

Conference Paper

Health Literacy and Health Behavior in the Rural Areas

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Abstract

Health literacy is a very important skill to navigate people doing health behavior and achieving good quality of life. People who live in rural area potentially have lower health literacy since they have limited access to health information and healthcare. The study aims to assess the health literacy and health behavior of family leader (father or mother) of limbangan residents.

The study was a survey with cross-sectional design conducted in November 2015 over 583 respondents, with HLS-EU-Q16 as an instrument. The chi-square test was used to analyze data.

The most respondents having low health literacy, 19.2% of them had inadequate health literacy level, while 44.3% in problematic category and only 36.5% had sufficient health literacy. The health behavior factors related to health literacy were: toothbrushing (p value 0.004, PR 2.017), washing hand before eating (p value 0.002, PR 2.175) and after defecation (p value 0.002, PR 2.175). The people who had low health literacy turn out to be a smoker although it is not correlated significantly.

Health literacy had an important role to health behavior that contributed to health status. The access of health information and healthcare should be improved.

Keywords: Health literacy, health behavior

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1. Introduction

Health literacy is a critical component to assure healthy behavior which is determinant of health and quality of life. In many studies, health literacy significantly affects self-reported health [1, 2]. Health literacy represents the cognitive and social skills determining the motivation and ability of individuals to gain access, understand and use information in ways which promote and maintain good health [3]. More recently definitions have been expanded to include the cognitive and social skills which determine the motivation and ability of individuals to access, understand, appraise and apply health information in order to make judgements and take decisions in everyday life concerning health care, disease prevention and health promotion to maintain or improve quality of life during the life course [2].

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Health literacy is a very important skill to navigate people doing health behavior and achieving good quality of life. Health literate people were more likely to get sufficient health information from multiple sources, less likely to have risky habits of smoking, regular drinking, and lack of exercise, and in turn, more likely to report good self-rated health [4]. On the other hand, health literacy as outcome, strongly influenced by income and years of education, may play a key role in determining health, beyond socio-demographic variables [5].

Health literacy survey in Semarang City in 2013-2014, which is part of the Health Literacy Asia comparative study, used HLS-47Q-Indonesia questionnaires translated from HLS-EU-47Q [6], got inferior results, 65% of respondents were in a low level of health literacy (inadequate and problematic). In this survey, 60.25% of people in the rural areas of Semarang City had low health literacy [7].

People who live in rural areas potentially have lower health literacy [8]. The rural people usually have limited access to health information and healthcare. Rural people were less likely than urban people to obtain certain preventive health services [9].

Limbangan is one of the subdistricts in Kendal located in Mount Ungaran area, AND IT IS A border between Semarang City and Semarang District. The location is in a remote area, so it is relatively difficult to access to the health care. The study aims to assess the health literacy and health behavior of family leader (father or mother) of Limbangan residents.

2. Methods

The was a survey with cross-sectional design. the respondents were fathers or mothers in every family in Limbangan, the families selected by stratified random sampling, and the number of respondents were 583 respondents. Data were collected by the students who attended field learning and community services of Public Health Program, Faculty of Health Sciences Dian Nuswantoro University in Limbangan Sub District, Kendal, during November 2015.

The instrument for health literacy assessment was called HLS-EU-Q16 that translated into Bahasa Indonesia. The questionnaire consisted of demographic variables, illness history, health behavior and health literacy that used 16 questions of Health Literacy Survey from EU (HLS-EU-16) [10]. Health literacy levels measured by Likert scale 1-4. The answers score by choosing the solutions with a higher value indicating that the level of health literacy was better (1=very difficult), (2=moderately difficult), (3=fairly easy), (4=very easy). The code for "very difficult" and "moderately difficult" answers was 0 scores and the "fairly easy" and "very easy" were one score. All score were summarized and then categorized into inadequate HL (0-8), problematic HL (9-12), sufficient HL (13-16). For the bivariate analysis, the health literacy was re-categorized to two groups: low (inadequate and problematic) and adequate [11].

Beside health literacy, the survey also appraised the health behavior such as hand washing, tooth brushing, physical activity, and smoking.

Data were analyzed by chi-square test to examine the relationship between variables with p-value 0.05 for statistical significance.

3. Results

The study included a total of 583 respondents, as described in table 1, about half of them in the group of ≥ 49 years old (52.1%), most of them were male (82.2%), only 28.1% of the respondents experienced in high education (>12 years), married (85.6%), and 27.3% of them were farmers. Most of the respondents were fathers since, in the rural areas, the father has an essential role in making decisions.

TABLE 1: Description of characteristics variables.

