Original article

Title: Analysis of associations between health literacy and healthy lifestyle characteristics among Japanese outpatients with lifestyle-related disorders

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Abstract

Background: The skills of individuals to find and apply adequate information needed to make health decisions have been conceptualized as health literacy (HL). However, limited studies have examined the association between HL and healthy lifestyle characteristics among patients with lifestyle related disorders.

Methods: This cross-sectional study examined associations between HL and healthy lifestyle characteristics among Japanese outpatients with lifestyle related disorders. Participants were 207 men and 254 women who visited Tokorozawa Medical Clinic in Tokorozawa City, Japan, from April to May 2015. Information on five items for functional HL, five items for communicative HL, and four items for critical HL, and healthy lifestyle characteristics was collected by self-administered questionnaires.

Results: Mean age was 68.1 years among men, and 70.3 years among women. In multivariate logistic analysis, a higher HL was significantly associated with having 6-7 healthy lifestyle characteristics among men [Odds ratio (OR)=2.19, 95% Confidence interval (CI)=1.09-4.41]. Moreover, functional, communicative, and critical HLs were significantly associated with having 6-7 healthy lifestyle characteristics among men [(OR=2.34, 95% CI=1.09-5.02), (OR=2.37, 95% CI=1.15-4.88), (OR=2.78, 95% CI=1.36-5.70)]. No association was observed between total HL score and healthy lifestyle characteristics among women.

Conclusion: Our study revealed a positive association between HL and healthy lifestyle characteristics among male outpatients with lifestyle related disorders, suggesting that men, but not women, are likely to engage in health-promoting behaviors based on several aspects of HL. Further studies will be needed to confirm this gender discrepancy.

Introduction

In recent years, non-communicable diseases (NCDs) such as diabetes, cardiovascular disease (CVD), and chronic kidney disease (CKD) have become a serious burden among developed and developing countries, and these countries will face a dramatic increase in the number of adults suffering from NCDs in the near future [1]. An estimated number of 17 million people die of CVDs (particularly heart attacks and strokes) globally every year [2]. A substantial number of these deaths can be attributed to tobacco smoking, which increases the risk of dying from cardiovascular disease and cerebrovascular disease by 2–3 fold. Physical inactivity and an unhealthy diet are additional risk factors that increase the risk of developing cardiovascular diseases [2]. Unhealthy lifestyles also likely contribute to the development of lifestyle related disorders such as diabetes mellitus, hypertension, and dyslipidemia [3]. Given this situation, the importance of lifestyle modification has been emphasized through advanced communication tools [4].

Health information helps people understand and engage in the management of their own health status. With the increase in health information available through media reports and the Internet, many health information resources are easily distributed to the general population [5-7]. However, adequate use of these resources depends on an individual's skill in finding and applying the information [8]. These skills have been conceptualized as health literacy (HL). Based on the World Health Organization (WHO) definition, a model of HL has been proposed that includes three levels, and assumes both individual and population benefits at each level: functional, communicative, and critical literacy [9]. Individuals with adequate HL are considered likely to adopt healthy lifestyles [10-11], and a brief questionnaire was developed to easily assess HL [11-12]. However, only a few studies have estimated the association between HL and healthy lifestyle characteristics among Japanese people [11-13], and studies that examine the association among patients with lifestyle related disorders are

especially limited.

This study aimed to examine associations between HL and healthy lifestyle characteristics among Japanese outpatients who have visited a medical clinic to treat their lifestyle related disorders.

Subjects and methods

Participants

The present cross-sectional study included 464 Japanese outpatients with lifestyle related disorders (hypertension, dyslipidemia, and diabetes mellitus) who visited Tokorozawa Medical Clinic in Tokorozawa City, Saitama Prefecture, Japan, for the treatment of these disorders from April to May 2015. Of these outpatients, three were excluded due to refusal to participate or missing data. Thus, the final study population consisted of 461 outpatients.

Variables

Body height and weight were measured in the standing position. Body mass index (BMI) was calculated as body weight (kg) divided by height squared (m^2).

We interviewed participants regarding their medical histories for comorbidities (cardiovascular/cerebrovascular diseases, chronic kidney disease, and malignant neoplasms). They were then asked to complete self-administrated questionnaires, which included HL and healthy lifestyle characteristics listed in Breslow's seven health practices, such as alcohol consumption, smoking behavior, exercise frequency, obesity (BMI), sleep duration, breakfast, and snacks between meals [14].

