STUDY PROTOCOL

REVISED Teaching and learning how to make informed health choices: Protocol for a context analysis in Spanish primary schools [version 2; peer review: 2 approved]

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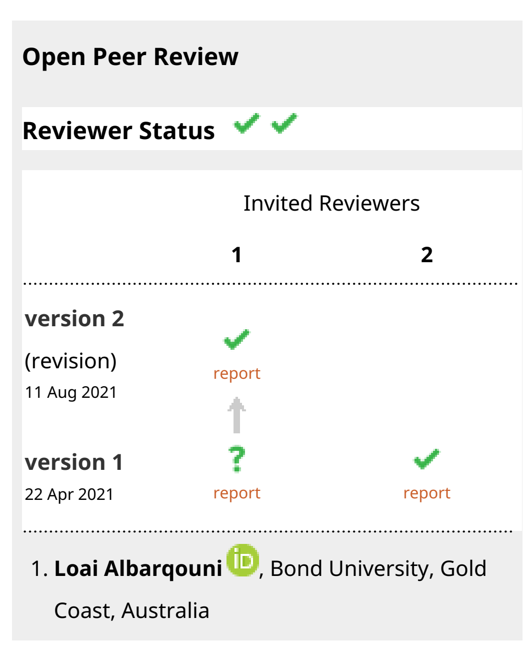

Abstract

Introduction

The Informed Health Choices (IHC) project developed learning resources to teach primary school children (10 to 12-year-olds) to assess treatment claims and make informed health choices. The aim of our study is to explore the educational context for teaching and learning critical thinking about health in Spanish primary schools.

Methods

During the 2020-2021 school year, we will conduct 1) a systematic assessment of educational documents and resources, and 2) semi-structured interviews with key education and health stakeholders. In the systematic assessment of educational documents and resources, we will include state and autonomous communities' curriculums, school educational projects, and commonly used textbooks and other health teaching materials. In the semi-structured interviews, we will

involve education and health policy makers, developers of learning resources, developers of health promotion and educational interventions, head teachers, teachers, families, and paediatric primary care providers. We will design and pilot a data extraction form and a semi-structured interview guide to collect the data. We will perform a quantitative and a qualitative analysis of the data to explore how critical thinking about health is being taught and learned in Spanish primary schools.

Conclusion
We will identify opportunities for and barriers to teaching and learning critical thinking about health in Spanish primary schools. We will formulate recommendations—for both practice and research purposes—on how to use, adapt (if needed), and implement the IHC resources in this context.

Keywords
Children's health, critical thinking, evidence-based medicine, health education, health promotion, public health.

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Any reports and responses or comments on the article can be found at the end of the article.

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REVISED Amendments from Version 1

We would like to thank the reviewers for their comments on our manuscript. In this new version, we have reviewed and modified the text to improve the clarity and understanding of the manuscript. The main changes have been: 1) clarify the examples related to the COVID-19 pandemic in the Introduction section, 2) specify the participants in the Methods section, and 3) improve the description of the qualitative analysis in the Methods section.

Any further responses from the reviewers can be found at the end of the article

Introduction

People are constantly exposed to information about health. When people use unreliable information, they may harm their health or not consume their resources efficiently.[1] For this reason, people need to acquire health literacy (obtain, process, and understand health information) and think critically about health (use appropriate criteria to make judgements about health information).[2-4] Therefore, they can assess the trustworthiness of health claims and make informed health decisions.

The Informed Health Choices project

The Informed Health Choices (IHC) project aims to teach people to assess treatment claims and make informed health decisions.[5] As part of the IHC project, the IHC Working Group developed: 1) the IHC Key Concepts (list of concepts that individuals need to understand and apply when assessing claims about treatment effects and making health choices),[6] 2) the IHC resources (learning resources to teach children and their families to understand and apply some of the IHC key concepts),[7-9] and 3) the CLAIM Evaluation Tools (database with questions to assess people's understanding and ability to apply the IHC key concepts).[10]

The IHC Working Group evaluated the effect of the IHC resources in a cluster randomised trial in Ugandan primary schools.[11] The study showed that the children (10 to 12-year-olds) who used the IHC resources improved their ability to assess treatment claims and retained this knowledge one year later.[11,12]

