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Anticipated stigma in chronic illness patients in Cambodia, Myanmar and Vietnam

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ABSTRACT

The aim of this study was to explore the prevalence and relationship of anticipated chronic illness stigma among patients diagnosed with a variety of chronic diseases in three Southeast Asian countries (Cambodia, Myanmar and Vietnam). A cross-sectional survey was conducted in 4,803 adult chronic disease patients (mean age 49.3 years; SD=16.5) recruited systematically from health facilities. Overall, the results indicate that 20.7% of patients reported that for any of the 12 stigma items, they anticipated they were likely or very likely to experience chronic disease stigma. A multivariate analysis of sociodemographics revealed the following were associated with anticipated chronic disease stigma: older versus younger age, OR (odds ratio) = 0.71; 95% Confidence Interval (CI) [0.58, 0.87]; higher versus lower education, OR = 2.23; 95% CI [1.81, 2.75]; origin from Myanmar or Vietnam, being single, divorced or widowed, rural residence, and health status (having three or more chronic conditions versus having one chronic condition), OR = 1.93; 95% CI [1.58, 2.35]; lower versus higher quality of life, OR = 0.73; 95% CI [0.63, 0.85]); health risk behavior (physical inactivity, poor diet, current smoking, and problem drinking) and low versus medium or high medication adherence (OR = 0.69; 95% CI [0.55,0.86]). This study demonstrated the possible consequences of anticipated stigma on the health and behavior of people living with chronic diseases, and several factors for chronic disease stigma were identified that can help guide interventions to reduce chronic illness stigma in this population.

Key Words: Chronic disease patients, anticipated stigma, Southeast Asian countries

INTRODUCTION

"Stigma is typically a social process, experienced or anticipated, characterized by exclusion, rejection, blame or devaluation that results from experience, perception or reasonable anticipation of an adverse social judgement about a person or group. This judgement is based on an enduring feature of identity conferred by a health problem or health-related condition, and the judgement is in some essential way medically unwarranted."[1,2] Chronic illnesses, such as cancer, epilepsy and mental disorders, may carry a social stigma.[3,4] Persons with chronic diseases may experience

stigma from friends or family members, employers, or healthcare workers.[5-8] Anticipated stigma has been associated with negative health outcomes.[5,9,10] In addition, people with chronic illnesses (e.g., diabetes, inflammatory bowel disease, and asthma) who internalized stigma and experienced stigma from healthcare workers anticipated greater stigma from healthcare workers and in turn, accessed healthcare less.[11]

Various qualitative and quantitative studies identified chronic illness stigma for specific chronic illnesses, including chronic back pain,[12] cancer of the breast,[13] cancer of the colon,[10] chronic migraines,[14] chronic obstructive pulmonary disease (COPD),[15] cirrhosis,[16] chronic pain,[17] epilepsy,[18] mental illness,[19,20] and Parkinson's disease.[21] The prevalence of (anticipated or perceived) chronic illness stigma ranged from 13.5% (22.1% in developing and 11.7% in developed countries) in 16 World Health Survey countries,[22] 14.8% in 12-month mental disorder patients,[22] 38% in chronic pain patients[17] and 89% among cirrhosis patients.[16]

Factors associated with (perceived or anticipated) chronic illness stigma included the following: 1) sociodemographic factors, such as younger age,[16,23] low education, being married/living with someone and being unemployed;[22] 2) poor health status and well-being, such as depression and anxiety,[5,16] low self-esteem,[17,23] poor quality of life,[11,16,22,23] and more than one chronic condition;[22] 3) health risk behaviors, such as alcohol use,[16] and 4) poor adherence to chronic disease medications.[24,25]

Chronic diseases, such as cardiovascular disease (CVD), diabetes, hypertension, chronic obstructive pulmonary disease (COPD), cancer, kidney disease, or musculoskeletal disorders, are commonly reported among the aging population in Southeast Asian countries, including Cambodia, Myanmar and Vietnam.[26-33] There is a need to investigate "the degree to which people living with chronic illnesses anticipate stigma, better understand the processes by which anticipated stigma contributes to the health and behavior of people living with chronic illnesses, and compare the extent to which people living with different types of chronic illnesses anticipate stigma."[5] Therefore, the aim of this study was to estimate the prevalence and relationship of anticipated chronic illness stigma among patients diagnosed with a variety of chronic diseases in three Southeast Asian countries (Cambodia, Myanmar and Vietnam).