Variable	Category	f	%
Age	< 49	279	47.9
	≥ 49	304	52.1
Sex	male	479	82.2
	female	104	51.5
Education	≤ 12 years	419	71.9
	> 12 years	164	28.1
Marital status	Married	499	85.6
	Not Married	6	1.0
	Widow/widower	78	13.4
Occupation	Government employees	37	6.3
	Private employees	135	23.2
	Farmers	159	27.3
	Entrepreneurs	61	10.5
	Laborers	125	21.4
	Driver	6	1.0
	Others	26	4.4
	Not work	34	5.8

The health literacy assessment used HLS-EU-Q16 Indonesian version that contained sixteen items as described in table 2 covering respondent appraisal about finding, understanding, judging and using health information for health issues in everyday life. The answers were scored and then categorized into inadequate HL, problematic HL, sufficient. The finding was most of the respondents (63.5%) experienced low health literacy (inadequate and uncertain).

In the issue of health behaviors, table 2 shows low physical activity experienced by 54.2% respondent. In the part of personal hygiene behavior, only 14.4% of them had adequate tooth brushing habit. Otherwise, 81.5% of them had sufficient handwashing behavior before eating and after having had defecation.

TABLE 2: Description of health literacy items and category.

Health Literacy items	tough (%)	fairly difficult (%)	fairly easy (%)	very easy (%)
1. find information on treatments of illnesses that concern you	5.3	28.6	57.1	8.9
2. find out where to get professional help when you are ill	2.2	23.2	64.2	10.5
3. understand what your doctor says to you	1.2	25.3	64.6	8.9
4. understand your doctor's or pharmacist's instruction on how to take a prescribed medicine	2.2	21.3	59.9	16.6
5. judge when you may need to get a second opinion from another doctor	2.2	32.9	56.1	8.7
6. use information the doctor gives you to make decisions about your illness	4.1	25.2	63.3	7.4
7. follow instructions from your doctor or pharmacist	1.5	25.4	61.9	11.1
8. find information on how to manage mental health problems like stress or depression	3.8	35.3	51.6	9.3
9. understand health warnings about behavior such as smoking, low physical activity and drinking too much	1.4	25.7	59.9	13.0
10. understand why you need health screenings	2.9	38.4	48.4	10.3
11. judge if the information on health risks in the media is reliable	2.1	30.4	60.7	6.9
12. decide how you can protect yourself from illness based on information in the media	1.5	32.2	59.5	6.7
13. find out about activities that are good for your mental well-being	1.9	29.8	59.3	8.9
14. understand advice on health from family members or friends	1.9	19.9	62.1	16.1
15. understand information in the media on how to get healthier	1.2	22.0	66.2	10.6
16. judge which everyday behavior is related to your health	2.2	24.0	63.8	9.9
Health literacy category:	f		(%)	
1. inadequate	112		19.2	
2. problematic	258		44.3	
3. sufficient	213		36.5	

The high salt consumption happened on 45.3% of respondents, while high sugar consumption experienced by 14,2% of them and 40.1% always used monosodium glutamate (MSG) in their food. The biggest problem of risk behavior was smoking, while 63.3% of respondents had smokers in their family, that meant most of the family members were taking the risk to become passive smokers. Most of the respondents thought that health was as important as other issues or more important (94.2%), but unfortunately, 5.8% of them said that health was not necessary or not very important.

TABLE 3: Description of health behaviors and attitude toward health.

Variable	Category	f	%
Physical activity	inadequate (never or rarely)	316	54.2
	adequate (30 minutes, 2-7 time/week)	267	45.8
Tooth brushing in day	≤ One time/day	497	85.2
	≥ Two times/day	84	14.4
Hand washing before eat	inadequate (never, rarely)	108	18.5
	Adequate (frequently, always)	475	81.5
Hand washing after defecation	inadequate (never, rarely)	108	18.5
	Adequate (frequently, always)	475	81.5
Salt consumption	> 1 teaspoon	264	45.3
	≤ One teaspoon	314	53.9
Sugar consumption	> 4 spoon	83	14.2
	≤ Four spoon	498	85.4
MSG use in food	always	234	40.1
	never or sometimes	347	59.5
Family member smoking behavior	yes	369	63.3
	no	213	36.5
Attitude to health	not important or very not important	34	5.8
	as necessary, important or very important	548	94.2

The age, sex and education characteristics did not show the correlation to health literacy significantly, but there was a tendency that the older age, the lower health literacy they got and the female had lower health literacy than male did. But surprisingly, higher educated people (>12 years) had lower health literacy level (22.2%).

Health literacy was not associated with physical activity (p value 0.304). However respondents who had sufficient health literacy were more likely to have adequate physical activity, 30 minutes per day and 2-3 days a week or more (39%) than those who had inadequate physical activity (34.2%).

Health literacy affected personal hygiene behavior. Health literacy related to tooth brushing behavior (p-value 0.004). People who had sufficient health literacy were more intent to have good tooth-brushing behavior, two times per day or more (51.2%) than those who had less than <2 times per day brushing behavior (34.2%). People who had sufficient health literacy were more likely to have good personal hygiene behavior such as washing hands before eating and after defecation (39.6%) than those who had terrible or inadequate hand washing (23.1%). Nevertheless, health literacy did not show the relationship to high salt, sugar and MSG consumption. Moreover, attitude to health not also correlated to health literacy. People who had sufficient health literacy tended to have family members who did not smoke (41.3%) although it was not associated significantly (p value 0.374).