The IHC project has acquired greater relevance during the ongoing COVID-19 pandemic, considering that the current health situation is aggravated by an infodemic. The World Health Organization (WHO) defines "infodemic" as an excessive amount of information, in some cases correct and in others not, which makes it difficult for people to find reliable sources and guidance when they need them.[13] In this context, it is vital to teach people to critically assess health information (e.g., how to assess the reliability of the claim 'If you wear a face mask for a longtime, you may have hypoxia') and to make informed health decisions (e.g., how to decide whether to vaccinate against covid-19).

Spanish education system

Spain is organized territorially into self-governing communities (17 autonomous communities and two autonomous cities), provinces, and municipalities. The Spanish education system follows a decentralised model where educational responsibilities are shared among all levels of government: state general authority (Ministry of Education), autonomous communities (Departments of Education), local authorities (Education Councils), and educational institutions (Table 1).[14,15]

The legislative framework governing the Spanish education system is based on the Organic Law of Education, of 2006 (*Ley Orgánica de Educación* - LOE), and the Organic Law for the Improvement of the Educational Quality, of 2013 (*Ley Orgánica para la Mejora de la Calidad Educativa* - LOMCE).[16,17] Currently there is a new Draft Organic Law of Modification of the LOE, of 2020 (*Ley Orgánica de modificación de la LOE* - LOMLOE).[18] The Royal Decrees regulate the core curriculum of primary education, compulsory secondary education (*Educación Secundaria Obligatoria*, ESO), and upper secondary education (*Bachillerato)*.[19,20]

The Spanish education system is divided into four levels: 1) pre-primary education, organised into two cycles of three years (0-3 and 3-6 years old); 2) primary education (6-12 years old); 3) secondary education, organised into two cycles: compulsory secondary education (12-16 years old), and upper secondary education (16-18 years old) or vocational training; and 4) higher education, comprised of university or professional studies.[21] Basic education (primary and compulsory secondary education) is mandatory and free in schools supported with public funds.[14]

In Spain there are three different types of schools according to their ownership and source of funding: 1) public schools, owned by the education authority and publicly-funded (Department of Education); 2) publicly-funded private schools, privately owned (educational institution) but publicly-funded (Departments of Education) through a regime of

Table 1. Distribution of responsibilities between levels of government in Spanish education system.

Decision-making bodies	Distribution of responsibilities	Design of the basic curriculum
Ministry of Education and Vocational Training (MEFP)	- General organisation of the education system - Regulation of academic and professional titles, and basic rules for the development of the right to education - Establishment of the general plan for education - Evaluation and innovation of the learning integrated into the education system - Educational inspection - Design, planning and management of scholarships and financial support - Promotion of equality, non-discrimination, and universal accessibility policies within the scope of its powers - Management of the teaching staff policy and development of the foundations for the legal regime of public teaching service - Exercise of the functions of National Authority for the Erasmus+ Programme of the European Commission	- Establish the common contents and assessable learning standards of core subjects - Establish the minimum number of hours for core subjects (not be less than 50% of the total number of teaching hours generally established by each education authority) - Establish the assessable learning standards of specific subjects - Design the final evaluation for primary education, compulsory secondary education, and upper secondary education - Recognise the certificates awarded corresponding to regulated studies - Establish mixed curricula of the Spanish education system and other education systems - Promote actions to enhance the quality of educational institutions
Departments of Education of the autonomous communities	- Assume the regulations developed by the State rules - Assume the executive and administrative competences for managing the education system in the territory - Promote and strengthen education school autonomy - Evaluate school results and implement action plans	- Complement the contents of core subjects - Establish the contents of specific subjects and freely-structured subjects - Conduct methodological recommendations to educational institutions within the territory - Establish the teaching hours for all the subjects, with the exception of core subjects - Complement the evaluation criteria for the stage assessment - Establish assessment criteria and learning standards of the free subjects for the stage assessment - Expedite the certificates awarded corresponding to regulated studies - Promote actions to enhance the quality of education educational institutions
Education Councils	- Assume functions in areas that have a direct local impact	Without any responsibility on the design of the basic curriculum
Educational institutions	- Autonomy to develop, approve, and execute school educational projects, management projects, and organizational and functioning rules of the school.	- Complement the contents of all subjects on the basis of educational provision - Design and implement their own teaching and learning methods - Establish the number of hours for the different subjects

