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Levels and Determinants of Health Literacy in Bahrain's Community Context

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ABSTRACT

Objectives: We sought to assess health literacy (HL) and its associated factors in the Bahraini community using a validated HL scale and address its deficient domains to inform policy. ***Methods***: We carried out a conveniently sampled, cross-sectional survey using the All Aspects of Health Literacy Scale in the Bahraini community. The scale has three key aspects: basic or functional HL (FUN-4 items), which corresponds to basic reading and writing skills, and knowledge of health conditions and health systems; communicative or interactive HL (COM-3 items) on communicative and social skills to extract information from different forms of communication; and critical HL (CR-4 items), the advanced cognitive and social skills to critically analyze information and exert greater control over life events and situations relating to individual and community level wellbeing goals. We examined the association between sociodemographic and health information for the survey tool items using the chi-square test. The relationship between total scale score and subscale scores of the three domains of the survey tool to sociodemographic and health information was investigated using the *t*-test and ANOVA. ***Results:*** Of the 836 participants (mean age = 26.6 years), single (64.0%) and university students (76.6%) were predominant; 15.6% reported long-term sickness and visited the general physician often. The highest mean item scores were for empowerment (1.8) and lowest for functional HL (0.1). The significant domain-specific responses to the survey tool items were 12 for critical HL, 10 for functional HL, six for communicative HL, and five for empowerment. Participants aged < 30 years old, female, married, pursuing/completed Master's program, employed, and whose self-rating of health was excellent had higher total HL scores. ***Conclusions:*** Older, less educated respondents with a poor self-rating of health had low HL scores. We recommend further studies to address the relative importance of functional, interactive, and critical HL in the community to promote health outcomes.

The Kingdom of Bahrain consists of 33 islands located in the Arabian Gulf. Bahrain, is a high-income state characterized by ethnic diversity. The estimated population in 2014 was 1.32 million, of which 48% were Bahrainis. It currently has nine government hospitals, 15 private hospitals, 16 government health centers, 300 private clinics, five private companies' clinics, and six environmental healthcenters.[1]

A range of curative, preventive, and promotive services are provided free for all Bahraini citizens and subsidized for expatriate residents.

Health literacy (HL) is a composite term, defined as the "personal characteristics and social resources needed for individuals and communities to access, understand, appraise and use information and services to make decisions about health[2]."Its capacity encompasses communication, assertion, and enacting on these decisions.[3] The ingredients of HL that can affect the quality of health include the knowledge on health topics, communication skills of laypeople and health professionals, culture, demands of the healthcare and public health systems, adherence to health-related recommendations,[4] situation or context, and healthcare costs.[5]

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Inadequate HL leads to health inequalities. As a social determinant of health, lower levels of HL impact health status and health outcomes (e.g., late-stage disease when diagnosed with prostate cancer) with a range of conditions (e.g., diabetes, hypertension, infection control of HIV, HBV, HCV, etc.).[6] The 2004 Institute of Medicine report entitled "Health Literacy: A Prescription to End Confusion" described that 90 million adults have trouble understanding and acting on health information, since health information is unnecessarily complicated, and the healthcare workforce needs to improve on communication.[7] From the service user's perspective, contemporary literature suggests that older adults, minority populations, and patients who are less educated and/or less knowledgeable about their health condition are more likely to have lower HL, visit their healthcare provider frequently, and perceive difficulties in exerting control over their care, than younger, highly educated, and knowledgeable patients.[8–10] Furthermore, persons with limited HL skills have higher utilization of treatment services (hospitalization and emergency services) and lower utilization of preventive measures. Therefore, healthcare workers are called upon to assess the HL of service users to identify who might need additional support.[11] Also, understanding the strengths and limitations of HL in the communities allows strategic design and delivery of interventions that address health inequities, improve health outcomes, and strengthen health systems.

Gaining community perspectives on HL helps us to improve our practices. Measuring HL is an emerging and evolving construct,[12] as it is a potentially modifiable contributor to health. In recent times, there is a growing interest in service users' understanding of HL in its social and institutional context.[13] Hence, the measurement of HL must account for its multi-dimensional landscape to allow comprehensive and precise data to be collected about the HL of individuals and population groups.[14] The determinants then allow interventions that aim to improve health and equity.