To evaluate HL, a validated questionnaire (HLS-14) that included five items for functional HL, five items for communicative HL, and four items for critical HL was used [12]. The reliability and validity of HLS-14 as a generic HL measure for Japanese people have already been established (Cronbach's alpha of functional, communicative, and critical HL

scales were 0.83, 0.85, and 0.76, respectively) [12]. Functional HL asked whether the participants (Q1) could find characters that they could not read, (Q2) felt the print was too small for them to read, (Q3) felt the content was too difficult for them to understand, (Q4) felt it took too long for them to read the content, and (Q5) felt the need for someone to help them read the content. For communicative HL, participants were asked whether they could (Q6) collect information from various sources, (Q7) extract the information they want, (Q8) understand the obtained information, (Q9) communicate their opinions regarding their illness, and (Q10) apply the obtained information to daily life. For critical HL, participants were asked whether they could (Q11) consider whether the information applied to them, (Q12) consider whether the information is credible, (Q13) check whether the information is valid and reliable, and (Q14) collect information to make healthcare decisions. Participants rated each item on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). (Appendix)

We defined healthy lifestyle characteristics as the following responses based on Breslow's seven health practices [14-15]: alcohol consumption (less than one drink per day), smoking behavior (non-smoker), exercise frequency (two or more times per week), BMI (18.5-24.9), sleep duration (7-8 hours), breakfast (every morning), and snacks between meals (no).

Statistical analysis

We stratified eligible participants by gender according to previous reports [16]. Data are presented as mean ± standard deviation (SD) for continuous variables or prevalence (%) for categorical variables. Total HL score was dichotomized based on median score (low HL: <51, high HL: ≥51) according to a previous report [12]. We used the t-test for continuous variables and the chi-square test or Fisher's exact test for comparisons of proportions

between genders. To estimate the potential of HL to promote a healthy lifestyle with 6-7 healthy characteristics, which reflect the healthiest lifestyle [15], logistic regression analysis was performed using the following models in gender categories, with HL as the explanatory variable and high healthy lifestyle characteristics (6-7) as the objective variable: Model 1 was adjusted for total HL score (≥51 vs. <51), age (years), and comorbidities (cardiovascular/cerebrovascular diseases, chronic kidney disease, and malignant neoplasms). Model 2 was adjusted for HL item scores (≥18 vs. <18 for functional and communicable HLs, ≥14 vs. <14 for critical HL), age (years), and comorbidities (cardiovascular/cerebrovascular diseases, chronic kidney disease, and malignant neoplasms).

All statistical analyses were performed using the Statistical Package for Social Sciences version 22 (IBM SPSS Inc., Chicago, IL, USA). P <0.05 was considered statistically significant.

Ethics

This survey was conducted according to the Ethical Guidelines for Epidemiological Studies established by the Japanese government [17], and the Ethics Committee of Juntendo University approved the research protocol (No. 833). Informed consent was obtained from all participants.

Results

Table 1 shows basic characteristics of participants by gender. Mean age was 68.1 years among men, and 70.3 years among women. As for healthy lifestyle characteristics, proportions of alcohol consumption (non-everyday drinker), smoking behavior (non-current smoker), and snack between meals (no) were significantly higher among women than men. On the other hand, sleep duration (7-8) was significantly longer among men than women.

Mean total HL scores were 48.1 (7.5) for men and 48.3 (7.7) for women (data not shown).

Table 2 shows univariate and multivariate regression analyses for associations between HL and 6-7 healthy lifestyle characteristics among men. High HL (total scale score ≥51) was significantly associated with having 6-7 healthy lifestyle characteristics in Model 1 [Odds ratio (OR)=2.19, 95% Confidence interval (CI)=1.09-4.41]. In addition, functional, communicative, and critical HLs were significantly associated with having 6-7 healthy lifestyle characteristics in Model 2 [(OR=2.34, 95% CI=1.09-5.02), (OR=2.37, 95% CI=1.15-4.88), (OR=2.78, 95% CI=1.36-5.70)].

