessed using the General Physical Activity Questionnaire (GPAQ) (WHO, 2009). The total physical activity score was used to divide participants into 3 groups: inactive, moderately active, and highly active (WHO, 2009).

The Hospital Anxiety and Depression Scale (HADS) (Zigmond and Snaith, 1983) was used to assess anxiety (7 items) and depression (7 items). A score of ≥11 was used to define anxiety and depression (Zigmond and Snaith, 1983). The HADS subscales were found to be internally reliable (the α for anxiety was 0.73 and for depression was 0.71).

Sociodemographic data obtained from all participants were: age, sex, country, formal education level, marital status, employment status and residency status.

Data analysis

The data were analysed using SPSS for Windows, version 20.0 (IBM, Armonk, NY). The proportions of those who used tobacco and alcohol were calculated as percentages and means and standard deviations. Multivariate logistic regression analysis was conducted to calculate Odds Ratios (OR) and 95% Confidence Intervals (95% CI) to determine associations between sociodemographic, health risk behaviors, chronic conditions, mental health and daily tobacco use and problem drinking. Statistical significance was set at $p<0.05$.

RESULTS

Sample characteristics and prevalence rates of tobacco and alcohol use

The total number of study participants was 4,803 adults: 1,602 from Cambodia, 1,600 from Myanmar and 1,601 from Vietnam. The mean age of participants was 49.3 years (SD=16.5), with an age range of 18-94 years; 69.6% were female. Fifty-eight point eight percent of the participants were age ≥46 years. Fifty-four point five percent of participants had been diagnosed with at least one chronic disease in the previous 12 months.

Table 1

Sample characteristics by tobacco and alcohol use status among study subjects.