The studies on HL in the Arab parts of the world are scarce[15] and there are none in Bahrain. Therefore, we embarked on this study intending to assess HL and its associated factors in the Bahraini community using a validated tool and address its deficient domains through recommendations for informed policy.

METHODS

Eight hundred thirty-six Bahraini adults participated in the survey between April and June 2018.

We conducted a cross-sectional survey following a convenience sampling procedure. Under the supervision of the faculties, face-to-face interviews were conducted by the fourth-year students enrolled in the Nursing Bachelor of Science program at the College of Health Sciences (CHS), University of Bahrain (UoB). The students carried out the interview as part of the research methodology course and their graduation research project.

We used a tool that was quick and easy to use in the community context. HL was measured by the All Aspects of Health Literacy Scale (AAHLS) that has proven reliability (Cronbach's alpha = 0.74).[16,17] Although the survey tool was reported to be reliable, we carried out a factor analysis to determine the structures of the survey tool. For construct validity, we used exploratory factor analysis. Latent factors were extracted using a minimum sample of 10 per item. Using promax rotation, the maximum likelihood extraction of latent factors was performed. The eigenvalue > 1 and factor loading > 0.40 for the factors indicated good construct validity. Therefore, the cut-off point for determining the variables loaded by each factor was set at 0.40. Further, the Cronbach's alpha and McDonald's omega coefficient were estimated to determine the reliability. A sample size of 30 was selected to evaluate internal consistency. Moreover, the instrument reliability was checked using the two-way mixed-effects model and absolute agreement at 95% confidence interval (CI). A computed Cronbach's alpha and McDonald's omega coefficient > 0.70 and an intra-class correlation coefficient (ICC) value > 0.80 are considered acceptable.[18]

The validated questionnaire in Arabic version was employed for use with the study participants.[19] The survey contained two sections: section one included the sociodemographic and health information variables of age (categorized into 17–30, 31–45, 46–60, and > 61), gender, marital status, educational level, employment status, self-rating of general health, long-term sickness, and the last visit to the general physician (GP). Section two contained the AAHLS scale. The AAHLS scale[16] has been carefully constructed to reflect three key aspects of HL. Basic or functional HL (FUN-4 items), which corresponds to basic reading and writing skills, and

basic knowledge of health conditions and health systems; communicative or interactive HL (COM-3 items) corresponds to communicative and social skills to extract information, derive meaning from different forms of communication, and apply to changing circumstances; and critical HL (CR-4 items), the advanced cognitive and social skills to critically analyze information and exert greater control over life events and situations relating to individual and community level wellbeing goals. Each AAHLS item was rated on a three-point Likert scale featuring the prompts 'rarely' (0), 'sometimes' (1), and 'often' (2) for the COM HL and CR HL items. Whereas, the prompt in FUN HL items were 'rarely' (2), 'sometimes' (1) and 'often' (0). The lowest possible score was 0 and the highest possible score was 2. Empowerment domain (EMP-3 items) addresses EMP of participants (community and social engagement, i.e., information and encouragement to lead healthy lifestyles or quality of life).

The study had a standard approval from the institutional scientific research committee of the CHS, UoB, Bahrain. Before gathering the data, the interviewer explained the study purpose to the participants, and informed consent was obtained.

The participants' information was anonymized and kept confidential to protect the data gathered during the study and thereafter. The data from the questionnaires were cleaned, coded, and entered in Excel (Microsoft, Redmond, WA, USA) and then exported to SPSS (IBM Corp. Released 2012. IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp.) for statistical analysis. Twenty percent of the data was randomly accessed for a quality control check using randomly generated numbers.[21]

The descriptive analyses for the stratified sociodemographic and health information of the study population was computed. Pearson's chi-square test was used to examine the association between sociodemographic and health information for AAHLS items. Further, the relationship between total scale score and subscale scores of FUN HL, COM HL, and CR HL of AAHLS items with sociodemographic and health information was investigated using the *t*-test and ANOVA.