MATERIALS AND METHODS

Sample and procedure

In each Southeast Asian country (Cambodia, Myanmar and Vietnam), a cross-sectional survey was conducted in rural and urban health facilities with out-patients with chronic diseases. The sample size included at least 800 people from rural health facilities and 800 individuals from urban health facilities in each country. Urban or rural designations were based on the area in which the health facilities were located, i.e., metropolitan areas (urban) and non-metropolitan areas (rural). The health facilities in urban areas and those in rural areas were conveniently selected. In Cambodia, Chbar Ampov and Boeng Kok Health Center, located in Phnom Penh and Kampong Cham provincial town, were selected as urban primary healthcare settings (N=575). Skun health center in Kampong Cham and Pouk Health Center in Siem Reap were selected as rural health facilities (N=1,017). In Myanmar, the study was conducted in Kyauktan Township utilizing one maternal and child health (MCH) center for the urban population (N=800) and 4 health centers for the rural population (N=800). In Vietnam, the data were collected from 20 health facilities (13 urban areas, N=760 and 7 rural areas, N=840) in 11 districts of 3 Northern provinces.

Every eligible patient (18 years and older who had been treated for a chronic disease in the past 12 months) was selected from the health facility, using a convenient sampling procedure

(consecutively selecting every out-patient visiting the health facility).

Trained research assistants conducted interviews with the patients using structured questionnaires after informed consent was obtained. We recruited all of the patients who accessed the services of the selected health facilities for their treatment with some inclusion criteria, including adult patients with a minimum age of 18 years who have been treated in the past 12 months for any of the 21 chronic conditions, such as asthma, chronic obstructive pulmonary disease (COPD), diabetes mellitus, hypertension, dyslipidemia, coronary artery disease, cardiac failure, cardiac arrhythmias, stroke, arthritis, cancer, gout and other musculoskeletal conditions, such as chronic backache, Parkinson's disease, liver disease, kidney disease, thyroid disease, stomach and intestinal diseases, epilepsy and mental disorders.[34] The questionnaire had been translated and back-translated by certified translators into the study languages, Burmese, Khmer, and Vietnamese. In each country, the questionnaire was pre-tested for validity on a sample of 20 patients, who did not form part of the final sample. The research study was conducted in compliance with the Helsinki Declaration. In Cambodia, the National Ethics Committee for Health Research of the Ministry of Health (Reference no: 0225NECHR); in Myanmar, the Research and Ethical Committee of University of Medicine 1, Yangon; in Vietnam, the Committee of Research Ethics of Hanoi School of Public Health; and in Thailand, the Committee of Research Ethics (Social Sciences) of Mahidol University (COA. No.: 2014/193.0807) approved the study protocol.

Measures

Anticipated stigma was assessed with the Chronic Illness Anticipated Stigma Scale (CIASS).[5] The 12-item CIASS consists of the following three sub-scales: 1) stigma from friends and family members, 2) work colleagues and 3) healthcare workers (see detailed items in Table 2). Response options range from 1=very unlikely to 5=very likely.[5] The chronic disease stigma index (total anticipated stigma score) is calculated by adding up all items. The Cronbach alpha for the CIASS in this study sample was 0.91.

Quality of life was assessed with the World Health Organization Quality of Life (WHOQol)-8 consisting of eight items that were derived from the WHOQOL-Bref.[35] The summative model (derived from the summing of the scores of the 8 items) was used in this study to generate an index. The Cronbach alpha for the WHOQol-8 was 0.89 in this sample.

