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Research Article

Status and determinants of health literacy: a study among adult population in selected areas of Myanmar

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ABSTRACT

Background: Health literacy means cognitive and social skills of an individual that determine his or her ability to access, understand and use health information in order to promote and maintain good health. Health literacy is important not only for health but also for socioeconomic development because limited health literacy increases health care cost. Objective: To determine the status and determinants of health literacy, and association between health literacy and health-risk behaviours among Myanmar population.
Methods: A cross-sectional study was conducted among 1367 adults. Multi-stage random sampling was applied. Data entry and analysis was done using Stata 11.0 statistical package.
Results: The prevalence of satisfactory, intermediate and poor health literacy were about 31.5% (95% CI: 29.1%, 34.1%), 40.3% (95% CI: 37.7%, 43.0%), and 28.2% (95% CI: 25.8%, 30.6%), respectively. Age, sex, marital status, education, sufficiency of expenditure, watching medical-related TV series, accessibility to education & health education courses, ability to pay for medication and affordability to see medical doctors were detected as significant determinants of health literacy. Health literacy was also significantly related to health-risk behaviors such as smoking, betel chewing, and not taking regular exercise. There was marginal association between health literacy and alcohol drinking ($p = 0.064$).
Conclusions: The present study encourages efforts to improve health literacy in the Myanmar adults by enhancing health education and health promotion activities. It is also important to improve their socio-economic status.

Keywords: Health literacy, Indices of health literacy, Myanmar adults

INTRODUCTION

Health literacy (HL) means cognitive and social skills of an individual that determine his or her ability to access, understand and use health information in order to promote and maintain good health.[1-4] Health literacy is a relatively new and emerging concept, based on the idea that both health and literacy are crucial for daily-life.[5,6] In prediction of a person's health, health literacy is stronger than his/her age, race, education, income and employment status.[7] Health literacy is important not only for health but also for socioeconomic development because limited health literacy increases health care cost.[8,9] Besides, limited functional health literacy can pose problem in educating patients with chronic diseases too.[10] Actually, the meaning of health literacy is more than being able to make medical appointments and read pamphlets.[2,4] People need to understand and use health information in order to choose a healthy lifestyle or to take advantage of preventive measures or to know how to seek medical care, etc.[3] Little is known about health literacy status of Myanmar people. Therefore, the present study was conducted with the following objectives:

1. To determine the status of Health Literacy.

2. To determine the determinants of Health Literacy.
3. To determine the association between Health Literacy and health-risk behaviors.

METHODS

Cross-sectional analytic design was used. Altogether 1367 participants from 35 townships were recruited using multi-stage random sampling. These townships were from one State and 5 Regions. States and Regions were selected randomly at first stage. Townships from selected State and Regions were chosen randomly at second stage. Then, households were selected using systematic random sampling procedure. Finally one adult member of a particular household was selected randomly. Necessary data were collected by means of face-to-face interview after getting informed consent. Questionnaire (i.e. interview schedule) used in the present study was adapted from HLS-Asia Questionnaire and pretested. Four HL indices; namely finding health information (FHI), understanding health information (UHI), judging health information(JHI) and applying health information (AHI) were assessed and categorized into limited and satisfactory levels based on scores obtained. Total health literacy score was also calculated. Moreover, health literacy status was created as a composite variable by combining four HL indices and categorized into three groups; satisfactory, intermediate and poor. Satisfactory meant all four HL indices of a subject were at satisfactory level. Intermediate meant at least one (but not all) HL index was at limited level. If all HL indices were at limited level, a particular subject was regarded as poor HL. Age, sex, marital status, education, sufficiency of expenditure, watching medical-related TV series, accessibility to education & health education courses, ability to pay for medication and affordability to see medical doctors were regarded as potential determinants of HL. Health-risk behaviors examined in the study were smoking, betel chewing, alcohol drinking and not-taking regular exercise.

Statistical analysis

Data entry and analysis was done using Stata 11.0 statistical package. Chi-square test was used in determining the association between HL status and health-risk behaviors. Multivariate linear regression with step-wise procedure was applied in assessing determinants of health literacy.

RESULTS

Altogether 1367 adults from 35 townships were recruited into the study. These townships (tsp.) were from Shan State (4 tsp.; n = 160), Sagaing Region (6 tsp.; n = 232), Magway Region (4 tsp.; n = 160), Bago Region (6 tsp.; n = 233), Ayeyarwaddy Region (4 tsp.; n = 160) and Mandalay Region (11 tsp.; n = 422). General characteristics of the participants are shown in Table 1.