RESULTS

The sociodemographic and health information are summarized and presented in Table 1. There were 836 participants in this study. The mean age of participants was 26.6±12.2 years (range = 18–87). Age was categorized into 17–30 (63.3%), 31–45 (13.4%), 46–60 (9.6%), and > 61 (12.6%) year groups. Over half (51.9%) of participants were females; 64.0% were single, 30.4% (n = 254) were married, and 5.6% (n = 47) were others who were widowed, divorced, or separated. Twenty (2.4%) participants never attended school, 75 (9.0%) completed primary school, 101 (12.1%) completed a university degree or diploma. The majority (69.9%) were pursuing a bachelors/diploma program. The majority (64.6%) were still pursuing education,

Table 1: Sociodemographic and health information (n = 836).

Variables	n (%)
Age, (mean ± SD), years	26.6 ± 12.2
Range, years	18–87
Gender	
Male	402 (48.1)
Female	434 (51.9)
Marital status	
Married	254 (30.4)
Single	535 (64.0)
Others	47 (5.6)
Educational level	
Never attended school	20 (2.4)
Completed primary school	75 (9.0)
University degree/diploma	101 (12.1)
Pursuing Bachelors/diploma program	584 (69.9)
Pursuing/completed Master's program	56 (6.7)
Employed	
Student	540 (64.6)
Yes	170 (20.3)
No	126 (15.1)
Self-rating of general health	
Poor	28 (3.3)
Fair/OK	169 (20.2)
Good	434 (51.9)
Excellent	205 (24.5)
Long-term sickness	
Yes	119 (14.2)
No	519 (62.1)
Don't know	198 (23.7)
Time since the last visit to a general physician	
Within last week	130 (15.6)
Within last month	275 (32.9)
Within six months	241 (28.8)
Within last year	82 (9.8)
More than one year	108 (12.9)

SD: standard deviation.

20.3% were employed, and 15.1% were pensioners or dependants. Over half of (51.9%) participants reported to be in good health, and 24.5% in excellent health. Most (62.1%) participants had no long-term sickness. In terms of the time since last visit to the GP, 15.6% had visited within the last week, 32.9% within the last month, 28.8% within the last six months, 9.8% within the last year, and 12.9% more than a year ago. Voluntary participation in the survey by the young and educated was prominent. This could be due to good general literacy of the educated young than others who shied away from the survey. Fifteen percent of the sample reported having long-term sickness, and that mirrored the response of their last visit to the GP within the last week.

The overall Cronbach's alpha value for the survey tool was 0.74, which is considered satisfactory. Our results of Cronbach's alpha for the three sub-scales were 0.84 (good) for FUN items; 0.77 (acceptable) for the COM items; and 0.66 (questionable) for the CR items. Similarly, the overall McDonald's omega coefficients of the factors was 0.81, for the three sub-scales were 0.79 (acceptable) for FUN items, 0.82 (good) for the COM items, and 0.77 (acceptable) for CR items. The overall ICC for the factors were good with a value of 0.89 (95% CI: 0.77–0.97; $p = 0.001$).

The AAHLS tool measured a comprehensive range of HL elements for each domain of HL assessed. Scores on the different items are presented in Table 2. Although the AAHLS tool does not provide the scoring mechanism to categorize the participants as having low, medium, or high HL, we have described mean scores on each of the AAHLS items of the responders. In general, responses to the AAHLS domains were significantly different. We found that the mean item scores were higher for EMP, followed by COM HL, suggesting confidence in these areas compared to CR and FUN HL which had lower scores. The highest mean score (1.8) was observed for the EMP item: "Do you think that there are plenty of ways to have a say about health?" The lowest mean score (0.1) was observed for the FUN HL item: "When you need help, can you easily get hold of someone to assist you?"

The association between important sociodemographic and health information variables with each AAHLS item was determined by a series of Pearson's chi-square tests. By HL domain specificity, the responses of the participants significant to the AAHLS items were 12 for CR HL, 10 for FUN HL, six for COM HL, and five for EMP. Notably, five significant responses to the items in the FUN HL "how often do you need someone to help you when you are given information to read by your doctor, nurse, or pharmacist?" as well as in the CR HL "how often do you try to work out whether information about your health can be trusted?" were distinguishable. On the contrary, the responses to the item in the FUN HL "when you need help, can you easily get hold of someone to assist you?" was fairly distributed, and none was found significant. To reiterate, this item had the lowest mean score. Furthermore, by category specificity of the sociodemographics, more diverse responses to the AAHLS items were noted under the "education and employment" category. Of that, responses to seven items were significant. Likewise, among the categorized health information variables, the participants' responses under the "self-rating of health" were diverse, and responses to eight items were significant.