Physical activity was assessed with the General Physical Activity Questionnaire (GPAQ).[36] This measure collects information on physical activity in three domains (activity at work, travel to and from places, and recreational activities). The questionnaire also assesses vigorous and moderate activities performed at work and for recreational activities.[37] Total physical activity scores from the GPAQ were used to divide participants into the following 3 groups: inactive, moderately active, and highly active.[36]

Diet. The diet instrument asks about the following 7 food habits: fast food, fruits/vegetables, sweet drinks, protein, chips/crackers, desserts, and fats eaten during the last 7 days.[38] Using these 7 items, a dietary total score was calculated by summing the scores from the 7 variables, resulting in a scale ranging from 0 (best dietary habits) to 14 (poorest dietary habits).[38]

Tobacco use was assessed with the following four questions: 1) "Do you currently smoke any tobacco products, such as cigarettes, cigars or pipes?" [if yes, then 2) "Do you currently smoke tobacco products daily?"]; 3) "Do you currently use any smokeless tobacco, such as *snuff*, *chewing tobacco*, *betel?*" and [if yes, then 4) "Do you currently use smokeless tobacco products daily?"]. Response options were "yes" or "no".[39]

Problem drinking was assessed with the Alcohol Use Disorder Identification Test (AUDIT)-C, using a cut-off score of four for problem drinking.[40] The Cronbach alpha for the AUDIT-C was 0.81 in this sample.

The *Hospital Anxiety and Depression Scale* (HADS)[41] was used to assess anxiety (7 items) and depression (7 items). Scores of 11 or higher were used as cut-offs for anxiety and depression as recommended by Zigmond and Snaith.[41] HADS subscales were internally reliable (Cronbach alpha for anxiety: 0.73; Cronbach alpha for depression: 0.71).

The *Morisky Medication Adherence Scale (MMAS)* was used to assess medication adherence for specific chronic illnesses.[42] The MMAS consists of 8 items, e.g., "Do you feel hassled by sticking to your treatment plan?" Response options are yes/no for items 1 to 7 and a 5-point Likert response for the last item. Scores obtained from this scale range from 0 to 8, with higher scores indicating higher adherence; scores less than 6 were classified as low adherence, scores of 6 to less than 8 as medium adherence, and scores of 8 as high adherence.[42]

Sociodemographic information included age, sex, country, formal education, marital status, employment status, and residency status.

Data analyses

The data were analyzed using IBM SPSS (version 20.0) (Chicago, IL, USA). The proportion of anticipated stigma was calculated as a percentage, and means and standard deviations were used for anticipated stigma. Differences in proportions were analyzed with Pearson Chi-square tests, and Student's t tests were used for differences between two means. Principal component analysis with varimax rotation was used to identify the factor structure of the CIASS. Multivariate logistic regression analysis was performed to calculate the odds ratios and confidence intervals to determine the associations between the independent variables of sociodemographics, health risk behaviors, chronic conditions, mental health, and the dependent variable = anticipated chronic disease stigma (median of a score of 21 or more=coded as 1 and a score of <21 coded as "0"). All variables (sex, age, country, education, marital status, geolocality, chronic conditions, quality of life, physical inactivity, poor diet index, depressive symptoms, problem drinking, current smoking, current smokeless tobacco use, and medication adherence) statistically significant at the $p < 0.05$ levels in bivariate analyses were included in the multivariable model. Statistical significance was set at the 5% level. Potential multi-collinearity between variables was assessed with variance inflation factors, none of which exceeded the recommended critical value of 4.0.

RESULTS

Sample characteristics and prevalence rate of anticipated stigma

The total sample included 4,803 adults (1,602 in Cambodia, 1,600 in Myanmar and 1,601 in Vietnam), the mean age was 49.3 years (SD=16.5), the range was 18–101 years, and 69.6% were female. In the three study countries, all study participants approached agreed to participate (response rate=100%). More than half of the participants (58.8%) were 46 years or older, and 54.5% had been diagnosed with at least one chronic disease in the past 12 months. The educational level of most participants (77.8%) was lower than secondary school education, and 55.4% lived in rural areas. Overall, 20.7% reported on any of the 12 stigma items to anticipate likely or very likely to experience chronic disease stigma (Table 1).