Variable	Sample	Current smoking	Current smokeless tobacco use	Daily tobacco use	Problem drinking	Both daily tobacco use and problem drinking
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
All	4,803	752 (15.8)	683 (14.5)	979 (20.7)	445 (9.3)	196 (4.1)
Age (in years)						
18-45	1,917 (41.2)	225 (11.9)	140 (7.5)	225 (13.5)	267 (13.9)	105 (5.6)
46-60	1,517 (32.6)	264 (17.6)	285 (19.2)	366 (24.4)	122 (8.0)	70 (4.7)
61-101	1,216 (26.2)	236 (19.5)	258 (21.5)	334 (27.8)	40 (3.3)	17 (1.4)
Sex						
Female	1,447 (30.4)	210 (6.4)	433 (13.3)	416 (12.7)	74 (2.2)	11 (0.3)
Male	3,314 (69.6)	534 (37.4)	249 (17.7)	554 (39.0)	366 (25.3)	181 (12.7)
Country						
Cambodia	1,602 (33.4)	165 (10.3)	309 (19.4)	306 (19.1)	84 (5.2)	20 (1.2)
Myanmar	1,600 (33.3)	326 (20.4)	358 (22.4)	439 (27.4)	44 (2.8)	35 (2.2)
Vietnam	1,601 (33.3)	261 (16.8)	16 (1.1)	234 (15.3)	317 (19.8)	141 (9.2)
Education						
Grade 0-5	1,650 (34.4)	255 (15.5)	403 (24.6)	436 (26.5)	65 (3.9)	32 (1.9)
Grade 6-11	2,080 (43.4)	359 (17.5)	244 (12.0)	413 (20.2)	204 (9.8)	103 (5.0)
Grade 12 or more	1,066 (22.2)	138 (13.3)	36 (3.5)	130 (12.5)	175 (16.4)	61 (5.9)
Marital status						
Single/divorced/widowed	1,249 (26.4)	167 (13.5)	194 (15.8)	248 (20.6)	89 (7.1)	30 (2.4)
Married/cohabiting	3,478 (73.6)	578 (16.8)	486 (14.3)	724 (21.2)	346 (9.9)	164 (4.7)
Employment status						
Not employed	2,556 (55.4)	345 (13.1)	394 (15.1)	506 (19.3)	112 (4.2)	40 (1.5)
Part-time employed	723 (15.1)	178 (24.8)	165 (23.1)	206 (28.8)	107 (14.8)	50 (7.0)
Full-time employed	1,415 (29.5)	229 (16.4)	124 (9.1)	267 (19.3)	226 (16.0)	106 (7.7)
Geolocality						
Rural	2,657 (55.4)	382 (14.5)	384 (14.8)	524 (20.0)	249 (9.4)	110 (4.2)
Urban	2,135 (44.6)	370 (17.6)	297 (14.3)	453 (21.6)	196 (9.2)	86 (4.1)
Chronic conditions						
One	2,605 (54.5)	390 (15.1)	266 (10.4)	471 (18.3)	272 (10.4)	113 (4.4)
Two	1,358 (28.4)	235 (17.6)	248 (18.8)	321 (24.1)	110 (8.1)	56 (4.2)
Three or more	820 (17.1)	125 (15.4)	169 (21.1)	185 (23.0)	59 (7.2)	25 (3.1)
Quality of life						
Low	2,174 (45.8)	383 (17.8)	349 (16.4)	508 (23.7)	176 (8.1)	80 (3.7)
Medium	491 (10.3)	59 (12.1)	87 (17.9)	92 (18.9)	35 (7.1)	13 (2.7)
High	2,085 (43.9)	303 (14.7)	245 (12.0)	371 (18.1)	222 (10.6)	96 (4.7)
Physical inactivity						
No	3,318 (69.1)	479 (14.6)	442 (13.5)	641 (19.5)	282 (8.5)	123 (3.7)
Yes	1,485 (30.9)	273 (18.7)	241 (16.8)	338 (23.3)	163 (11.0)	73 (5.0)
Anxiety symptoms						
No	3,918 (83.0)	644 (16.6)	539 (14.0)	806 (20.9)	374 (9.5)	159 (4.1)
Yes	803 (17.0)	90 (11.3)	133 (16.7)	156 (19.6)	59 (7.3)	30 (3.8)
Depression symptoms						
No	2,866 (60.9)	471 (16.6)	293 (10.5)	541 (19.3)	335 (11.7)	151 (5.4)
Yes	1,843 (39.1)	264 (14.4)	377 (20.6)	422 (23.0)	99 (5.4)	43 (2.3)
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	
Poor diet index (scale: 0-14)	4.78 (2.2)	4.76 (2.2)	5.09 (1.9)	4.83 (2.1)	4.64 (2.4)	4.66 (2.5)

M, mean; SD, standard deiration.

Seventy-seven point eight percent had an education level less than secondary school and 55.4% lived in rural areas. Fifteen point eight percent of participants were current smokers, 14.5% were current smokeless tobacco users, 20.7% were daily tobacco users (smokers or smokeless tobacco), 9.3% were problem drinkers and 4.1% were both daily tobacco users and problem drinkers. Participants from Myanmar had the highest prevalence of daily tobacco use (27.4%) and from Vietnam had the highest prevalence of problem drinking (19.8%) of the three study countries (Table 1).

Chronic disease and tobacco and alcohol use

The six most common chronic diseases among the participants were: stomach and intestinal disease (40.3%), hypertension (29.2%), arthritis (18.9%), cardiovascular disease (16.8%), gout and other musculoskeletal conditions (15.6%) and diabetes (10.6%). Daily tobacco use was common among patients with COPD (34.3%), hypertension (26.7%), dyslipidemia (25.1%), liver disease (24.6%), and diabetes (23.6%). Problem drinking was common among those with liver disease (24.4%), dyslipidemia (15.2%), kidney disease (13.3%) and gout (12.6%).

Hypertension, COPD, liver disease, and dyslipidemia were positively associated with daily tobacco use; cancer and thyroid disease were negatively associated with daily tobacco use. Liver disease, gout and other musculoskeletal conditions, kidney disease, and dyslipidemia were positively associated with problem drinking while diabetes was negatively associated with problem drinking (Table 2).

