

Original article

Croatian Translation and Linguistic Adaptation of the Short Assessment of Health Literacy for Spanish Adults (SAHLSA-50)

Terezija Berlančić^{1,2,3}, Marin Kuharić⁴, Dragan Janković⁵, Jakov Milić¹, Katarina Badak¹, Lada Zibar^{*1,6}

¹ Faculty of Medicine Osijek, Josip Juraj Strossmayer University of Osijek, Croatia

² Department of Gynecology and Obstetrics, County General Hospital Našice, Croatia

³ Faculty of Economics in Osijek, Josip Juraj Strossmayer University of Osijek, Croatia

⁴ Faculty of Dental Medicine and Health Osijek, Josip Juraj Strossmayer University of Osijek, Croatia

⁵ Department of Neurosurgery, University Hospital of Marburg, Germany

⁶ Department of Nephrology, Clinical Hospital Merkur, Zagreb, Croatia

*Corresponding author: Lada Zibar, ladazibar@gmail.com

Abstract

Introduction: Population needs health literacy (HL) in order to understand health-related topics. Short Assessment of Health Literacy for Spanish Adults (SAHLSA-50) could be a high-quality tool for assessing HL in adults. Unlike questionnaires in the English language, which are not easily modifiable for Croatian, translation of SAHLSA-50 from Spanish into Croatian could be an appropriate choice. There are no similar questionnaires to assess HL in Croatian to date.

Aim: To translate SAHLSA-50 into Croatian using a validated procedure and to adapt it linguistically, so that it could be used in the Croatian-speaking area to measure HL in the Croatian population.

Material and Methods: SAHLSA was developed for the Spanish-speaking population by Lee et al. It consists of 50 items and is based on multiple choice questions. A score between 0 and 37 suggests that the respondent has inadequate HL. After the protocolized translation process (translation/back-translation), the final version of the Croatian translation of SAHLSA-50 was produced, after we introduced several changes that do not represent a direct translation of the Spanish items. Most of the changes were made because of a cultural difference in common use or in the meaning of the term.

Conclusion: SAHLSA-50 was translated and adapted into Croatian using the standard translation/back-translation procedure. The Croatian version will now be available as an important part of epidemiological and clinical studies, as a useful tool for evaluating the levels of HL in the Croatian-speaking population. Validation of the translated Croatian version in practice would be the next step.

(Berlančić T, Kuharić M, Janković D, Milić J, Badak K, Zibar L. Croatian Translation and Linguistic Adaptation of the Short Assessment of Health Literacy for Spanish Adults (SAHLSA-50). SEEMEDJ 2020; 4(2); 121-128)

Received: Mar 1, 2020; revised version accepted: Jul 16, 2020; published: Nov 12, 2020

KEYWORDS: Croatian language, health literacy, SAHLSA-50, translation

Introduction

Health literacy (HL) is a combination of skills, including the ability to perform basic reading and numerical tasks required to function in a healthcare environment (1). The definition used by the Institute of Medicine states that it is the degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions (2). HL has become an important and fruitful area of research, mostly because of the relationship of limited HL with patients' knowledge, health behaviors, health outcomes and medical costs (3). Today, there are multiple different assessment tools for assessing HL (4, 5). Short Assessment of Health Literacy for Spanish Adults (SAHLSA-50) is an HL assessment tool containing 50 items designed to assess Spanish-speaking adults' ability to read and understand common medical terms (6). SAHLSA-50 was originally developed and validated in Spanish. It is an easy tool for researching HL in the general population (6). It has been validated for a Spanish-speaking country – Chile, and it was recognized as a useful tool for assessing HL in the adult Chilean population. Its use and incorporation into local research can be especially recommended in areas of education and health promotion (7). While the interest in HL was until recently mainly concentrated in the United States and Canada, it has become more internationalized over the past decade (8). Although the European Union produced less than a third of the global research on HL between 1991 and 2005 (9, 10), the importance of the issue has been increasingly recognized in European health policies. As a case in point, HL is explicitly mentioned as an area of priority action in the European Commission's Health Strategy 2008-2013 (11). We chose SAHLSA-50 as appropriate for the Croatian language because of its structure, which is intended for a language that is written phonetically (Spanish), unlike the English language. To the authors' knowledge, there are no similar HL questionnaires in the Croatian language to date.