For each participant, we also computed overall score and domain level score by summing up the responses recorded [Table 3], and investigated their relationship with the important sociodemographic and health information variables using the *t*-test and ANOVA. Participants aged < 30 years old, female, married, pursuing/completed master's program, employed, and whose self-rating of health was excellent had significantly higher total HL scores. The participants' scores were significantly higher in FUN HL for those aged < 30 years old; in CR HL for married participants; in FUN HL and CR HL for pursuing or completed master's program and current employment categories. Self-rating of health as excellent was associated with higher scores in FUN and COM HLs, and this association did not reflect in CR HL. Participants who had not visited their GP in the past year had significantly higher CR HL scores. On the other hand, respondents aged > 30, less educated, unemployed, and who rated their self-rating as poor were associated with low HL scores, and visited the GP more frequently.

DISCUSSION

We believe that assessing HL in the Bahraini community will be a critical step towards providing access to healthcare and utilization of health services by all. To the best of our knowledge, this study

Table 2: AAHLS item scores against sociodemographic and health information (n = 836).

AAHLS items	Item score		Sociodemographic and health information Chi-square test value and significance															
			Age		Gender		Marital status		Education		Employment		Self-rating of health		Long-term sickness		Last GP visit	
	Mean	SD	Chi-square value	*p*-value	Chi-square value	*p*-value	Chi-square value	*p*-value	Chi-square value	*p*-value	Chi-square value	*p*-value	Chi-square value	*p*-value	Chi-square value	*p*-value	Chi-square value	*p*-value
FUN1: How often do you need someone to help you when you are given information to read by your doctor, nurse, or pharmacist?	0.8	0.7	63.96	0.001**	12.64	0.010**	33.91	0.001**	93.44	0.001**	62.26	0.001**	12.37	0.054*	7.29	0.300	9.56	0.300
FUN2: When you need help, can you easily get hold of someone to assist you?	0.1	0.4	10.78	0.550	1.84	0.770	9.11	0.060	7.11	0.720	0.88	0.990	8.22	0.220	3.91	0.690	4.83	0.780
FUN3: Do you need help to fill in official documents?	0.9	0.8	26.87	0.001**	7.28	0.120	7.65	0.110	31.39	0.001**	18.51	0.005*	12.66	0.049*	5.60	0.470	2.93	0.940
COM1: When you talk to a doctor or nurse, do you give them all the information they need to help you?	1.4	0.6	16.10	0.013**	6.00	0.200	6.65	0.160	25.78	0.004**	3.52	0.740	15.41	0.017**	5.49	0.480	7.31	0.500
COM2: When you talk to a doctor or nurse, do you ask the questions you need to ask?	1.4	0.7	2.22	0.900	2.07	0.720	7.65	0.110	17.85	0.053*	15.58	0.016**	4.22	0.650	2.52	0.870	7.63	0.470
COM3: When you talk to a doctor or nurse, do you make sure they explain anything that you do not understand?	1.3	0.7	6.94	0.330	7.79	0.100	2.23	0.690	4.61	0.920	11.84	0.060	15.06	0.020*	5.48	0.480	5.20	0.740
CR1: Are you someone who likes to find out lots of different information about your health?	1.2	0.7	4.29	0.640	1.84	0.770	6.32	0.170	11.18	0.340	12.62	0.050*	12.68	0.048*	4.53	0.610	5.02	0.760

Table 2: AAHLS item scores against sociodemographic and health information (n = 836).