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agreements; and 3) private schools, privately owned and privately-funded (educational institution).[14] In the school year 2020-2021, there are 14,151 schools that provide primary education; 75% public schools, 21% publicly-funded private schools, and 4% private schools.[22]

The public educational expenditure in 2018 was 4.23% of the GDP (Gross Domestic Product), which was below the EU average (4.6%).[23,24] The distribution of public expenditure was mainly among pre-primary and primary education (35%), and secondary education and vocational training (29.3%).[24]

Health promotion and educational interventions in Spanish schools

Health promotion interventions (interventions to enable people to increase control over and to improve their health) and health education interventions (interventions to improve people's health literacy) in schools have shown to improve the health of children and young people.[25-28]

Health promotion and education in schools requires intersectoral collaboration and partnerships between educational and health institutions.[29] In 1989, the Spanish Ministry of Education and the Ministry of Health signed a collaboration agreement to encourage the integration of health promotion and education in schools.[30-33] In 1993, the country joined to European Network of Health Promoting Schools (ENHPS), which aims to integrate health promotion into every aspect of the curriculum, introduce healthy programmes and practices into schools' daily routines, improve working conditions, and foster better relations both within the schools and between them and their local communities.[33,34]

The Spanish LOE educational law of 2006 defined two competences, "Knowledge and interaction with the physical world" and "Social and citizenship" that included health promotion and education (essential knowledge, skills, and attitudes for participating in society) directly and indirectly, respectively.[35] However, the current Spanish LOMCE educational law of 2013 includes health competencies in a transversal way, and its contents are distributed among several knowledge areas (Biology, Physical Education, and Ethical values/Education for citizenship).[35]

In Spain, the schools have the ultimate responsibility to integrate health promotion and educational interventions into their educational projects.[32] This means to foster the value of health among all different members of the school community, throughout the school year, in order to facilitate healthy behaviours, promote autonomous decision-making and personal choices of healthy lifestyles, and establish long-term positive attitudes towards health care.[32]

Contextualization of the Informed Health Choices resources in Spanish primary schools

The contextualization of the IHC resources comprises activities to explore how these resources can be used in a different context from the one that they were originally designed for (primary schools in Uganda). These activities may include, for example: 1) context analysis to explore conditions for teaching critical thinking about health, 2) translation of the IHC resources, 3) pilot testing of the IHC resources, 4) adaptation of the IHC resources (if needed), 5) assessment of the effects of using the IHC resources, or 6) translation and validation of the CLAIM Evaluation Tools.[36-38]

The IHC resources have already been translated into Spanish (Figure 1), and a pilot study is being conducted in schools in Barcelona to explore the students and teachers' experience when using the IHC resources.[39-42] The next step is to analyse the educational context to ensure the relevance and appropriateness of the IHC primary school resources for Spanish primary schools.

Objectives

Primary objective

To explore the educational context for teaching and learning critical thinking about health in Spanish primary schools.

Secondary objectives

- To identify and describe relevant educational documents and resources that support teaching and learning of critical thinking about health, and that are available in Spanish primary schools.
- To explore the experience and perspective of key education and health stakeholders regarding teaching and learning critical thinking about health in Spanish primary schools.
- To identify factors that can potentially impact the implementation of the IHC resources in Spanish primary schools.

Methods

During the 2020-2021 school year, we will conduct 1) a systematic assessment of educational documents and resources, and 2) semi-structured interviews with key education and health stakeholders; based on methods proposed by the IHC

Figure 1. Informed Health Choices learning resources for primary school children (Spanish translation).