The principal component analysis with varimax rotation yielded three components having eigenvalues greater than one, accounting for 79.7% of the variance. The first factor (health care workers) explained 51.3%, the second factor (friends and family) 17.9% and the third factor (work colleagues) 10.4% of the variance. Anticipated stigma ratings seem higher regarding friends and family than for work colleagues and health care workers (Table 2).

Table 1 Sample characteristics and anticipated chronic disease stigma

Variable	Sample N (%)	Stigma (Likely or very likely) N (%)
All	4,803	993 (20.7)
Age (in years)		
18–45	1,917 (41.2)	421 (22.0)
46–60	1,517 (32.6)	326 (21.5)
61–101	1,216 (26.2)	210 (17.3)**
	153 missing[1]	
Sex		
Female	3,314 (69.6)	599 (18.1)
Male	1,447 (30.4)	381 (26.3)***
	42 missing[3]	
Country		
Cambodia	1,602 (33.4)	193 (12.0)
Myanmar	1,600 (33.3)	232 (14.5)
Vietnam	1,601 (33.3)	568 (35.5)***
Education		
Grade 0–5	1,650 (34.4)	251 (15.2)
Grade 6–11	2,080 (43.4)	426 (20.5)
Grade 12 or more	1,066 (22.2)	316 (29.7)***
	6 missing[3]	
Marital status		
Single/divorced/widowed	1,249 (26.4)	286 (22.9)
Married/cohabiting	3,478 (73.6)	684 (19.7)*
	76 missing[3]	
Employment status		
Not employed	2,556 (55.4)	474 (17.9)
Part-time employed	723 (15.1)	117 (16.2)
Full-time employed	1,415 (29.5)	400 (28.3)***
	19 missing[3]	
Geolocality		
Rural	2,657 (55.4)	539 (20.3)
Urban	2,135 (44.6)	452 (21.2)
	11 missing[3]	
Chronic conditions		
One	2,605 (54.5)	545 (20.9)
Two	1,358 (28.4)	254 (18.7)
Three or more	820 (17.1)	190 (23.2)*
	20 missing[3]	
Quality of Life		
Low	2,174 (45.8)	479 (22.0)
Medium	491 (10.3)	102 (20.8)
High	2,085 (43.9)	399 (19.1)
	53 missing[3]	

Physical inactivity	1,485 (30.9)	306 (20.6)
Anxiety symptoms	803 (17.0)	248 (30.9)***
Depression symptoms	1,843 (39.1)	348 (18.9)***
Problem drinking	445 (9.3)	132 (29.7)***
Current smoking	752 (15.8)	173 (23.0)
Current smokeless tobacco use	683 (14.5)	99 (14.5)***
Medication adherence		
Low	2,173 (50.1)	605 (27.8)
Medium	1,579 (36.4)	229 (14.5)
High	585 (13.5)	28 (4.8)***
	466 missing[2]	
Good diet (score 0–5)	2850 (59.4)	1359 (47.7)
Poor diet (score 6–16)	1946 (40.6)	1096 (56.3)***
	7 missing[3]	

***p<0.001; **p<0.01; *p<0.05; [1]High proportion of missing values may be due to some of the participants not knowing their actual age, [2]High proportion of missing values are largely due to not currently taking medications for their chronic disease, [3]other missing values may be due to the negligence of interviewers of not asking the question or not writing down the response.

Table 2 Item description and factor loadings of anticipated chronic illness stigma

What is the likelihood that you would encounter these stigmatizing experiences in the future [because of your chronic disease]?.	Factors	Factor loadings	Mean (SD) [range 1–5]	Likely or very likely N (%)
Friends and family				
A friend or family member will think that your illness is your fault	2	0.86	1.90 (1.0)	461 (9.6)
A friend or family member will not think as highly of you	2	0.83	1.87 (0.9)	394 (8.2)
A friend or family member will blame you for not getting better	2	0.85	1.81 (0.9)	399 (8.3)
A friend or family member will be angry with you	2	0.78	1.71 (0.9)	273 (5.7)
Work colleagues				
Someone at work will think that you cannot fulfill your work responsibilities	3	0.79	1.98 (0.6)	184 (3.8)
Your employer will assign a challenging project to someone else	3	0.88	2.00 (0.6)	187 (3.9)
Someone at work will discriminate against you	3	0.80	1.87 (0.6)	107 (2.2)
Your employer will not promote you	3	0.88	1.98 (0.6)	160 (3.3)
Health care worker				
A healthcare worker will blame you for not getting better	1	0.82	1.67 (0.8)	238 (5.0)
A healthcare worker will be frustrated with you	1	0.87	1.64 (0.8)	191 (4.0)
A healthcare worker will give you poor care	1	0.87	1.63 (0.8)	218 (4.5)
A healthcare worker will think that you are a bad patient	1	0.87	1.59 (0.8)	160 (3.3)