Material and Methods

SAHLSA-50

SAHLSA-50 was developed for the Spanish-speaking population by Lee et al. (6), based on the Rapid Estimates of Adult Literacy in Medicine (REALM), known as the most easily administered tool for assessing HL in English. SAHLSA-50 consists of 50 items and is based on multiple choice questions (specifically three choices). Each item consists of a stem medical term and for each term, a respondent chooses between the two offered, potentially related terms, of which only one is right. The right term is called a key term and is in some way related to the stem medical term (synonym or descriptor). The other term is a distractor, which has nothing in common with the stem medical term (or at least in comparison with the key term). The third choice is "I do not know", which is an option for avoiding guessing the answer. For each correct related term chosen, the respondent is given a point. A score between 0 and 37 suggests that the respondent has inadequate HL (5). The authors of the original questionnaire approved the translation into Croatian language.

Procedure

Our translation was modeled after Francisco et al. (12) and steps taken followed those described by Wild et al. (13); they are shown in a flowchart (Figure 1). The first step included the first forward translation from Spanish into Croatian by two of the authors of this paper (two students of medicine with passive knowledge of the Spanish language) and one Spanish speaking physician, all Croats, with the help of a professor of the Spanish language (a native speaker of Croatian). In the second step, corrections were made by another professor of the Spanish language (a native speaker of Croatian). Back-translation was done by a fluent bilingual native speaker of Spanish living in Croatia, who is also a Spanish language teacher by profession. Finally, the translation team made the harmonization, including the modification for Croatian language.

The final version of the Croatian-language version of SAHLSA-50 was the result

Results

Table 1 shows SAHLSA-50 versions during the translation process, from the original version to the final translated version in Croatian. The final version of the Croatian SAHLSA-50 is available in Supplement 1. The majority of the items was translated directly and without modification. Several items underwent modification during the translation process. Most of the changes were done due to cultural or linguistic differences or divergence in meaning. For example, in item 10, "vigilance" ("budnost") in Croatian is better associated with "coffee" ("kava") than with the original "energy" ("energija"). In item 17, "small egg" ("jajašce") has been replaced by ovulation ("ovulacija"), because it was less confusing, since in Croatian an "egg" colloquially also means a "testicle". Another change was done because the authors wanted to achieve concordance with more common Croatian expressions in terms of the word category that is typically used. Thus, the adjective in item 22, "happy" ("sretan"), was replaced with "happiness" ("sreća"), which is a noun, and in item 23, the words "to lose", which are a verb in Croatian ("izgubiti"), replaced the word "loss", which is a noun in Croatian. Regarding miscarriage, it is more common to say that someone lost the baby ("izgubili bebu" in Croatian) and not that they experienced a "loss" ("izgubiti" vs "gubitak" in the record). Another difference was introduced in item 6, where we changed "meals", a plural noun ("obroci"), into a singular noun – "meal" ("jelo"), which is more common and less confusing ("obroci" has an additional different meaning besides "meals"). Through empirical medical knowledge it was concluded that in item 20, the word "irritation" ("iritacija") in Croatian usually relates to "inflammation" ("upala") and not "pain" ("bol"), as was the case in the original Spanish version. The final change was made with the word "convulsions" in item 49, which does not have a singular meaning in Croatian, while the word "epilepsija", meaning "epilepsy" (related to "convulsions"), is more common and does have

a recognizable related Croatian description in the word "padavica" (the term for a grand mal seizure characterized by falling down – as "pad" in "padavica"). The procedure of translation and back-translation went smoothly, without major differences between the attitudes, proposals or final solutions of the members of the translation team. The translation team agreed on the final version without lingering objections.