Working Group.[43] Table 2 describes the different steps of the study. We will report qualitative findings using the COREQ (Consolidated criteria for reporting qualitative research) checklist.[44]

Systematic assessment of educational documents and resources

Eligibility criteria

We will include educational documents and resources (state and autonomous communities curriculums, school educational projects, textbooks and other health teaching materials) that cover aspects related to critical thinking about health (critical thinking in general, health in general, and critical thinking specifically about health), focused on primary education, available in the Spanish context, written in any official or co-official language of the country (Spanish, Catalan, Galician, Valencian, or Basque), and currently used during 2020-2021 school year.

Information sources and search strategy

To identify the state and autonomous communities' curriculums, we will conduct a manual search on the website of the Spanish Ministry of Education and Vocational Training,[45] as well as on the websites of the corresponding departments of the autonomous communities.

To identify school educational projects, we will select a convenience sample of schools from the Spanish Ministry of Education registry.[22] We will aim for representativeness of schools based on geographic area (autonomous communities), and source of funding of schools (public, publicly-funded private, or private) (Table 3). We expect to include a sample of approximately 34 schools. We will contact, inform, and invite head teachers from selected schools (invitation

Table 2. Tasks of the study.

Tasks		Participants	Activities
1. Protocol			
	1. 1. Development of the protocol	Researchers	- Develop the study protocol - Request the approval of Ethics Committee
	1.2. Publication of the protocol	Researchers	- Submit the manuscript to a peer-reviewed journal
2. Systematic assessment of educational documents and resources			
	2.1. Documents identification	Researchers Head teachers	- Identify the state and autonomous communities' curriculums - Identify school educational projects (approx. 17) - Identify commonly used textbooks and other health teaching materials
	2.2. Documents selection	Researchers	- Screen titles and full texts - Cross-check the selection
	2.3. Data collection - Data extraction form	Researchers	- Design, pilot, and refine a data extraction form - Data collection - Cross-check the data
3. Semi-structured interviews with key education and health stakeholders			
	3.1. Participants identification	Researchers	- Identify key education and health stakeholders (approx. 36) - Contact, inform, and invite potential participants - Request written informed consent and declare potential conflicts of interest
	3.2. Data collection - Semi-structured interviews	Researchers Key education and health stakeholders	- Design, pilot, and refine a semi-structured interview guide - Develop a training video to present the IHC project - Conduct the interviews - Audio record and transcribe interviews - Send interview transcripts for approval - Anonymise the data
4. Data analysis			
	4.1. Quantitative analysis	Researchers	- Descriptive analysis
	4.2. Qualitative analysis	Researchers	- Descriptive thematic synthesis - Map IHC Key Concepts - Cross-check the analysis - Summarise the data
5 Dissemination of the results			
	5.1. Publication in a peer-reviewed journal	Researchers	- Draft the manuscript - Submit the manuscript to a peer-reviewed journal
	5.2. Online communication	Researchers	- Online communication via related websites, electronic bulletins, and social media
	5.3. Tailored presentations	Researchers	- Tailor presentations for key education and health stakeholders

e-mail, first e-mail reminder, second e-mail reminder, and telephone reminder) (*Extended data 1*[46]). If a school does not respond or does not agree to participate, we will select the next eligible school from the registry.

To identify commonly used textbooks and other health teaching materials, we will ask head teachers and teachers from the participating schools for suggestions.

Document selection

One author will screen titles and full texts to identify potentially eligible documents for inclusion. A second author will cross-check the selection. The two authors will resolve potential disagreements by discussion, and if necessary, by consulting a third author.

Table 3. Stratified sampling strategy.

Strata	Expected sample of schools	Expected sample of participants
Strata 1 - Geographic area (autonomous communities)		
Andalucía	2	2
Aragón	2	2
Principado de Asturias	2	2
Illes Balears	2	2
Canarias	2	2
Cantabria	2	2
Castilla y León	2	2
Castilla-La Mancha	2	2
Cataluña	2	2
Comunitat Valenciana	2	2
Extremadura	2	2
Galicia	2	2
Comunidad de Madrid	2	2
Región de Murcia	2	2
Comunidad Foral de Navarra	2	2
País Vasco	2	2
La Rioja	2	2
Total	**34**	**34**
Strata 2- Source of funding of school		
Public schools	17	6*
Publicly-funded private schools or private schools	17	6*
Total	**34**	**12***
Strata 3 - Participant profile		
System level		
Education policy makers	-	4
Health policy makers	-	4
Developers of learning resources	-	4
Developers of health promotion and educational interventions	-	4
School level		
Head teachers	-	4
Teachers	-	4
Families	-	4
Health care level		
Physicians	-	4
Nurse practitioners	-	4
Total		**36**

*We will consider strata 2 only for head teachers, teachers, and families' profiles.