Table 1: General characteristics of the participants.

Variables	Frequency (n=1367)	Percent
Age-group (years)		
18 – 44	876	64.1
45 – 59	337	24.6
60 – 75	154	11.3
Sex		
Male	495	36.2
Female	872	63.8
Education		
Primary School	234	17.1
Middle School	454	33.2
High School	343	25.1
University & Graduate	336	24.6
Marital Status		
Single (Never Married)	409	29.9
Ever Married	958	80.1
Monthly Expenditure		
Sufficient	501	36.7
Insufficient	866	63.3
Watching medical related TV series		
Often	306	22.4
Sometimes	650	47.5
Rarely	191	14.0
Never	220	16.1
Attending education courses		
Often	59	4.3
Sometimes	111	8.1
Rarely	110	8.1
Never	1087	79.5
Attending health education		
Often	112	8.2
Sometimes	363	26.6
Rarely	241	17.6
Never	651	47.6
Ability to pay for medication		
Very Easy	504	36.8
Fairly Easy	645	47.2
Fairly Difficult	202	14.8
Very Difficult*	16	1.2
Affordability to see doctor		
Very Easy	560	40.9
Fairly Easy	593	43.4
Fairly Difficult	191	14.0
Very Difficult	23	1.7

Mean age (SD) was 40.0 (14.2) years.

This study assessed betel chewing (i.e. consumption of smokeless tobacco), smoking, drinking alcohol and not practicing regular exercise as health-risk behaviors. Table 2 shows these health-risk behaviors of the subjects.

Table 2: Health risk behaviors of the participants.

Variables	Frequency(n=1367)	Percent
Betel Chewing (Smokeless Tobacco)		
Ever	498	36.4
Never	869	63.6
Smoking		
Ever	271	19.8
Never	1096	80.2
Alcohol		
Ever	221	16.2
Never	1146	83.8
Exercise		
Almost daily	202	14.8
(Regular)	351	25.7
Sometimes	814	59.5
Not at all (None)		

The prevalence of satisfactory, intermediate and poor health literacy were about 31.5%, 40.3% and 28.2%, respectively. The proportion of subjects who were at satisfactory level in FHI, UHI, JHI and AHI were 58.7%, 44.6%, 53.4% and 48.1%, respectively (Table 3).

Table 3: Four HL indices and overall HL status of the participants.

	Frequency	Percent	95% CI
FHI			
Satisfactory	803	58.7	56.1,61.4
Limited	564	41.3	38.6, 43.9
UHI			
Satisfactory	610	44.6	42.0,47.3
Limited	757	55.4	52.7,58.0
JHI			
Satisfactory	730	53.4	50.7,56.1
Limited	637	46.6	43.9,49.3
AHI			
Satisfactory	658	48.1	45.5,50.8
Limited	709	51.9	49.2,54.5
HL Status			
Satisfactory	431	31.5	29.1,34.1
Intermediate	551	40.3	37.7,43.0
Poor	385	28.2	25.8,30.6

Mean (SD) value of total HL score was 136 (24.4)

Results of uni-variate and multivariate analyses are shown in Table 4. Age, sex, education, watching medical-related TV series, attending education & health education courses, ability to pay for medication and affordability to see medical doctors were detected as significant determinants of health literacy ($p < 0.05$). There was weak or marginal association between health literacy, and sufficiency of expenditure ($p = 0.081$) and marital status ($p = 0.058$) in multivariate analysis.

Health literacy was significantly related to health-risk behaviors such as smoking ($p = 0.013$), betel chewing ($p = 0.024$), and not practicing regular exercise ($p < 0.001$). There was marginal association between health literacy and alcohol consumption ($p = 0.064$). See Table 5.

Table 5: Association between HL status and health-risks behavior.