Discussion

We made the Croatian version of SAHLSA-50 in order to enable HL research in Croatia. The translation was made using standard validated translation procedures (12-14). Since the Spanish questionnaire was found to be more suitable than the English one, it was quite easy to translate the items. Croatian and Spanish have a simple way of pronouncing written text, where only one sound corresponds to each letter, and vice versa. Thus, being literate in these two languages (Spanish and Croatian) is supposed to be comparably difficult (or easy), unlike English, where each word is pronounced in a certain way, depending on many complicated rules and exceptions. However, we had to make several changes of certain Spanish words, since we wanted the questionnaire to be more appropriate for Croats in terms of recognizable content and category of words used. Similar changes in wording or scoring are commonly done to ensure cultural adaptation (15). We hope that the next step – the validation of the Croatian version of SAHLSA-50 in practice – will confirm the adequacy of our choice. The next step after this report is validation of the translated questionnaire in the Croatian-speaking population.

Spanish original			Forward translation			Corrections			Back translation			
1.	PRÓSTATA	glándula	circulación	PROSTATA	Žlijezda	Cirkulacija	PROSTATA	Žlijezda	Cirkulacija	LA PRÓSTATA	La glándula	La circulación
2.	EMPLEO	trabajo	educación	ZAPOSLENJE	Posao	Obrazovanje	ZAPOSLENJE	Posao	Obrazovanje	EL EMPLEO	El negocio	La educación
3.	MENSTRUAL	mensual	diario	MENSTRUALAN	Mjesečno	Dnevno	MENSTRUACIJSKO	Mjesečno	Dnevno	MENSTRUAL	Mensual	Diario
4.	GRIPE	sano	enfermo	GRIPA	Zdrav	Bolestan	GRIPA	Zdrav	Bolestan	LA INFLUENZA	Saludable	Enfermo
5.	AVISAR	medir	decir	UPOZORITI	Mjeriti	Reći	UPOZORITI	Mjeriti	Reći	ADVERTIR	Medir	Decir
6.	COMIDAS	cena	paseo	OBROCI	Večera	Šetnja	JELO	Večera	Šetnja	LA COMIDA	La cena	El paseo
7.	ALCOHOLISMO	adicción	recreo	ALKOHOLIZAM	Ovisnost	Rekreacija, odmor	ALKOHOLIZAM	Ovisnost	Rekreacija	EL ALCOHOLISMO	La adicción	La recreación
8.	GRASA	naranja	manteca	MAST, MASNOĆA	Naranča	Maslac, mast	MASNOĆA	Naranča	Maslac	LA GRASA	La naranja	La mantequilla
9.	ASMA	respirar	piel	ASTMA	Disati	Koža	ASTMA	Disati	Koža	LA ASMA	Respirar	La piel
10.	CAFÉINA	energía	agua	KOFEIN	Energija	Voda	KOFEIN	Budnost	Voda	LA CAFÉINA	La vigilancia	Agua
11.	OSTEOPOROSIS	hueso	músculo	OSTEOPOROZA	Kost	Mišić	OSTEOPOROZA	Kost	Mišić	OSTEOPOROSIS	El hueso	El músculo
12.	DEPRESIÓN	apetito	sentimientos	DEPRESIJA	Tek	Osjećaji	DEPRESIJA	Tek	Osjećaji	LA DEPRESIÓN	El apetito	Los sentimientos
13.	ESTREÑIMIENTO	bloqueado	suelto	OPSTIPACIJA	Zatvor, blokiran	Rastresit, nekompletan	KONSTIPACIJA	Zatvor	Proljev	EL ESTREÑIMIENTO	El estreñimiento	La diarrea
14.	EMBARAZO	parto	niñez	TRUDNOĆA	Porodaj	Djetinjstvo	TRUDNOĆA	Porodaj	Djetinjstvo	EL EMBARAZO	El parto	La infancia
15.	INCESTO	familia	vecinos	INCEST	Obitelj	Susjedi	INCEST	Obitelj	Susjed	EL INCESTO	La familia	El vecino
16.	PASTILLA	tableta	galleta	PILULA	Tableta	Dvopek, kolačić	PILULA	Tableta	Kolačić	LA PÍLDORA	La tableta	El pastelito
17.	TESTÍCULO	óvulo	esperma	TESTIS	Jajašce	Sperma	TESTIS	Ovulacija	Sperma	EL TESTÍCULO	La ovulación	El semen
18.	RECTAL	regadera	inodoro	REKTALAN	Kanta za poljevanje	WC, dezodorans	REKTALNO	Tuš	WC	RECTAL	La ducha	El inodoro
19.	OJO	oir	ver	OKO	Čuti	Vidjeti	OKO	Sluh	Vid	EL OJO	El oído	La vista