Data collection

We will design, pilot and refine a data extraction form that will include the following information: 1) document identification, 2) description of the document, 3) description of the content related to critical thinking, health, and critical thinking about health, and 4) mapping of the content with IHC Key Concepts (if applicable) (*Extended data 2*[46]).

One author will perform the data collection, and a second author will cross-check the data. The two authors will resolve potential disagreements by discussion, and if necessary, by consulting a third author.

Semi-structured interviews with key education and health stakeholders

Participants

To cover key education and health stakeholders, we will involve education and health policy makers, developers of learning resources, developers of health promotion and educational interventions, head teachers, teachers, families (without including children), and paediatric primary care providers (physicians and nurse practitioners). We will identify participants from 1) articles included in the systematic assessment of educational documents and resources, 2) participating schools included in the systematic assessment, and 3) expert colleagues. We will aim for representativeness of participants based on geographic area (autonomous communities), source of funding of schools (public, publicly-funded private, or private), and profile of participants (education and health policy makers, developers of learning resources, developers of health promotion and educational interventions, head teachers, teachers, families, physicians, and nurse practitioners) (Table 3). We expect to include a sample of approximately 36 participants, although we will continue recruiting and collecting data until information becomes repetitive and no new information emerges (sampling saturation).[47,48]

We will contact, inform, and invite potential participants (invitation e-mail, first e-mail reminder, second e-mail reminder, and telephone reminder) (*Extended data 1*[46]). Those who agree to participate will be asked to complete a written informed consent (*Extended data 3*[46]) and declare potential conflicts of interest.[49]

Data collection

We will design, pilot and refine a semi-structured interview guide that will include the following information: 1) participant identification, 2) description of the participant (age, gender, profile, working institution, and autonomous community), 3) participant's experience on how critical thinking about health is being taught and learned in Spanish primary schools (curriculum, subjects, educational documents and resources, and evaluation), 4) participant's perspective on the relevance of teaching and learning critical thinking about health in Spanish primary schools (relevance in the educational context), 5) participant's perspective on how to implement IHC resources in Spanish primary schools (potential facilitators and barriers[50]) (*Extended data 4*[46]).

Before each interview, we will introduce the participants to the IHC project, the IHC resources, and the pilot study in Barcelona with a training video.[5,7-9,42] After that, one trained researcher will conduct the interviews face to face or via teleconference. Each interview will last approximately one hour and will be audio recorded and transcribed. The interview transcripts will be sent to participants for approval before conducting the data analysis.

Data analysis

Quantitative analysis

We will perform a descriptive analysis of the categorical variables (absolute and relative frequencies), and the continuous variables (median and range) (*Extended data 5*[46]).

Qualitative analysis

We will analyse and synthesise qualitative data using a thematic synthesis. We will register in an Excel sheet quotes from: 1) educational documents and resources, and 2) semi-structured interviews. We will identify themes related to the educational context applying a three-step descriptive thematic synthesis: 1) codifying extracted quotes, 2) proposing descriptive themes, and 3) identifying main themes based on conceptual similarities within and across quotes. We will describe the extent of duplication and overlapping themes within and across documents. If applicable, we will map how themes reflect the IHC Key Concepts framework through a data matrix (including documents as rows and the IHC Key Concepts as columns).[6] One

author will codify extracted quotes and propose descriptive themes. Two authors will select the descriptive themes, identify main themes, and assess the overlap with the IHC Key Concepts guided by iterative discussion, and if necessary, by consulting a third author. The authors' team will approve the final synthesis of findings.