Anticipated chronic disease stigma by specific chronic disease

Participants had been diagnosed with at least one chronic condition in the past 12 months of which the six major ones were stomach and intestinal disease (40.3%), hypertension (29.2%), arthritis (18.9%), cardiovascular disease (16.8%), gout and other musculoskeletal conditions, such as chronic backaches (15.6%) and diabetes (10.6%) (Table 3).

Table 3 Stigma index according to chronic disease

Chronic condition	Sample N (%)	Chronic disease stigma index[1] Mean (SD)
Stomach and intestinal disease	1,935 (40.3)	21.4 (6.4)
Hypertension	1,402 (29.2)	21.4 (6.6)
Arthritis	909 (18.9)	22.2 (6.4)
CVD (Cardiac failure, Coronary artery disease, Cardiac arrhythmias, Stroke)	804 (16.8)	22.2 (6.8)
Gout and other musculoskeletal conditions, such as chronic backache	748 (15.6)	22.4 (6.8)
Diabetes mellitus	509 (10.6)	20.8 (6.7)
Migraine or frequent headaches	350 (7.3)	22.6 (6.5)
Chronic obstructive pulmonary disease (COPD)	308 (6.4)	21.4 (6.1)
Kidney disease	240 (5.0)	23.1 (6.8)
Liver disease	234 (4.9)	22.8 (7.7)
Asthma	219 (4.6)	21.9 (6.6)
Dyslipidemia	210 (4.4)	22.2 (6.8)
Mental disorder	119 (2.5)	23.5 (6.6)
Thyroid disease	75 (1.6)	21.3 (6.6)
Cancer	72 (1.5)	24.0 (6.6)
Parkinson's disease	69 (1.4)	21.7 (5.4)
Epilepsy	16 (0.3)	24.3 (5.4)

[1]Total anticipated stigma score

Associations with anticipated chronic disease stigma

In multivariate analysis, sociodemographics (younger age, higher education, coming from Myanmar or Vietnam, being single, divorced or widowed, and rural residence), health status (having three or more chronic conditions, lower quality of life), health risk behavior (physical inactivity, poor diet, current smoking, problem drinking), and low medication adherence were found to be associated with anticipated chronic disease stigma (Table 4).

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Table 4 Odds ratio and 95% confidence interval of chronic disease stigma