Among women, no association was observed between total HL score and healthy lifestyle characteristics (OR=1.10, 95% CI=0.61-1.96). Moreover, no association was observed between total scores of functional, communicative, and critical HLs and healthy lifestyle characteristics in Model 2 [(OR=0.90, 95% CI=0.50-1.61), (OR=1.35, 95% CI=0.76-2.41), (OR=1.07, 95% CI=0.61-1.87)] (Table 3).

Discussion

In the present study, multivariate analysis of cross-sectional data showed that high HL (≥51) was significantly associated with having 6-7 healthy lifestyle characteristics among men. Moreover, functional, communicative, and critical HLs were significantly associated with healthy lifestyle characteristics. To the best of our knowledge, the present study is the first to examine associations between HL characteristics among Japanese outpatients with lifestyle related disorders.

The present study found an association between HL and healthy lifestyle characteristics among men with lifestyle related disorders. In one study, a Japanese survey assessing the relationship between HL (as assessed by HLS-14), health information access, health behavior, and health status, found that HL was associated with health information

access and health behavior, and emphasized the importance of raising HL levels of target populations to promote health interventions [18]. In a Chinese cross-sectional study, which examined the relationship between HL, health-related behaviors, and health status among 1396 elderly individuals, HL score was found to be significantly associated with smoking, drinking, physical exercise, and attending health examinations ($p < 0.001$) [19]. These previous studies, combined with our present results, suggest an association between HL and lifestyle characteristics, and emphasize the importance of improving HL for maintaining a healthy lifestyle.

Our participants were patients with lifestyle related disorders and tended to be older adults. Thus, they may represent a high risk group for cardiovascular disorders. A longitudinal cohort study of 529 community-dwelling American adults reported that a lower HL increases the risk of exhibiting faster physical decline over time among older adults [marginal (OR 2.62; 95%CI 1.38 to 4.95; p=0.003) and low (OR 2.57; 95%CI 1.22 to 5.44; p=0.013) HLs compared to adequate HL group] [20]. A prospective cohort study of 3260 Medicare managed-care enrollees in the United States reported that inadequate HL, as measured by reading fluency, independently predicts all-cause mortality and cardiovascular death among community-dwelling elderly persons [hazard ratios, 1.52 (95%CI 1.26-1.83)] [21]. Thus, HL should be considered in the primary prevention of cardiovascular death or all-cause mortality when providing care for these high risk patients.

Functional, communicative, and critical HLs were significantly associated with healthy lifestyle characteristics among men. A Japanese cross-sectional study reported that individuals with lower reading comprehension scores in functional HL were more likely to have a history of hypertension ($P = 0.003$) and diabetes mellitus ($P = 0.02$). In addition, individuals with a lower critical HL had significantly higher rates of current smoking ($P = 0.03$), and men with a lower critical HL had a significantly higher waist circumference ($P =$

0.03)[22]. In another cross-sectional study, which examined the relationship between functional HL and knowledge of chronic diseases and treatment among patients with hypertension or diabetes, inadequate functional HL was found to pose a major barrier to educating patients with chronic diseases [23]. Although Japanese people are considered to have high universal literacy (99%), our results may indicate the need to pay attention to functional HL.

HL was not associated with healthy lifestyle characteristics among women in the present study. As HL has many aspects and dimensions, there may be several possible explanations for this gender difference. First, HL scores may not reflect a healthy lifestyle among women. Second, healthy lifestyle characteristics among women may initially depend on other unknown factors. Although some studies have reported on gender differences in HL [24], few previous reports have provided direct explanations for differences in healthy lifestyle characteristics. Further studies will be needed to confirm this gender discrepancy.

This study has several limitations. First, there may have been selection bias, as study participants were recruited from one Japanese medical clinic. Large-scale studies that include several regions in Japan will be needed in the future. Second, HL and lifestyle characteristics were measured based on self-reported questionnaires. Thus, these participants may have reported better HL and healthier lifestyles than were actually true, thereby resulting in an over-estimation of HL and health characteristics. Third, given the cross-sectional design, we could not determine whether there was a causal relationship between HL and healthy lifestyle characteristics. A longitudinal study could help address this issue. Fourth, while the information collected from participants contained a comprehensive set of clinical variables, it cannot be denied that some important factors, e.g., educational status, were not measured. The inclusion of additional factors in the

multivariate analysis may have produced different results.

