

Supplementary Materials S1. Specific items of assessment tools for the health literacy among the public in this literature review.

Author, year	Scale Names	Domains	Items	Criterion
measurement modes based on multiple fields				
Pleasant, A,2008 [32]	A public health literacy knowledge scale	timing of births; safe motherhood; child development and early learning; breastfeeding, nutrition and growth; immunization; coughs, colds and more serious illnesses; hygiene; malaria; HIV/AIDS; injury prevention; disasters; emergen-cies	For a healthy pregnancy and birth, all pregnant women should visit a health worker before the baby is born; Births that are not assisted by a skilled birth attendant are as safe as births that are assisted by a skilled birth attendant; It is normal if children below the age of 1 year weigh the same over a 2-month period; Children who are vaccinated are protected from dangerous diseases; Overall, vaccination has more risks than benefits; Children learn a lot by playing; Most injuries and accidents cannot be prevented; If a child is breathing rapidly or has difficulty breathing,the child should be taken immediately to a health-care provider; Many diseases can be prevented by washing hands before touching food; Using condoms when having sex can prevent the spread of AIDS; Using mosquito nets helps prevent malaria; Exercise helps prevent heart disease; Coughs and colds only get better with medicine; It is the father's gene that decides whether the baby is a boy or a girl; Antibiotics kill viruses as well as bacteria; Cigarette smoking causes lung cancer; All bacteria are harmful to humans	response:True or False
O'Connor, M., 2015 [33]	The mental health literacy scale	ability to recognise disorders; knowledge of where to seek information; knowledge of risk factors and causes; knowledge of self-treatment; knowledge of professional help available; attitudes that promote recognition or appropriate help-seeking behaviour		mean score for the scale was 127.38 (SD)412.63, Minimum 492.00, Maximum4155.00, 95% CI4126.09–128.67).

measurement modes based on abilities

Sarah J. Schrauben, 2017 [34]	Zambia's health literacy scale	capacity to interpret; Capacity to obtain; capacity to understand; make appropriate health decisions	primary school education; Able to read whole sentence or parts; Read magazine at least once per week; Listen to radio at least once per week; Watch TV at least once per week; Heard family planning information from magazine, radio, TV in last month; Knows a place to get condoms; Knows a place to get AIDS test; Comprehensive knowledge of HIV/AIDS; Reduce chance of AIDS by always using condoms during sex; Reduce chance of AIDS by having only one sex partner with no other partner; A healthy person can have AIDS; Cannot get AIDS from mosquito bite; Cannot get AIDS from witchcraft or supernatural means; Comprehensive knowledge of HIV/AIDSb	
Jordan, J. E., 2013 [35]	The health literacy management scale	patient attitudes towards their health; understanding health information; social support ; socioeconomic considerations; accessing GP healthcare services; communication with health professionals; being proactive; using health information	exemplar items: Make time for things that are good for your health; Pay attention to your health needs; Read written information e.g. leaflets given to you by a doctor; Ask someone to go with you to a medical appointment; Pay to see a doctor; Afford transport to medical appointments; Know where a doctor can be contacted; Know how to get a doctor's appointment; Ask a doctor questions to help you understand health information Get the information you need when seeing a doctor; Change to a different doctor to get better care; Get a second opinion about your health from a health professional; Use information from a doctor to make decisions about your health Follow instructions that a doctor gives you	response:A five-point Likert-style response format was developed in response to the content of the items: 1 = unable to do, 2 = very difficult, 3 = with some difficulty, 4 = little difficulty, 5 = without difficulty.
McCormack, L, 2010 [36]	Health Literacy Skills Instrument	identifying and understanding health-related text; interpreting information and/or data in the form of tables, charts,pictures, symbols, maps,and videos; completing computations; making inferences based on the information presented or applying information to a specific scenario; utilizing the Internet=computer to	which of the following is probably not a second-degree burn; Which of the following is a symptom of lactose intolerance; Which of the following is not a sign of a stroke; Which set of low density lipoprotein (LDL) and high density lipoprotein (HDL) levels is best; Which of the following problems could be caused by this medicine; Which of the following entrances is closest to the elevator; In the example listed in the first row of the table, when should the medicine be taken; How much will the insurance company pay for the physical therapy received on 7=22=09; How much does the patient have to pay for the laboratory services received on 7=15=09; More men die from prostate cancer than from other causes. Would you say this is true, false, or are you not sure;Who is more likely to die of	response:Choice question