Variable	Unadjusted Odds ratio and 95% confidence interval of chronic disease stigma	Adjusted Odds ratio and 95% confidence interval of chronic disease stigma[a]
Sex		
Female	1 (Reference)	1 (Reference)
Male	1.25 (1.10–1.41)***	0.94 (0.80–1.11)
Age (in years)		
18–45	1 (Reference)	1 (Reference)
46–60	0.93 (0.81–1.07)	0.96 (0.80–1.14)
61–101	0.79 (0.69–0.91)***	0.71 (0.58–0.87)***
Country		
Cambodia	1 (Reference)	1 (Reference)
Myanmar	1.79 (1.55–2.06)***	5.67 (4.43–7.23)***
Vietnam	4.12 (3.56–4.78)***	14.04 (10.43–18.90)***
Education		
Grade 0–5	1 (Reference)	1 (Reference)
Grade 6–11	1.84 (1.58–2.04)***	2.02 (1.73–2.37)***
Grade 12 or more	2.07 (1.77–2.42)***	2.23 (1.81–2.75)***
Marital status		
Single/divorced/widowed	1 (Reference)	1 (Reference)
Married/cohabiting	0.87 (0.77–0.99)*	0.85 (0.72–0.99)*
Employment status		
Not employed	1 (Reference)	—
Part-time employed	1.09 (0.93–1.29)	
Full-time employed	0.94 (0.83–1.07)	
Geolocality		
Rural	1 (Reference)	1 (Reference)
Urban	0.43 (0.39–0.49)***	0.42 (0.36–0.49)***
Chronic conditions		
One	1 (Reference)	1 (Reference)
Two	0.92 (0.81–1.05)	1.11 (0.95–1.30)
Three or more	1.48 (1.26–1.73)***	1.93 (1.58–2.35)***
Quality of Life		
Low	1 (Reference)	1 (Reference)
Medium	0.86 (0.71–1.05)	0.93 (0.74–1.17)
High	0.60 (0.53–0.67)***	0.73 (0.63–0.85)***
Physical inactivity		
No	1 (Reference)	1 (Reference)
Yes	1.48 (1.31–1.68)***	1.28 (1.09–1.50)**
Poor diet index (scale)	1.06 (1.03–1.09)***	1.23 (1.18–1.28)***
Anxiety symptoms		
No	1 (Reference)	—
Yes	1.06 (0.91–1.23)	
Depression symptoms		
No	1 (Reference)	1 (Reference)
Yes	0.77 (0.68–0.86)***	0.91 (0.78–1.07)
Problem drinking		
No	1 (Reference)	1 (Reference)
Yes	1.75 (1.43–2.14)***	1.43 (1.10–1.86)**

Current smoking		
No	1 (Reference)	1 (Reference)
Yes	1.42 (1.22–1.67)***	1.33 (1.08–1.65)**
Current smokeless tobacco use		
No	1 (Reference)	1 (Reference)
Yes	0.75 (0.64–0.89)***	0.95 (0.76–1.19)
Adherence		
Low	1 (Reference)	1 (Reference)
Medium	0.53 (0.46–0.60)***	0.61 (0.53–0.71)***
High	0.68 (0.57–0.82)***	0.69 (0.55–0.86)***

***p<0.001; **p<0.01; *p<0.05; OR= Odds Ratio; CI=Confidence Interval
[a]Hosmer and Lemeshow chi-square = 23.55, p = 0.003; Nagelkerke R^2 = 0.26.

DISCUSSION

To our knowledge, this is one of the first studies investigating the relationship between chronic illness and stigma in Southeast Asia. The study found that among chronic disease patients with a variety of chronic illnesses across three Southeast Asian countries, 20.7% reported anticipating chronic disease stigma, which is higher than the results of the World Health Survey (WHS) study, in participating countries (15.5% among persons with significant activity limitation and a chronic physical condition).[22] Perceived stigma was higher in the WHS general population-based study among persons with a mental disorder (21.9%) than among individuals without a mental disorder (10.6%).[22] In our study predominantly patients with a chronic physical condition (97.5%) and only 2.5% with a mental disorder had been included. In addition, 17.0% of the sample reported anxiety symptoms and 39.1% depression symptoms. Both having a mental disorder and anxiety and depression symptoms were in this study not associated with anticipated chronic disease stigma. This finding is contrary to previous studies,[19,20,22] which showed that persons with mental disorders experience significantly higher perceived stigma than persons with chronic physical illness. It is possible that in our clinic-based sample the prevalence of patients with a mental disorder and their perceived chronic disease stigma was low, for persons with a mental disorder assessed in the general population perceive higher rates of perceived disease stigma, as found in the WHS survey, and may because of the high perceived stigma not seek health services and were therefore not found in our clinical sample.[11,22] All the more, it is important to reduce perceived disease stigma, in particular in the known high perceived stigma diseases such as mental disorders to improve access to health care services.[22]

This study was in agreement with previous studies[16,23] and found that anticipated chronic disease stigma decreased with age. It is possible that having a chronic illness at a younger age and being single bear more stigma compared to older and married people because more chronic conditions may be expected with increasing age. Further, having a higher education was associated with higher anticipated chronic disease stigma, whereas in another study[19], lower education was associated with disease stigma. In particular, chronic disease patients from Vietnam in this study perceived high anticipated chronic disease stigma. This finding needs further investigation. Stigma reducing efforts might specifically target the younger and higher educated individuals.