20. IRRITACIÓN	rígido	adolorido	IRITACIJA	Ukočen	Bolan	IRITACIJA	Ukočeno	Bolno	LA IRRITACIÓN	Tenso	Doliente
21. ABNORMAL	diferente	similar	ABNORMALNO	Drukčije	Slično	ABNORMALNO	Drukčije	Slično	ABNORMAL	Diferente	Similar
22. ESTRÉS	preocupación	feliz	STRES	Zabrinutost	Sretan	STRES	Zabrinutost	Sreća	EL ESTRÉS	La preocupación	La felicidad
23. ABORTO ESPONTÁNEO	pérdida	matrimonio	SPONTANI POBAČAJ	Gubitak	Brak	SPONTANI POBAČAJ	Izgubiti	Brak	EL ABORTO ESPONTÁNEO	Perder	El matrimonio
24. ICTERICIA	amarillo	blanco	IKTERUS, ŽUTICA	Žut	Bijel	IKTERUS	Žuto	Bijelo	LA ICTERICIA	Amarillo	Blanco
25. PAPANICOLAOU	prueba	vacuna	PAPANICOLAOU	Test	Kozice	PAPANICOLAOU	Test	Cjepivo	PAPANICOLAOU	La prueba	La vacuna
26. IMPÉTIGO	pelo	piel	OSIP	Dlaka	Koža	OSIP	Dlaka	Koža	LA ERUPCIÓN	El cabello	La piel
27. INDICADO	instrucción	decisión	INDICIRAN, OZNAČEN	Uputa	Odluka	NAZNAKA	Uputa	Odluka	LA INDICACIÓN	Instrucciones	La decisión
28. ATAQUE	herida	sano	NAPAD	Ozljeda	Zdrav	NAPAD	Ozlijeđen	Zdrav	EL ATAQUE	Lesionado	Sano
29. MENOPAUSIA	señoras	niñas	MENOPAUZA	Gospođe	Djeca	MENOPAUZA	Gospođe	Djevojke	LA MENOPAUSIA	Señoras	Chicas
30. APÉNDICE	rascar	dolor	SLIJEPO CRIJEVO	Grepsti	Bol	SLIJEPO CRIJEVO	Ogrebotina	Bol	EL APÉNDICE	El rasguño	El dolor
31. COMPORTAMIENTO	pensamiento	conducta	PONAŠANJE	Misao	Vladanje	PONAŠANJE	Misao	Vladanje	EL COMPORTAMIENTO	El pensamiento	La conducta
32. NUTRICIÓN	saludable	gaseosa	PREHRANA	Zdrav	Gazirano piće	PREHRANA	Zdravlje	Gazirano piće	LA NUTRICIÓN	La salud	Las bebidas carbonatadas
33. DIABETES	azúcar	sal	DIJABETES	Šećer	Sol	DIJABETES	Šećer	Sol	LA DIABETES	El azúcar	El sal
34. SÍFILIS	anticonceptivo	condón	SIFILIS	Kontraceptivi	Kondom	SIFILIS	Kontraceptivi	Kondom	LA SÍFILIS	Anticonceptivos	El condón
35. INFLAMATORIO	hinchazón	sudor	UPALJEN	Oteklina	Znoj	UPALA	Oteklina	Znoj	LA INFLAMACIÓN	El hinchazón	El sudor
36. HEMORROIDES	venas	corazón	HEMORROIDI	Vene	Srce	HEMORROIDI	Vene	Srce	LAS HEMORROIDES	Las venas	El corazón
37. HERPES	aire	sexo	HERPES	Zrak	Seks, spol	HERPES	Zrak	Seks	HERPES	El aire	El sexo