obtain health information

prostate cancer; How many grams of fiber are in two servings; If a person is on a 2,500 calorie diet, what percent of the daily value of saturated fat would he get from one serving; If a person is at high risk for heart disease, which of the following levels of low density lipoprotein (LDL) cholesterol is best; If Joe was visiting someone in Room 130 and wanted to go to the cafeteria, which of these places would he pass if he took the shortest route; A person is making a salad and wants to add one serving of chopped, uncooked carrots. How much should she use; A person is cooking dinner for himself and wants to include one serving from the meat and beans group. What should he choose; What do the muscles in the throat typically do when a person is sleeping; What part of the body do lunge exercises work; If a person was worried about his cough, what number should he press; If a person wanted to check on the date and time of an appointment she already made, what number should she press; John weighs 200 pounds and he walked at a medium pace on a firm surface for 30 minutes. How many calories did he burn; Kate weighs 150 pounds. Which activity would burn the most calories; What does this (heart attack risk) tool do; John is 39 years old and smokes. His blood pressure is 130=90 and he's on blood pressure medicine. His HDL cholesterol is 50 and his total cholesterol is 230. What is his estimated 10-year risk of heart attack

reading/comprehension skills; individual empowerment (first aid skills); communication/decision making skills; assessment skills of health information in virtual media; accurate assessment/judgment skills; social empowerment; individual empowerment (household medical Equipment use) ; health information access; health information use;

the ability to read written materials (books, etc.) on health and disease; The ability to read the written instructions of health professionals; The ability to fill in the forms requested by health centers; The ability to read guide boards in health centers; The ability to read written worksheets before performing lab tests/ultrasound/radiology; The ability to understand the concepts of guide boards; The ability to understand the concepts of guide worksheets before performing lab tests/ ultrasound/radiology; The ability to understand the conversations of health experts presented on mass media; The ability to understand the contents presented in health educational materials (newspapers, pamphlets and so on.); The ability to understand drug usage prescribed by the company or pharmacist on the package; The ability to understand health care worker's recommendations; The ability to complete forms asked by

Haghdoust, A., The Iranian Health Literacy Questionnaire
2015 [37]

health knowledge

health care centers, independently; The ability to understand Internet and electronic resources related to health and disease; Evaluating the health information presented on the Internet; Evaluating the health information presented on the Radio or TV; Evaluating the recommendations presented by physicians and/or health care workers; Evaluating health information presented on handbooks, educational pamphlets and so on; Evaluating health information presented in newspapers, journals and magazines; Evaluating recommendations presented by friends and relatives on health and disease; The ability to transfer their own health information to the others; Using prescribed antibiotics completely in spite of resolved symptoms; Refer to physician for check up in the case of having close relatives with cancer; Refer to physician for annual checkup even if there is no symptoms for having cancer; Take care of own health in any situation 0.796; The ability to communicate with health workers and ask them to re-explain their recommendations in the case of not understanding the meaning; The ability to measure blood pressure by sphygmomanometer; The ability to measure blood sugar and applying a glucose-meter at home; The ability to measure body temperature by applying a thermometer; The ability to measure heart beat rate; The ability to perform IM injections; The ability to perform IV injections; The ability to perform first aid in the case of emergency situations; The ability to help victims in the case of an accident prior to arrival of emergency aids; Participation in public festivals such as public walking or environmental cleanup activities; Participation in the meetings of local health centers in the case of invitation; Paying attention to health priorities of political candidates while voting;