Finally, using the summarised data, we will explore the nature of the phenomena (how critical thinking about health is being taught and learned in Spanish primary schools), and the possible explanations for the findings. Furthermore, we will deepen our understanding of the opportunities for and barriers to teaching and learning critical thinking in general, about health in general, and critical thinking specifically about health.

Dissemination of the results
The dissemination activities of the study results will include: 1) publication in a peer-reviewed journal; 2) online communication via related websites, electronic bulletins, and social media; and 3) tailored presentations for key education and health stakeholders.

Ethical considerations
The study protocol has obtained an approval exemption (does not include patients, biological specimens, or clinical data) from the Ethics Committee of the Hospital de la Santa Creu i Sant Pau (Barcelona, Spain).

We will inform participants about the study and request their written informed consent and declaration of potential conflicts of interest. We will not collect any sensitive personal data (racial or ethnic origin, political opinions, religious or philosophical beliefs, trade-union membership, genetic data, biometric data, health-related data, or data concerning a person's sex life or sexual orientation).[52] We will anonymise personal data, coding the name of the participants and the institutions. Only researchers will have access to the identifier list (with the code linked to personal data). Personal data will be deleted five years after the study has concluded.

Study status
Figure 2 is a Gantt chart illustrating the schedule of the context analysis. To date, we started the systematic assessment of relevant education documents and resources.

Discussion
People need to learn to think critically about health and make informed health decisions. The IHC project proposed to start this challenge by teaching children and using the IHC resources, which were specifically designed and evaluated to achieve this goal. The next step is to support the dissemination of the IHC resources, thus help to empower people around the world to make well-informed decisions.

Our study in the context of current knowledge
The context analysis is an important step to complete before developing innovative health promotion and educational interventions in schools, such as the IHC resources. This analysis can identify factors that might affect scaling up at a stage that is early enough to inform the development of the interventions.

During the trial to evaluate the effects of the IHC resources in primary schools in Uganda, the IHC Working Group conducted a process evaluation to identify factors affecting their implementation.[11,49] This study showed that participants

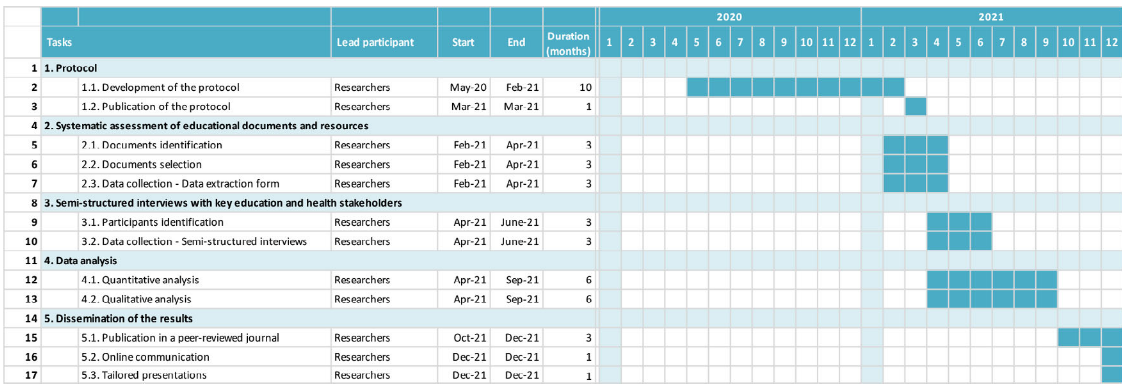

Figure 2. Gantt chart of the study.

valued the IHC resources, although they highlighted the need to incorporate the lessons into the national curriculum to scale up their use.[49] They also found that the cost of the IHC resources was a critical barrier to scale up their use.[49] After this experience, they conducted a context analysis before developing the IHC resources for secondary schools.[43] Therefore, they are designing the resources considering relevant factors from the context of reference.[53]

Lund *et al*. 2018 conducted a market analysis to explore the demand, adequacy for the curriculum, and market conditions for introducing the IHC resources in Norwegian primary and secondary schools.[54] They analysed key documents and interviewed teachers and other key stakeholders.[54] One of the primary findings was that teaching critical thinking about health fits into the curriculum and should be prioritised; however, classroom time is limited and critical thinking about health cuts across subjects.[54] The teachers who participated pointed out that they are empowered to decide what to teach, how, and with what learning resources.[54] Further work is needed to adapt the IHC resources (e.g., use as little classroom time as possible, facilitate collaboration across subjects and grades, and engage teachers in the design) and scale up its use in Norwegian primary and secondary schools.