Conclusion

Our study revealed a positive association between HL and healthy lifestyle characteristics among male outpatients with lifestyle related disorders, suggesting that men are likely to engage in health-promoting behaviors based on several aspects of HL. As no association was observed among women, further studies will be needed to confirm this gender discrepancy.

Acknowledgments

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Table 1. Gender-specific characteristics

	Mean (±SD) or N (%)				
	Men (N=207)		Women (N=254)		*P*[a)]
Age (years)	68.1	(10.9)	70.3	(9.4)	**
Anthropometric measurements					
Height (cm)	164.6	(6.2)	151.3	(6.5)	**
Body weight (kg)	64.4	(9.9)	53.5	(9.3)	**
Body mass index (BMI)	23.7	(3.0)	23.3	(3.5)	NS
Comorbidities					
Cardiovascular disease	32	(15.5)	25	(9.8)	NS
Cerebrovascular disease	8	(3.9)	18	(7.1)	NS
Chronic kidney disease	25	(12.1)	18	(7.1)	NS
Malignant neoplasms	33	(15.9)	17	(6.7)	**
Current medical histories					
Antihypertensive drug use (yes)	152	(74.1)	182	(71.7)	NS
Antidyslipidemic drug use (yes)	137	(66.8)	187	(73.6)	NS
Antidiabetic drug use (yes)	47	(22.9)	34	(13.4)	**
Health literacy					
Total health literacy score	48.1	(7.5)	48.3	(7.7)	NS
Proportion of higher functional health literacy (≥51)	78	(37.7)	105	(41.3)	NS
Functional health literacy	18.3	(4.1)	17.8	(4.4)	NS
Proportion of higher functional health literacy (≥18)	122	(58.9)	139	(54.7)	NS
Communicative health literacy	17.0	(3.1)	17.3	(3.2)	NS
Proportion of higher communicative health literacy (≥18)	106	(51.2)	140	(55.1)	NS
Critical health literacy	12.9	(3.0)	13.2	(3.1)	NS
Proportion of higher critical health literacy (≥14)	100	(48.3)	140	(55.1)	**
Healthy lifestyle characteristics					
Alcohol consumption (non-everyday drinker)	144	(69.6)	237	(93.3)	**
Smoking behavior (non-current smoker)	164	(79.2)	232	(91.3)	**
Exercise frequency	110	(53.1)	119	(46.9)	NS

(2 or more times per week)					
Body mass index (18.5-24.9)	137	(66.2)	181	(71.3)	NS
Sleep hours (7-8)	118	(57.0)	111	(43.7)	**
Breakfast (every morning)	191	(92.3)	240	(94.5)	NS
Snack between meals (no)	55	(26.6)	107	(42.1)	**
Total number of healthy lifestyle items	4.4	(1.3)	4.8	(1.1)	**
Proportion of participants with 6 or 7 total number of healthy lifestyle items	45	(21.7)	70	(27.6)	NS

a) **P<0.01, *P<0.05, NS: non-significant.

Table 2. Logistic regression analysis of health literacy with 6-7 healthy lifestyle characteristics among men (N=207)

	Univariate analysis			Multivariate analysis					
				Model 1[c)]			Model 2[d)]		
	OR[a]	95% CI[b]	*P*[e]	OR[a]	95% CI[b]	*P*[e]	OR[a]	95% CI[b]	P[e]
Health literacy									
Functional health literacy (≥18 vs. <18)	2.21	1.06-4.57	*	-	-		2.34	1.09-5.02	*
Communicative health literacy (≥18 vs. <18)	2.00	1.01-4.00	*	-	-		2.37	1.15-4.88	*
Critical health literacy (≥14 vs. <14)	2.69	1.34-5.37	**	-	-		2.78	1.36-5.70	**
Total score (≥51 vs. <51)	2.03	1.04-3.97	*	2.19	1.09-4.41	*	-	-	

[a]Odds ratio, [b]95% confidence interval, [c] Model 1 was adjusted for total HL score (≥51 vs. <51), age (years) and comorbidities (cardiovascular, cerebrovascular diseases, chronic kidney disease, and malignant neoplasms); [d]Model 2 was adjusted for three health literacy items (≥18vs. <18 or ≥14 vs. <14), age (years) and complications (cardiovascular disease, cerebrovascular diseases, chronic kidney disease, and malignant neoplasms); [e] ***P*<0.01, **P*<0.05, NS: non-significant.