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AAHLS items	Item score		Sociodemographic and health information Chi-square test value and significance															
			Age		Gender		Marital status		Education		Employment		Self-rating of health		Long-term sickness		Last GP visit	
	Mean	SD	Chi-square value	*p*-value	Chi-square value	*p*-value	Chi-square value	*p*-value	Chi-square value	*p*-value	Chi-square value	*p*-value	Chi-square value	*p*-value	Chi-square value	*p*-value	Chi-square value	*p*-value
CR2: How often do you think carefully about whether health information makes sense in your particular situation?	1.2	0.7	10.53	0.100	4.94	0.294	14.55	0.006**	11.77	0.300	9.11	0.170	12.67	0.049*	12.99	0.040	9.65	0.290
CR3: How often do you try to work out whether information about your health can be trusted?	1.1	0.6	25.87	0.001**	2.18	0.700	28.89	0.001**	31.50	0.001**	27.05	0.001**	18.42	0.005**	9.40	0.150	9.67	0.290
CR4: Are you the sort of person who might question your doctor's or nurse's advice based on your own research?	1.0	0.7	12.79	0.047*	6.856	0.140	8.89	0.060	23.06	0.011**	23.92	0.001**	5.05	0.540	5.31	0.500	7.720	0.460
EMP1: Do you think that there are plenty of ways to have a say about health?	1.8	0.7	3.90	0.690	2.40	0.660	3.67	0.450	14.10	0.170	19.06	0.004**	8.10	0.230	3.72	0.710	25.60	0.001**
EMP2: Within the last 12 months,= have you taken action to do something about a health issue?	1.5	0.5	7.54	0.270	2.34	0.670	4.16	0.390	12.91	0.230	8.69	0.190	10.38	0.110	70.99	0.001**	5.84	0.670
EMP3: What do you think matters most for everyone's health? *(Either information and encouragement to lead healthy lifestyles or quality of life)*	1.4	0.4	6.61	0.360	5.57	0.230	0.70	0.950	18.28	0.003**	5.42	0.490	15.02	0.020*	8.56	0.200	6.15	0.630

AAHLS: All Aspects of Health Literacy Scale; SD: standard deviation; GP: general physician; FUN: functional; COM: communicative; CR: critical; EMP: empowerment.
**Significant at 0.050 level. **Significant at 0.010 level.*

Table 3: Bivariate analysis (n = 836).

Sociodemographic and health information	Total HL score	Functional HL	Communicative HL	Critical HL
Age (< 30 years)	1.78**	1.89**	1.61	1.84
Gender (female)	1.11**	0.70	1.41	1.19
Marital status (married)	1.11**	0.66	1.39	1.24**
Education level (pursuing or completed Master's program)	1.29**	1.00**	1.45	1.47**
Employed	1.12**	0.61**	1.43	1.27**
Self-rated health (excellent)	1.11**	0.70*	1.42*	1.17
Long-term sickness	1.11	0.67	1.41	1.23
Last GP visit (> 1 year)	1.10	0.66	1.39	1.21*

HL: health literacy; GP: general physician.
**Significant at 0.050 level.; **Significant at 0.010 level.*
The relationship between total scale score (significant alone depicted) and subscale scores with age, gender, marital status, and long-term sickness was investigated using t-tests; level of education, employed status, self-rating on health, and last GP visit were tested by ANOVA.

is the first of its kind in the Bahraini community to measure HL and its associated factors using a validated AAHLS tool. Various tools to measure the levels of HL exist, including the Newest Vital Sign, the Rapid Estimate of Adult Literacy in Medicine (REALM), Test of Functional HL in Adults (TOFHLA), Wide Range Achievement Test, and the Short Assessment of HL for Spanish Adults. Although the use of REALM and TOFHLA are not uncommon, the measurement methods are not sensitive and comprehensive, as they measure a single dimension in general.[22] Therefore, we chose the AAHLS survey tool, as it was reliable, had a validated Arabic version, was sensitive, quick, easy to use in the community, and encompasses a range of competencies of FUN, COM, and CR HL.[16,17,19] Our results on factor analysis further strengthened our assumptions to carry out the survey using the AAHLS tool. The overall Cronbach's alpha value for the survey tool was 0.74, and the overall McDonald's omega coefficients of the factors was 0.81.

Two systematic reviews[23,24] have shown that comparing results from HL studies has been difficult due to different approaches and measures used for HL; likewise, we too experienced difficulties comparing. In addition, considering the cultural and linguistic similarity within the Arab region, a comparison of HL was difficult due to the scarcity of regional studies. Obtaining health information is reckoned as a functional skill; however, functional skill alone is not enough to make good health decisions. Our study findings imply that exerting control over one's health is dependent on the complimentary types of functional, interactive, and critical components of HL, and this agrees with the report of van der Heide et al.[25] Predominantly, educational attainment can be regarded to be associated with HL. Two-thirds of the participants were younger and attending university; therefore, their good general literacy propelled them to participate in our survey voluntarily, and they reported better health status than others. Our results reflected previous reports from Europe[26–28] that participants who had completed higher education scored high in the three domains of HL relating to finding, understanding, and appraising health information compared with their less-educated contemporaries. Equivalently, the employment status of the respondents mimicked the association of HL to that of education. It is discernable that education and employment are similar in attaining higher levels of HL and that is further expressed in the "self-rating of health" in our study.