38. ALÉRGICO	resistencia	reacción	ALERGIČAN	Otpornost	Reakcija	ALERGIJA	Otpornost	Reakcija	LA ALERGIA	La resistencia	La reacción
39. RINON	orina	fiebre	BUBREG	Urin	Groznica	BUBREG	Mokraća	Vrućica	EL RINON	La orina	La fiebre
40. CALORIAS	alimentos	vitaminas	KALORIJE	Hrana	Vitamini	KALORIJE	Hrana	Vitamini	LAS CALORIAS	La comida	Las vitaminas
41. MEDICAMENTO	instrumento	tratamiento	LIJEK	Instrument	Terapija	LIJEK	Instrument	Terapija	LA MEDICINA	El instrumento	La terapia
42. ANEMIA	sangre	nervio	ANEMIJA	Krv	Živac	ANEMIJA	Krv	Živac	LA ANEMIA	La sangre	El nervio
43. INTESTINOS	digestión	sudor	CRIJEVA	Probava	Znoj	CRIJEVA	Probava	Znoj	LOS INTESTINOS	La digestión	El sudor
44. POTASIO	mineral	proteína	KALIJ	Mineral	Protein	KALIJ	Mineral	Protein	EL POTASIO	El mineral	La proteína
45. COLITIS	intestinal	vejiga	KOLITIS	Crijevo	Mokraćni mjehur	KOLITIS	Crijeva	Mjehur	EL COLITIS	Los intestinos	La vejiga
46. OBESIDAD	peso	altura	PRETILOST	Težina	Visina	PRETILOST	Težina	Visina	LA OBESIDAD	El peso	La altura
47. HEPATITIS	pulmón	hígado	HEPATITIS	Pluća	Jetra	HEPATITIS	Pluća	Jetra	LA HEPATITIS	Los pulmones	El hígado
48. VESÍCULA BILIAR	arteria	órgano	ŽUČNI MJEHUR	Arterija	Organ	ŽUČNI MJEHUR	Arterija	Organ	LA VESÍCULA BILIAR	La arteria	El órgano
49. CONVULSIONES	mareado	tranquilo	GRČEVI, KONVULZIJE	Bolestan od morske bolesti	Miran	EPILEPSIJA	Padavica	Smirenost	LA EPILEPSIA	La epilepsia	La calma
50. ARTRITIS	estómago	articulación	ARTRITIS	Želudac	Zglob	ARTRITIS	Želudac	Zglob	LA ARTRITIS	El estómago	La articulación

Conclusion

The translation of SAHLSA-50 from Spanish into Croatian was done using the standard validated procedure. The terms were modified in only several items, in order to adapt the Croatian version to the most similar sense in Croatian. The Croatian version of SAHLSA-50 is to be used in epidemiological and clinical studies as a useful tool for evaluating the levels of HL in the population. It should simplify future communication on both professional and non-professional sides.