Strengths and limitations of the study

Our proposal has several strengths. We are building on previous studies and using multiple methods and triangulation to ensure the trustworthiness of our findings.[43,54] Furthermore, this study is part of a comprehensive project of contextualization activities that we have completed (translation of the IHC resources) or that are ongoing (pilot study) to explore how Spanish primary schools can benefit from the IHC resources.[39-42]

Our proposal also has some limitations. We will face numerous challenges, as we will have to consider different educational contexts and languages (autonomous communities) within the same country (Spain). In addition, the ongoing COVID-19 pandemic may be a significant barrier for the recruitment of participants.

Implications for practice and research

We will formulate recommendations—for both practice and research purposes—on how to use, adapt (if needed), and implement the IHC resources in Spanish primary schools. The findings of the contextualization activities will inform the design of a cluster randomised trial to determine the effectiveness of the IHC resources in this context prior to scaling up their use.

Data availability

Underlying data

No data are associated with this article.

Extended data

Figshare: IHC@BCNContextAnalysis. https://doi.org/10.6084/m9.figshare.14152880.[46]

This project contains the following extended data:

- Extended data 1 – Information for schools and participants (documents available in Spanish)
- Extended data 2 – Data extraction form for educational documents and resources
- Extended data 3 – Written informed consent form for participants
- Extended data 4 – Guide for the semi-structured interviews
- Extended data 5 – Descriptive-quantitative variables of the study

Data are available under the terms of the Creative Commons Attribution 4.0 International license (CC-BY 4.0).