Health-risk behaviors	Health Literacy Status (n, %)			p-value
	Poor (n = 385)	Intermediate (n = 551)	Satisfactory (n = 431)	
Betel Chewing				0.024
Present	162(42.1)	186 (33.8)	150 (34.8)	
Absent	223(57.9)	365 (66.2)	281 (65.2)	
Smoking				
Present	91(23.6)	113 (20.5)	67 (15.5)	0.013
Absent	294(76.4)	438 (79.5)	364 (84.5)	
Alcohol Drinking				0.064
Present	70(18.2)	96 (17.4)	55 (12.8)	
Absent	315(81.8)	455 (82.6)	376 (87.2)	
Exercise				
Not at all	262(68.0)	321 (58.2)	231 (53.6)	<0.001
Sometimes	93(24.2)	141 (25.6)	117 (27.1)	
Almost daily	30 (7.8)	89 (16.2)	83 (19.3)	

DISCUSSION

Health literacy status of Myanmar people is lower than those of British and Brazilian adults. Almost 89% of British adults[11] and 68% of Brazilian adults[12] were found to be at satisfactory level whereas only 32% of Myanmar people were at that level. Differences in socioeconomic and education status between populations may be responsible. These differences might also be due to use of different tool to measure health literacy and/or different cut-off points in categorizing the health literacy. However, the health literacy status of Myanmar people is not much different from that found in a systematic review where the prevalence of limited health literacy ranged between 34% and 59%.[8] Various studies done in different settings using different tools revealed varying degree of HL. Studies conducted in India[13] and UK[14] reported that the prevalence of low health literacy among Indian patients were more than 50% and 60.4%, respectively. Only 12% of adults in the United States had a proficient health literacy level.[15] A meta-analysis reported that the prevalence of low health literacy ranged between 0% and 68%, and pooled (weighted) prevalence was 26%.[16] Depending upon the English proficiency, prevalence of low health literacy among Chinese, Vietnamese and Koreans residing in the United States varied from 17.8% to 68.3%, 8.1% to 29.7% and 15.1% to 35.6%, respectively.[17] Therefore, caution needs to be taken in comparing HL status between different studies. Age, sex, marital status, education, watching medical-related TV series, sufficiency of income for expenditure,

accessibility to education & health education courses, ability to pay for medication and affordability to see medical doctors were identified as significant determinants of health literacy in the present study. These findings are consistent with other similar studies conducted in different countries. Separate studies done in Brazil[12], UK[13] and China[18] reported that age and education were related to health literacy. Moreover, age, sex, education and income were identified as determinants of health literacy in a British study.[11]

Table 4: Results of uni-variate and multivariate analyses.

Variables	Univariate Analysis		Multivariate Analysis	
	Coefficient	p-value	Coefficient	p-value
Sex				
Male	Reference		Reference	
Female	1.965881	0.152	3.2730010	0.010
Age	0.079723	0.087	0.1248243	0.008
Marital Status				
Never	Reference		Reference	
Ever	0.974455	0.499	2.7011630	0.058
Education				
Primary School	Reference		Reference	
Middle School	6.645883	0.001	4.6436870	0.011
High School	11.070980	0.000	7.7412090	0.000
University	13.334710	0.000	7.3004180	0.000
Ability to pay for medication				
Very Easy	Reference		Reference	
Fairly Easy	-10.941030	0.000	-4.280417	0.014
Fairly Difficult	-19.357020	0.000	-5.449020	0.027
Very Difficult*	-24.047620	0.000	------	0.342*
Affordability to see doctor				
Very Easy	Reference		Reference	
Fairly Easy	-10.723550	0.000	-6.817686	0.000
Fairly Difficult	-21.120090	0.000	-14.68752	0.000
Very Difficult	-27.714670	0.000	-20.67568	0.000
Sufficiency of expenditure				
Sufficient	Reference		Reference	
Insufficient	-9.166450	0.000	-2.458143	0.081
Watching medical related TV series				
Often				
Sometimes	Reference		Reference	
Rarely	-6.053142	0.000	-3.015408	0.053
Never	-11.905980	0.000	-6.718364	0.001
	-17.366430	0.000	-11.98632	0.000
Attending education courses				
Often	Reference		Reference	
Sometimes	-14.049780	0.000	-10.02913	0.005
Rarely	-15.995070	0.000	-9.363523	0.011
Never	-19.676810	0.000	-10.98033	0.005
Attending health education				
Often	Reference		Reference	
Sometimes	-10.976510	0.000	-7.303595	0.003
Rarely	-15.882590	0.000	-11.94027	0.000
Never	-15.892760	0.000	-9.716921	0.000

In this study health literacy was significantly associated with health-risk behaviors such as smoking, alcohol drinking, betel chewing (i.e. smokeless tobacco) and not practicing regular exercise. These findings are supported by similar studies done in Britain[11], Brazil[12] and China.[18]

CONCLUSION

Health literacy in the Myanmar people is not so poor. However, the results encourage efforts to improve health literacy in the Myanmar adults by improving education

status, and enhancing health education and health promotion activities. It is also important to improve socio-economic status of Myanmar people.

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