References

1. Ad Hoc Committee on Health Literacy for council on Scientific Affairs, Health literacy: report of council on scientific Affairs, JAMA, 1999; 281:552-557
2. Institute of medicine, Health literacy: A Prescription to End Confusion, Washington DC: National Academies Press, 2004
3. Baker DW. The Meaning and the measurement of Health Literacy, J Gen Intern Med. 2006; 21(8):878–883.
4. Parker, Ruth M, Baker, David W. Williams MV, Nurss J R. The test of functional health literacy in adults, Journal of General Internal Medicine, 1995; 10:537-541.
5. Liu H, Zeng H, Shen Y, Zhang F, Sharma M, Lai W, Zhao Y, Tao G, Yuan J, Zhao Y. Assessment Tools for Health Literacy among the General Population: A Systematic Review. Int. J. Environ. Res. Public Health. 2018; 15:1711.
6. Lee, S.-YD, Bender DE, Ruiz RE, Cho YI. Development of an easy-to-use Spanish. Health literacy test, Health Serv Res 2006, 41:1392-412
7. Monsalves MJ, Mañalich J, Fuentes E. Validation of the short assessment of health literacy for spanish-speaking adults test in Chile, Revista medic de Chile, 2016; 144(5):604-10.
8. Paasche-Orlow MK. Bridging the international divide for health literacy research. Patient Educ Couns. 2009; 75:293-294. doi:10.1016/j.pec.2009.05.001.
9. Kondilis BK, Soteriades ES, Falagas ME. Health literacy research in Europe: a snapshot. Eur J Public Health. 2006; 16(1):113-113.
10. Kondilis BK, Kiriaze IJ, Athanasoulia AP, Falagas ME. Mapping health literacy research in the European Union: a bibliometric analysis. PLoS One. 2008 Jun 25;3(6):e2519. doi:10.1371/journal.pone.00025192008
11. European Commission: Together for health: a strategic approach for the EU 2008-2013. Com(2007) 630 final.
12. Oliveira ABM, Epifano K, Mathur S, Carvalho FG, Scop M, Carissimi A, Francisco AP, Garay LLS, Adan, Hidalgo MP, Benicio N Frey. Validation of the English version of the Mood Rhythm Instrument. BMC Psychol. 2020 Apr 17;8(1):35. doi:10.1186/s40359-020-00397-2.
13. Wild D, Grove A, Martin M, Eremenco S, McElroy S, Verjee-Lorenz A, Erikson P, ISPOR Task Force for Translation and Cultural Adaptation. Principles of Good practice for the translation and cultural adaptation process for Patient-Reported Outcomes (PRO) measures: report of the ISPOR task force for translation and cultural adaptation. Value Health. 2005;8(2):94-104. doi:10.1111/j.1524-4733.2005.04054.x.

Acknowledgement. The authors are grateful for the efforts of prof. Ljerka Koproščec (Spanish professor number 1), prof. Aleksandra Rukonić (Spanish professor number 2), prof. Martina Pongrac Parobek (Spanish native speaker) and Karin Zibar Tomšić MD, PhD (Spanish-speaking physician, member of the translation team) who contributed their valuable knowledge and help in the translation and adaptation of SAHLSA-50.

Disclosure

Funding. No specific funding was received for this study.

Competing interests. None to declare.¹

14. Milić J, Škrlec I, Milić Vranješ I, Matic M, Sertić D, Heffer M. The Croatian translation of the Horne and Östberg Morningness-Eveningness Questionnaire with a brief review of circadian typology. *Southeastern European Medical Journal*. 2018; 2(1):1-11.

15. Adan A, Almirall H. Horne & Östberg morningness-eveningness questionnaire: A reduced scale. *Personality and Individual Differences*. 1991; 12 (3): 241-253.

Author contribution. Acquisition of data: Berlančić T, Kuharić M, Janković D, Milić J, Badak K, Zibar L
Administrative, technical or logistic support: Berlančić T, Kuharić M, Janković D, Milić J, Badak K, Zibar L
Analysis and interpretation of data: Berlančić T, Kuharić M, Janković D, Milić J, Badak K, Zibar L
Conception and design: Berlančić T, Kuharić M, Janković D, Milić J, Badak K, Zibar L

Critical revision of the article for important intellectual content: Berlančić T, Kuharić M, Janković D, Milić J, Badak K, Zibar L
Drafting of the article: Berlančić T, Kuharić M, Janković D, Zibar L
Final approval of the article: Berlančić T, Kuharić M, Janković D, Milić J, Badak K, Zibar L
Guarantor of the study: Berlančić T, Zibar L
Provision of study materials or patients: Berlančić T, Badak K, Zibar L