Associations with daily tobacco use and problem drinking

On multivariate analysis the socio-demographic and other health risk behavior factors significantly associated with daily tobacco use were: male gender, older age, lower education level, being from Myanmar, marital status, having a rural residence, and being employed part-time, history of problem drinking, and having two or more chronic conditions. Factors associated with problem drinking were: male gender, younger age, being from Vietnam, being married or cohabiting, daily tobacco use and not having depressive symptoms. Factors associated with both daily tobacco use and problem drinking were: male gender, younger age, lower education level, being from Vietnam, marital status, being employed full-time, having a poor diet index and having three or more chronic conditions (Table 3).

DISCUSSION

In our study, males had higher rates of daily tobacco use (39.0%), problem drinking (25.3%) and both daily tobacco use and problem drinking (12.7%), similar to previous studies from Cambodia (Singh *et al*, 2009), Myanmar (Thakur *et al*, 2011; Oo *et al*, 2015), Vietnam (Minh *et al*, 2008), Brazil (Botega *et al*, 2010), South Africa (Peltzer, 2014), and Sri Lanka (de Silva *et al*, 2011). In our study, smokeless tobacco use among both men and women was the most common in Myanmar (22.4%) followed by Cambodia (19.4%). Sein *et al* (2014) found the use of smokeless tobacco and betel chewing was more common in Myanmar than any of the other country in Southeast Asia.

In our study daily tobacco use was the most common among patients with COPD, hypertension, dyslipidemia, liver disease, and diabetes; having hypertension, COPD, liver disease, and dyslipidemia was positively associated with daily

Table 2
Associations for chronic conditions with tobacco use and problem drinking.

Chronic condition	Sample n (%)	Daily tobacco use			Problem drinking		
		%	OR (95% CI)[a]	p-value	%	OR (95% CI)[a]	p-value
Stomach and intestinal disease	1935 (40.3)	18.5	0.89 (0.76-1.04)	0.135	9.3	1.18 (0.96-1.45)	0.118
Hypertension	1402 (29.2)	26.7	1.41 (1.15-1.73)	<0.001	5.9	1.19 (0.92-1.54)	0.177
Arthritis	909 (18.9)	19.9	0.88 (0.73-1.96)	0.178	7.7	1.14 (0.84-1.55)	0.408
Cardiovascular disease	804 (16.8)	21.9	1.18 (0.94-1.49)	0.160	5.0	0.94 (0.70-1.25)	0.659
Gout and other musculoskeletal conditions, such as chronic backache	748 (15.6)	22.9	1.12 (0.89-1.42)	0.343	12.6	1.59 (1.19-2.12)	0.002
Diabetes mellitus	509 (10.6)	23.6	1.17 (0.93-1.47)	0.171	3.5	0.51 (0.32-0.81)	0.004
Migraine or frequent headaches	350 (7.3)	14.3	0.67 (0.49-0.93)	0.016	7.1	1.35 (0.94-1.95)	0.103
Chronic obstructive pulmonary disease	308 (6.4)	34.3	1.80 (1.32-2.45)	<0.001	6.5	0.78 (0.51-1.19)	0.244
Kidney disease	240 (5.0)	21.5	1.29 (0.88-1.89)	0.194	13.3	1.58 (1.06-2.37)	0.026
Liver disease	234 (4.9)	24.6	1.48 (1.04-2.11)	0.030	24.4	1.77 (1.21-2.58)	<0.001
Asthma	219 (4.6)	19.0	0.93 (0.61-1.43)	0.745	5.9	0.66 (0.39-1.09)	0.105
Dyslipidemia	210 (4.4)	25.1	1.54 (1.03-2.32)	0.037	15.2	2.63 (1.67-4.13)	<0.001
Mental disorder	119 (2.5)	13.6	0.71 (0.35-1.44)	0.348	5.0	0.71 (0.29-1.74)	0.449
Thyroid disease	75 (1.6)	8.3	0.41 (0.18-0.95)	0.038	10.7	1.36 (0.48-3.80)	0.596
Cancer	72 (1.5)	11.3	0.27 (0.09-0.78)	0.015	8.3	1.11 (0.43-2.84)	0.834
Parkinson's disease	69 (1.4)	16.4	1.29 (0.54-2.81)	0.519	7.2	1.36 (0.48-3.80)	0.563