The study population was considerably heterogenic concerning several sociodemographic and health-related characteristics [Table 1]. Health information access and health system utilization may be particularly challenging for those with low HL. Of particular note, a high proportion of participants lacked FUN HL- a domain of access to support for comprehending written health information that is considered diverse with 'distributed' and 'individual' competence. To illustrate [Table 2], the lowest mean score (0.1) obtained by the respondents to the item "when you need help, can you easily get hold of someone to assist you?" explains that people sought the help often. In deviance, the highest mean score

(1.8) was recorded in the EMP capability domain, echoing EMP at the level of community and social engagement for the item "do you think that there are plenty of ways to have a say about health?" This suggests that people assumed to have various ways talk about their health. Bearing in mind that HL is a complex phenomenon, analogous paradoxes have been found in documented reports,[29,30] where a high percentage of participants had low FUN HL while they simultaneously reported that they did not have any challenges with other health information. Our findings demonstrated that assumptions should not be made that those having limited FUN HL have limited HL or converse. From a public health perspective, it is necessary to be aware of the multifarious dimensions of HL and that HL competencies vary in the populations.

There were several significant univariate associations among sociodemographics and health information variables with HL. On examining the significant associations between important variables to AAHLS items [Table 2], the responses to the item in the FUN HL "how often do you need someone to help you when you are given information to read by your doctor, nurse, or pharmacist?" emerged as significant to the most number of variables. Thus, suggesting people sought the help of the doctor, nurse, or pharmacist often, and significant variations were found among age, gender, marital status, education, employment, and self- rating on health. Besides, the responses to the item in the CR HL "how often do you try to work out whether information about your health can be trusted?" was also prominent suggesting people often tried to work out on the veracity of health information provided, and significant variations were found among age, marital status, education, employment, and self-rating on health.

Overall, participants who were < 30 years of age, female, married, pursuing/completed Master's program, employed, and whose self-rating of health was excellent had significantly higher total HL scores and in certain domain-specific scores [Table 3]. A partial explanation could be that our sample was heterogenic; therefore, young, educated participants who volunteered to participate have scored high to our AAHLS items. Conversely, older, less-educated respondents, not employed, who self-rated their health as poor were associated with low HL scores, and they visited the GP more frequently. Further, the significant associations between inadequate FUN HL and education, and long-term illness and age, and the significant associations between inadequate COM HL and long-term illness in this study have been identified similar to the report of HL among diabetic patients.[31]

The methodological strengths of this study included a validated AAHLS tool and a larger sample size spread across the four governorates of Bahrain. It is known that individuals with a high burden of symptoms are less likely to attend surveys, and that is reflected in our study.[32] However, our study had a few limitations. Foremost, we relied on self-reported data that may differ from actual behavior, because respondents might have given socially desirable answers during the interview. In reality, owing to stress or fear, people may have more difficulty with HL to exert control over healthcare than their responses in the survey. Second, the non-probability convenience sampling used in our study may not have adequately represented all members of the Bahraini population; our student surveyors had better access to other students of the university hence resulting in more student participants in our survey. Additionally, due to the paucity of time, we chose convenience sampling as the study had to be completed within a semester. Third, no inferences could be made about the directionality of the causal associations that were found owing to the cross-sectional design of the study.

Despite these limitations, we believe HL screening is expected to assist in efficiently managing healthcare resources for good returns on health. HL is a feature of interactions involving an individual's HL and social environments,[33] thereby, improved HL could motivate individuals to solve personal and public health problems. Furthermore, good HL enables efficient health policies with lower health care costs, and builds healthy environments and successful health promotions with better health care outcomes.[34]

CONCLUSION

Older, less-educated respondents with a poor self-rating of health had low HL scores. Regionally HL studies are scarce, therefore, we recommend further studies to identify the gaps to improve the usability of health information and health services, build knowledge to improve decision making, and

advocate for HL to address the relative importance of FUN, COM, and CR HL in community ability to fulfill an active role in their care in order to promote health outcomes and strengthen health systems.

Disclosure
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