Chinn, D., 2013 [38]	All Aspects of Health Literacy Scale	functional health literacy; communicative health literacy; critical health literacy	<p>how often do you need someone to help you when you are given information to read by your doctor, nurse or pharmacist; When you need help, can you easily get hold of someone to assist you; Aggregate of Q1 and Q2; Do you need help to fill in official documents; When you talk to a doctor or nurse, do you give them all the information they need to help you; When you talk to a doctor or nurse, do you ask the questions you need to ask; When you talk to a doctor or nurse, do you make sure they explain anything that you do not understand; Are you someone who likes to find out lots of different information about your health; How often do you think carefully about whether health information makes sense in your particular situation; How often do you try to work out whether information about your health can be trusted; Are you the sort of person who might question your doctor or nurse's advice based on your own research; Do you think that there plenty of ways to have a say in what the government does about health; Within the last 12 months have you taken action to do something about a health issue; What do you think matters most for everyone's health</p>	<p>response: a 3-point scale featuring the prompts rarely", "sometimes" and "often"; Single choice question.</p>
Suka, M., 2013 [39]	The 14-item health literacy scale	functional health literacy; communicative health literacy; critical health literacy	<p>find characters that I cannot read; Feel that the print is too small for me to read; Feel that the content is too difficult for me to understand; Feel that it takes a long time to read them; Need someone to help me read them; Collect information from various sources; Extract the information I want; Understand the obtained information; Communicate my opinion about my illness; Apply the obtained information to my daily life; Consider whether the information is applicable to me; Consider whether the information is credible; Check whether the information is valid and reliable; Collect information to make my healthcare decisions;</p>	<p>response: a Likert-type scale ranging from "strongly disagree", "disagree", "not sure", "agree" or "strongly agree". Higher scores indicate a better HL</p>

the combination of both measurement modes

TZU-I TSAI, The Mandarin Health years of schooling; reading habit; health status; /
 2011 [40] Literacy Scale health knowledge; reading assistance

the three domains: healthcare; disease prevention; health promotion

Sorensen, K., The European Health four-component structure: accessing; /
 2013 [41] Literacy Survey understanding; appraising and applying health
 Questionnaire related information

needed health knowledge and understanding; accessing information and services;

Intarakamhang, ABCDE (alcohol, communicating with professionals; managing /
 U., 2016 [42] baccy, coping, diet, their health condition; getting media and
 and exercise)-health information literacy; making appropriate health
 literacy scale decisions to good practice; participating in
 social health literacy; maintaining healthy
 behavior

Notes: / not described

we determined the following ranges of health literacy levels: inadequate (0–30), marginal (31–42), and adequate (43–50).

response: a Likert-type scale ranging from “very easy”, “easy”, “difficult” or “very difficult”.

response: Likert(5-point scale)

the score based on 3 levels of ABCDE-HL:

middle level

high level

low level

Supplementary Materials S2. Specific item of the quality of the survey studies on the development and verification of health literacy instruments.

Reporting Item	Pleasant, A, 2008 [32]	O' Connor, M., 2015 [33]	Sarah J. Schrauben, Jordan, J. E., 2017 [34]	McCormack, L, 2010 [35]	Haghdoust, A., 2015 [36]	Chinn, D., 2013 [37]	Suka, M., 2013 [38]	TZU-I TSAI, 2011 [39]	Sørensen, K., 2013 [40]	Intarakamhang, U., 2016 [41]	[42]
Background literature review	*	*	*	/	*	*	*	*	*	*	*
Explicit research question	*	*	/	*	*	*	/	*	*	*	*

Conclusions and recommendations	*	*	*	*	*	*	*	*	*	*	*	*
Limitations	/	*	*	*	/	*	/	*	*	*	*	/

Ethics and disclosure

Consent	*	/	*	*	/	*	/	*	/	/	*
Sponsorship	*	/	*	/	/	*	/	*	/	/	*

Notes: (1) * described; (2) / not described