[a] Adjusted for age, sex, education, geolocality and duration of chronic condition.

Table 3
Associations between daily tobacco and problem drinking among study subjects.

Variable	Daily tobacco use AOR (95% CI)[1]	Problem drinking AOR (95% CI)[2]	Both daily tobacco use and problem drinking AOR (95% CI)[3]
Sex			
Female	1.00	1.00	1.00
Male	4.37 (3.63-5.26)[a]	17.74 (10.96-19.82)[a]	55.54 (19.32-65.48)[a]
Age (in years)			
18-45	1.00	1.00	1.00
46-60	1.96 (1.60-2.40)[a]	0.46 (0.34-0.63)[a]	0.64 (0.44-0.95)[c]
61-101	1.95 (1.55-2.44)[a]	0.20 (0.12-0.31)[a]	0.16 (0.08-0.32)[a]
Country			
Cambodia	1.00	1.00	1.00
Myanmar	1.70 (1.36-2.14)[a]	0.45 (0.27-0.71)[a]	2.61 (1.31-5.20)[b]
Vietnam	0.60 (0.45-0.80)[a]	3.62 (2.32-5.66)[a]	12.99 (6.51-29.94)[a]
Education			
Grade 0-5	1.00	1.00	1.00
Grade 6-11	0.49 (0.40-0.59)[a]	0.96 (0.66-1.40)	0.70 (0.42-1.17)
Grade 12 or more	0.29 (0.22-0.39)[a]	0.73 (0.47-1.14)	0.35 (0.19-0.65)[a]
Marital status			
Single/divorced/widowed	1.00	1.00	1.00
Married/cohabiting	0.73 (0.61-0.87)[a]	1.61 (1.15-2.26)[c]	1.69 (1.05-2.71)[c]
Employment status			
Not employed	1.00	1.00	1.00
Part-time employed	1.61 (1.29-2.02)[a]	1.78 (1.23-2.58)[b]	1.78 (1.05-3.01)[c]
Full-time employed	1.02 (0.83-1.26)	1.35 (0.98-1.87)	1.62 (1.01-2.60)[c]
Geolocality			
Rural	1.00	1.00	1.00
Urban	1.29 (1.09-1.52)[b]	0.93 (0.71-1.21)	1.16 (0.81-1.66)
Chronic conditions			
One	1.00	1.00	1.00
Two	1.44 (1.20-1.73)[a]	1.04 (0.77-1.41)	1.46 (0.98-2.19)
Three or more	1.51 (1.20-1.90)[a]	1.21 (0.81-1.80)	1.76 (1.00-3.10)[c]
Quality of life			
Low	1.00	1.00	1.00
Medium	1.02 (0.79-1.33)	0.87 (0.54-1.40)	0.73 (0.37-1.44)
High	0.85 (0.71-1.00)	1.02 (0.77-1.34)	1.12 (0.77-1.66)
Physical inactivity			
No	1.00	1.00	1.00
Yes	1.17 (0.98-1.39)	1.17 (0.89-1.53)	1.20 (0.83-1.75)
Poor diet index (scale)	1.04 (0.99-1.08)	1.00 (0.94-1.06)	1.11 (1.02-1.20)[c]
Anxiety symptoms			
No	1.00	1.00	1.00
Yes	0.96 (0.77-1.18)	0.84 (0.58-1.22)	0.93 (0.57-1.53)
Depression symptoms			
No	1.00	1.00	1.00
Yes	1.20 (0.98-1.46)	0.69 (0.47-0.99)[c]	0.91 (0.55-1.50)
Problem drinking	2.60 (2.04-3.32)[a]		
Daily tobacco use		2.11 (1.65-2.69)[a]	