In terms of health status and well-being, this study was in agreement with previous studies[11,16,19,22,23] that having three or more chronic conditions and a lower quality of life was associated with higher anticipated chronic disease stigma. Earnshaw et al.[3] posit that the association between greater stigma experience and lower quality of life may be explained by higher stress,

lower social support and lower patient satisfaction associated with anticipated stigma. In principal component analysis, the first factor (health care workers) explained 51.3% of the variance, indicating the significant role of health care workers in the anticipated stigma of people living with chronic illnesses in this sample. Contrary to some other studies[5,16], poor mental health was not found to be associated with higher anticipated chronic disease stigma.

Regarding health risk behaviors, this study found that physical inactivity, poor diet, current smoking and problem drinking were associated with anticipated chronic disease stigma. A similar result was found by Vaughn-Sandler *et al.*[16] in relation to alcohol use and stigma. The possible relationship between various health risk behaviors and anticipated chronic disease stigma needs further investigation. In terms of smoking, there may have been an increase in the social unacceptability of smoking,[43] leading to the perceived stigma associated with smoking.[44] Further, problem drinking has been reported to be associated with perceived and community stigma, which undermine treatment seeking.[45,46] Physical inactivity and unhealthy food intake are mainly seen as underlying causes of obesity.[47]

In individuals with obesity perceptions of weight discrimination have been found to be common.[48] It can be that, as some diseases believed to be controllable by health risk behaviors are the most stigmatized (such as HIV or lung cancer),[49] the associated modifiable health risk behaviors such as smoking, problem drinking, poor diet and physical inactivity for a number of chronic lifestyle diseases become themselves also stigmatized. Health care workers should be aware of this, as chronic disease patients may hide their lifestyle habits such as smoking and drinking alcohol for fear of prejudice.[44] Further, this study found, in agreement with some previous studies,[24,25] an association between poor adherence to chronic disease medications and stigma. This is an important finding which should be included in chronic disease medication adherence management.

This study had several limitations. The study was cross-sectional; therefore, causal conclusions cannot be drawn. The investigation was carried out with chronic patients from conveniently selected health facilities in the study countries, and the inclusion of other health facilities could have produced different results. Another limitation of the study was that all the other information collected in the study was based on self-reporting. Although the scale used (CIASS) to measure anticipated stigma was a generic measure for the evaluation of a variety of chronic illnesses, key experiences unique to people living with specific chronic illnesses could have been overlooked.[5] In this case, when studying specific chronic illnesses, possible supplementary questions to the CIASS may be asked.[5] Further, some measures, such as stress, social support, functional limitations and patient satisfaction, have been found to be relevant in relation to anticipated stigma[3,23] and may be included in future studies.

This study adds to the literature in showing a commonly reported prevalence of anticipated chronic disease stigma in Southeast Asian countries and despite between country variation in anticipated chronic disease stigma, having several chronic conditions, poorer quality of life, several health risk behaviors (physical inactivity, problem drinking, smoking and a poor diet) and low medication adherence demonstrated a robust association with anticipated chronic disease stigma. Further, the study found that between three distinct sources of anticipated disease stigma, compared to friends and family and work colleagues, health care workers were the largest source of anticipated illness stigma. This finding is important for health care workers in the intervention of the negative relationship between anticipated illness stigma and well-being and health behavior. Finally, the Chronic Illness Anticipated Stigma Scale (CIASS) had been evaluated with persons living with chronic illnesses in the United States[5] and this study confirmed the three-factor structure of the CIASS across chronic disease populations in three Southeast Asian countries.

CONCLUSION

In conclusion, the assessment of chronic illness stigma in this study demonstrated the possible consequences of anticipated stigma on the health and behavior of people living with chronic diseases. Several factors for the CIASS were identified that can help guide interventions to reduce chronic illness stigma in this population.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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