Table 3. Logistic regression analysis of health literacy with 6-7 healthy lifestyle characteristics among women (N=254)

	Univariate analysis			Multivariate analysis					
				Model 1[c)]			Model 2[d)]		
	OR[a]	95% CI[b]	*P*[e]	OR[a]	95% CI[b]	*P*[e]	OR[a]	95% CI[b]	P[e]
Health literacy									
Functional health literacy (≥18 vs. <18)	0.83	0.48-1.15	NS	-	-		0.90	0.50-1.61	NS
Communicative health literacy (≥18 vs. <18)	1.35	0.77-2.35	NS	-	-		1.35	0.76-2.41	NS
Critical health literacy (≥14 vs. <14)	1.08	0.62-1.88	NS	-	-		1.07	0.61-1.87	NS
Total score (≥51 vs. <51)	1.01	0.58-1.76	NS	1.10	0.61-1.96	NS	-	-	

[a]Odds ratio, [b]95% confidence interval, [c] Model 1 was adjusted for total HL score (≥51 vs. <51), age (years) and comorbidities (cardiovascular, cerebrovascular diseases, chronic kidney disease, and malignant neoplasms); [d]Model 2 was adjusted for three health literacy items (≥18vs. <18 or ≥14 vs. <14), age (years) and complications (cardiovascular disease, cerebrovascular diseases, chronic kidney disease, and malignant neoplasms); [e] ***P*<0.01, **P*<0.05, NS: non-significant.

Table 1. Gender-specific characteristics

	Mean (±SD) or N (%)				
	Men (N=207)		Women (N=254)		*P*[a)]
Age (years)	68.1	(10.9)	70.3	(9.4)	**
Anthropometric measurements					
Height (cm)	164.6	(6.2)	151.3	(6.5)	**
Body weight (kg)	64.4	(9.9)	53.5	(9.3)	**
Body mass index (BMI)	23.7	(3.0)	23.3	(3.5)	NS
Comorbidities					
Cardiovascular disease	32	(15.5)	25	(9.8)	NS
Cerebrovascular disease	8	(3.9)	18	(7.1)	NS
Chronic kidney disease	25	(12.1)	18	(7.1)	NS
Malignant neoplasms	33	(15.9)	17	(6.7)	**
Current medical histories					
Antihypertensive drug use (yes)	152	(74.1)	182	(71.7)	NS
Antidyslipidemic drug use (yes)	137	(66.8)	187	(73.6)	NS
Antidiabetic drug use (yes)	47	(22.9)	34	(13.4)	**
Health literacy					
Total health literacy score	48.1	(7.5)	48.3	(7.7)	NS
Proportion of higher functional health literacy (≥51)	78	(37.7)	105	(41.3)	NS
Functional health literacy	18.3	(4.1)	17.8	(4.4)	NS
Proportion of higher functional health literacy (≥18)	122	(58.9)	139	(54.7)	NS
Communicative health literacy	17.0	(3.1)	17.3	(3.2)	NS
Proportion of higher communicative health literacy (≥18)	106	(51.2)	140	(55.1)	NS
Critical health literacy	12.9	(3.0)	13.2	(3.1)	NS
Proportion of higher critical health literacy (≥14)	100	(48.3)	140	(55.1)	**
Healthy lifestyle characteristics					
Alcohol consumption (non-everyday drinker)	144	(69.6)	237	(93.3)	**
Smoking behavior (non-current smoker)	164	(79.2)	232	(91.3)	**
Exercise frequency	110	(53.1)	119	(46.9)	NS

(2 or more times per week)					
Body mass index (18.5-24.9)	137	(66.2)	181	(71.3)	NS
Sleep hours (7-8)	118	(57.0)	111	(43.7)	**
Breakfast (every morning)	191	(92.3)	240	(94.5)	NS
Snack between meals (no)	55	(26.6)	107	(42.1)	**
Total number of healthy lifestyle items	4.4	(1.3)	4.8	(1.1)	**
Proportion of participants with 6 or 7 total number of healthy lifestyle items	45	(21.7)	70	(27.6)	NS

a) **P<0.01, *P<0.05, NS: non-significant.