[a]$p<0.001$; [b]$p<0.01$; [c]$p<0.5$; AOR, adjusted odds ratio; CI, confidence interval.
[1]Hosmer and Lemeshow chi-square = 51.55, $p < 0.001$; Nagelkerke R^2 = 0.26.
[2]Hosmer and Lemeshow chi-square = 7.77, $p = 0.456$; Nagelkerke R^2 = 0.40.
[3]Hosmer and Lemeshow chi-square = 4.76, $p = 0.783$; Nagelkerke R^2 = 0.40.

tobacco use. Smoking causes COPD (Forey *et al*, 2011), emphasizing the need for smoking cessation among COPD patients. Patients with liver disease in our study had the highest prevalences of problem drinking, followed by dyslipidemia, kidney disease and gout; liver disease, gout, kidney disease, and dyslipidemia were positively associated with problem drinking. Alcohol consumption is associated with fatty liver disease, alcoholic hepatitis and cirrhosis (Parry *et al*, 2011), indicating the need for alcohol cessation among this group of chronic disease patients. While our study found a positive association between having gout and other musculoskeletal conditions and problem drinking, Ekholm *et al* (2009) found a negative association between chronic pain and alcohol use. Ekholm *et al* (2009) also found cigarette smoking increased the odds in individuals suffering from chronic pain, but in our study we did not find this association. Unlike some previous studies (Naing and Aung, 2014; Do *et al*, 2015), we did not find an association between hypertension and problem drinking. Similar to a previous study (Pengpid *et al*, 2016), we found a negative association between diabetes and problem drinking. It is possible patients with diabetes may reduce or stop alcohol use but not daily tobacco use. Compared to having one chronic condition, having two, three of more chronic conditions increased the odds of daily tobacco use and combined daily tobacco use and problem drinking, similar to a previous study (Ryan *et al*, 2013) that found an association between having more chronic diseases and a history of problem drinking.

Similar to previous studies (Lee *et al*, 2013; Sreeramareddy *et al*, 2014), we found an association between the combination of daily tobacco use and having problem drinking with the following: male sex, younger age, lower level of education and unmarried status. We found that problem drinking was associated with daily tobacco use (and vice versa) and poor diet was associated with both tobacco and alcohol use, similar other studies (Rosal *et al*, 2000; Manwell *et al*, 2002; Banta *et al*, 2013; Maatoug *et al*, 2013). Tobacco and alcohol use can alter an individual's food selections and nutrient intake (Ma *et al*, 2000). Health promotion interventions should target multiple risk behaviors. Physical inactivity was not associated with daily tobacco use or problem drinking in our study but Rosal *et al* (2000) did find an association between physical inactivity and problem drinking. Unlike a previous study (Lee *et al*, 2013), we did not find an association between poor mental health and daily tobacco use or problem drinking. The identification of several sociodemographic and health behavior factors may help in better targeting intervention programs for chronic disease populations (Manwell *et al*, 2002).

Problem drinking can cause prescription medication interactions, poor medication adherence and poor self-management skills (Ryan *et al*, 2013). Health care providers should screen chronic disease patients for alcohol and tobacco use and provide interventions.

This study had several limitations. This was a cross sectional study, so causal conclusions cannot be drawn. The investigation was conducted among chronic patients from conveniently selected health facilities in the study countries, and inclusion of other health facilities could have resulted in different findings. Information in this study was self-reported; hence, subject to bias.

In conclusion, we found high prevalences of daily tobacco use and problem

drinking among chronic disease patients in Cambodia, Myanmar and Vietnam. Further research is needed to determine appropriate interventions in this study population.

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