TABLE 4: Correlation between variables and health literacy.

Variable	Category	Inadequate & Problematic		Sufficient		X ² p-value	PR	CI 95%
		f	%	f	%			
Age	≤ 55 years	248	61.1	158	38.9	0.086	0.708	0.486-1.030
	>55 years	122	68.9	55	31.1			
Sex	male	300	62.6	179	37.4	0.432	0.814	0.519-1.276
	female	70	67.3	34	32.7			
Education	≤12 years	260	62.1	159	37.9	0.3	0.803	0.549-1.175
	>12 years	110	67.1	54	32.9			
Physical activity	inadequate	207	65.5	109	34.5	0.304	1.212	0.864-1.699
	Adequate	163	61.0	104	39.0			
Tooth-brushing in a day	< 2 times	327	65.8	170	34.2	0.004	2.017	1.266-3.216
	≥ Two times	41	48.8	43	51.2			
Hand washing before eating	Inadequate	83	76.9	25	23.1	0.002	2.175	1.341-3.527
	adequate	287	60.4	188	39.6			
Hand washing after defecation	Inadequate	83	76.9	25	23.1	0.002	2.175	1.341-3.527
	adequate	287	60.4	188	39.6			
Salt consumption	>1 teaspoon	162	61.4	102	38.6	0.418	0.856	0.610-1.202
	≤1 teaspoon	204	65.0	110	35.0			
Sugar consumption	>4 spoon	48	57.8	35	42.1	0.316	0.763	0.476-1.224
	≤4 spoon	320	64.3	178	35.7			
MSG use	always	142	60.7	92	39.3	0.283	0.816	0.579-1.150
	Sometimes or never	227	65.4	120	34.6			
Smoking	Yes	244	66.1	125	33.9	0.088	1.374	0.971-1.946
	No	125	58.7	88	41.3			
Attitude to health	Bad	18	52.9	16	47.1	0.253	0.626	0.312-1.256
	Good	352	64.2	196	35.8			
Sickness in 3 months	Yes	81	51.3	77	48.1	0.001	0.495	0.341-0.719
	No	289	68.0	136	32.0			

Experience of having sick family members in 3 months had a relationship with health literacy (p value0.001). People who had no experience in having ill family members

tended to have low health literacy, it was bigger (68.0%) than people who had experience in having sick family members (51.3%).

4. Discussion

The proportion of the respondents who experienced low health literacy (inadequate and problematic) was still high (63.5%), almost the same as Semarang health literacy survey in 2014 that found 64% people to have low health literacy[7]. People who live in the rural areas potentially have lower health literacy[8], but now in the information technology era, both people in rural and urban have the same opportunity to access health information from the internet, especially for young adult group[12]. However, low health literacy has to get more attention and intervened. Health literacy can improve through the provision of information, effective communication and structured education and the improvements that can assess through the measurement of changes to the knowledge and skills that enable well-informed and more autonomous health decision-making[13].

The older people (>55 years old) tend to have lower health literacy, like finding in the other surveys[1, 7], so it needs to fix since the older adults usually face more health problems than the younger ones and they need more health literacy skills to maintain good health.

In rural areas, the male had a strategic position in making a decision, and it can be a potential agent to improve healthy behavior[14]. In this survey, men had a better sufficient health literacy level (37.4%) than females did (32.7%). Usually, the intervention of family related to health only focused on the women. In the rural areas, it has to be directed to males, too, such as father and community leader, because they are more likely the people who make the decisions. Moreover, female health literacy has to be enhanced because they play an essential role in taking care of family member health and health behavior.

Health literacy not associated with physical activity (p value 0.304), however people with sufficient health literacy tend to do more physical activity (39.0%) than those who had low health literacy. Health Literacy correlated to personal hygiene behavior, such as tooth brushing behavior (p value 0.004), and hand washing before eating and after defecation (0.004), and people who had sufficient health literacy tended to have family members who do not smoke (41.3%). These showed that health literacy could contribute to their healthy behavior that affected their quality of life[15, 16].

Experience of having sick family members in 3 months had a relationship with health literacy (p value 0.001). People who have no experience in having ill family members tend to have low health literacy, and this is proven bigger (68%) than people who had experience in having sick family members (51.3%). By having experience in taking care of the ill family members, they more likely have access to health care and try to understand the health problem. However, they should not be allowed to get sick to gain an understanding of health problems, but rather should be with sufficient health promotion efforts.

5. Conclusions

Most respondents had low (inadequate and problematic) health literacy and inadequate health behavior such as physical activities, tooth brushing, and smoking. Health literacy was correlated to personal hygiene behaviors and tend to reduce smoking behavior and increase physical activities. Further multivariate analysis are needed because this study has not conducted an advance analysis of its data.

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Ethical Approval

This study was approved by the Ethics Committee, Faculty of Public Health Diponegoro University, number 33/EC/FKM/2014.

Competing Interest

The authors declare that we have no competing interest to any organizations that might have an interest in the submitted; no other relationships or activities that could appear to have influenced the proposed work.

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