Table 2. Logistic regression analysis of health literacy with 6-7 healthy lifestyle characteristics among men (N=207)

	Univariate analysis			Multivariate analysis					
				Model 1[c)]			Model 2[d)]		
	OR[a]	95% CI[b]	*P*[e]	OR[a]	95% CI[b]	*P*[e]	OR[a]	95% CI[b]	P[e]
Health literacy									
Functional health literacy (≥18 vs. <18)	2.21	1.06-4.57	*	-	-		2.34	1.09-5.02	*
Communicative health literacy (≥18 vs. <18)	2.00	1.01-4.00	*	-	-		2.37	1.15-4.88	*
Critical health literacy (≥14 vs. <14)	2.69	1.34-5.37	**	-	-		2.78	1.36-5.70	**
Total score (≥51 vs. <51)	2.03	1.04-3.97	*	2.19	1.09-4.41	*	-	-	

[a]Odds ratio, [b]95% confidence interval, [c] Model 1 was adjusted for total HL score (≥51 vs. <51), age (years) and comorbidities (cardiovascular, cerebrovascular diseases, chronic kidney disease, and malignant neoplasms); [d]Model 2 was adjusted for three health literacy items (≥18vs. <18 or ≥14 vs. <14), age (years) and complications (cardiovascular disease, cerebrovascular diseases, chronic kidney disease, and malignant neoplasms); [e] ***P*<0.01, **P*<0.05, NS: non-significant.

Table 3. Logistic regression analysis of health literacy with 6-7 healthy lifestyle characteristics among women (N=254)

	Univariate analysis			Multivariate analysis					
				Model 1[c)]			Model 2[d)]		
	OR[a]	95% CI[b]	*P*[e]	OR[a]	95% CI[b]	*P*[e]	OR[a]	95% CI[b]	P[e]
Health literacy									
Functional health literacy (≥18 vs. <18)	0.83	0.48-1.15	NS	-	-		0.90	0.50-1.61	NS
Communicative health literacy (≥18 vs. <18)	1.35	0.77-2.35	NS	-	-		1.35	0.76-2.41	NS
Critical health literacy (≥14 vs. <14)	1.08	0.62-1.88	NS	-	-		1.07	0.61-1.87	NS
Total score (≥51 vs. <51)	1.01	0.58-1.76	NS	1.10	0.61-1.96	NS	-	-	

[a]Odds ratio, [b]95% confidence interval, [c] Model 1 was adjusted for total HL score (≥51 vs. <51), age (years) and comorbidities (cardiovascular, cerebrovascular diseases, chronic kidney disease, and malignant neoplasms); [d]Model 2 was adjusted for three health literacy items (≥18vs. <18 or ≥14 vs. <14), age (years) and complications (cardiovascular disease, cerebrovascular diseases, chronic kidney disease, and malignant neoplasms); [e] ***P*<0.01, **P*<0.05, NS: non-significant.

Appendix. 14 items of Health literacy scale (HLS14)

1.When you read instructions or leaflets from hospitals or pharmacies, how do you agree or disagree about the following ?

	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
Q1.I find characters that I cannot read.	5	4	3	2	1
Q2The print is too small for me (even though I wear glasses)	5	4	3	2	1
Q3.The content is too difficult for me.	5	4	3	2	1
Q4.It takes a long time to read them.	5	4	3	2	1
Q5.I need someone to help me read them.	5	4	3	2	1

2.If you are diagnosed as having a disease and you have information about the disease and its treatment, how do you agree or disagree about the following?

	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
Q6.I collect information from various sources.	1	2	3	4	5
Q7.I extract the information I want.	1	2	3	4	5
Q8.I understand the obtained information.	1	2	3	4	5
Q9.I tell my opinion about my illness to my doctor, family, or friends.	1	2	3	4	5
Q10.I apply the obtained information to my daily life.	1	2	3	4	5

3.If you are diagnosed as having a disease and you can obtain information about the disease and its treatment, how do you agree or disagree about the following ?

	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
Q11.I consider whether the information is applicable to me.	1	2	3	4	5
Q12.I consider whether the information is credible.	1	2	3	4	5
Q13.I check whether the information is valid and reliable.	1	2	3	4	5
Q14.I collect information to make my healthcare decisions.	1	2	3	4	5