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References

1. Austvoll-Dahlgren A, Oxman AD, Chalmers I, *et al.*: **Key concepts that people need to understand to assess claims about treatment effects.** *J Evid Based Med.* 2015; **8**(3): 112–25. PubMed Abstract | Publisher Full Text
2. Oxman AD, Martínez García L: **Comparison of the Informed Health Choices Key Concepts Framework to other frameworks relevant to teaching and learning how to think critically about health claims and choices: a systematic review [version 1; peer review: awaiting peer review].** *F1000Res.* 2020; **9**: 164. PubMed Abstract | Publisher Full Text | Free Full Text
3. Sørensen K, Van den Broucke S, Fullam J, *et al.*: **Health literacy and public health: a systematic review and integration of definitions and models.** *BMC Public Health.* 2012; **12**: 80. PubMed Abstract | Publisher Full Text | Free Full Text
4. World Health Organization:*Health literacy. The solid facts.* Geneva: World Health Organization; 2013.
5. **Informed Health Choices, Learning To Think Critically About Health Choices.**2020. [Accessed 1 January 2021] Reference Source
6. Oxman AD, Chalmers I, Austvoll-Dahlgren A, *et al.*: **Key Concepts for assessing claims about treatment effects and making well-informed treatment choices [version 2; peer review: 3 approved].** *F1000Res.* 2019; **7**: 1784. PubMed Abstract | Publisher Full Text | Free Full Text
7. The Informed Health Choices Group: **The Health Choices Book: Learning to think carefully about treatments.** *A health science book for primary school children.* Oslo: Norwegian Institute of Public Health; 2016. PubMed Abstract | Publisher Full Text
8. The Informed Health Choices Group: **The Health Choices Book: Learning to think carefully about treatments. A health science book for primary school children.** *EXERCISE BOOK.* Oslo: Norwegian Institute of Public Health 2016.
9. The Informed Health Choices Group: **Teachers' Guide for The Health Choices Book: Learning to think carefully about treatments. A health science book for primary school children.** Oslo: Norwegian Institute of Public Health 2016.
10. Austvoll-Dahlgren A, Semakula D, Nsangi A, *et al.*: **Measuring ability to assess claims about treatment effects: the development of the 'Claim Evaluation Tools'.** *BMJ Open.* 2017; **7**(5): e013184. PubMed Abstract | Publisher Full Text | Free Full Text
11. Nsangi A, Semakula D, Oxman AD, *et al.*: **Effects of the Informed Health Choices primary school intervention on the ability of children in Uganda to assess the reliability of claims about treatment effects: a cluster-randomised controlled trial.** *Lancet.* 2017; **390**(10092): 374–388. PubMed Abstract | Publisher Full Text
12. Nsangi A, Semakula D, Oxman AD, *et al.*: **Effects of the Informed Health Choices primary school intervention on the ability of children in Uganda to assess the reliability of claims about treatment effects, 1-year follow-up: a cluster randomised trial.** *Trials.* 2020; **21**(1): 27. PubMed Abstract | Publisher Full Text | Free Full Text
13. World Health Organization: **An ad hoc WHO technical consultation managing the COVID-19 infodemic: call for action, 7-8 April 2020.**Geneva: World Health Organization; 2020. Licence: CC BY-NC-SA 3.0 IGO.
14. European Commission - Eurydice: **National Education Systems.** 2020. [Accessed 1 January 2021]. Reference Source
15. National Institute of Educational Evaluation: **Organization for Economic Cooperation and Development (OECD) Review of Policies to Improve the Effectiveness of Resource Use in Schools.** Madrid: Country Report - Spain; 2016.
16. Boletín Oficial del Estado: **Ley Orgánica 2/2006, de 3 de mayo, de Educación.** *BOE.* 2006: 106.
17. Boletín Oficial del Estado: **Ley Orgánica 8/2013, de 9 de diciembre, para la mejora de la calidad educativa.** *BOE.* 2013: 295.
18. Ministerio de Educación y Formación Profesional: **Una educación para el siglo XXI.** [Accessed 1 January 2021]. Reference Source
19. **Real Decreto 126/2014, de 28 de febrero, por el que se establece el currículo básico de la Educación Primaria.** *BOE.* 2014; **52**: 19349–19420.
20. **Real Decreto 1105/2014, de 26 de diciembre, por el que se establece el currículo básico de la Educación Secundaria Obligatoria y del Bachillerato.** *BOE.* 2015; **3**: 169–546.
21. Ministerio de Educación y Formación Profesional: **Itinerarios Sistema Educativo LOMCE.** [Accessed 1 January 2021]. Reference Source
22. Ministerio de Educación y Formación Profesional: **Registro Estatal de Centros Docentes no Universitarios.** [Accessed 1 January 2021]. Reference Source
23. European Commission - EuroStat: **Government expenditure on education.** 2020. [Accessed 1 January 2021]. Reference Source
24. Ministerio de Educación y Formación Profesional: **Estadísticas de la Educación.** 2018. [Accessed 1 January 2021]. Reference Source
25. World Health Organization: **Health Promotion Glossary.**Geneva: World Health Organization; 1998.
26. Bonell C, Wells H, Harden A, *et al.*: **The effect on student health of interventions modifying the school environment: systematic review.** *J Epidemiol Community.* 2013; **67**: 677–81. PubMed Abstract | Publisher Full Text
27. Langford R, Bonell CP, Jones HE, *et al.*: **The WHO Health Promoting School framework for improving the health and well-being of students and their academic achievement.** *Cochrane Database Syst Rev.* 2014; (4): CD008958. PubMed Abstract | Publisher Full Text
28. **What is the evidence on school health promotion in improving health or preventing disease and, specifically, what is the effectiveness of the health promoting schools approach?** Geneva: World Health Organization; 2006.
29. Bada E, Darlington E, Masson J , *et al.*: **European Standards and Indicators for Health Promoting Schools.** *Schools for Health in Europe Network Foundation.* 2019.
30. Salvador Llivina T, Suelves Joanxich JM: **Ganar salud en la escuela; guía para conseguirlo.**Madrid: Ministerio de Educación, Ministerio de Sanidad y Política Social; 2009.
31. Salvador Llivina T, Suelves Joanxich JM, Puigdollers Muns E, *et al.*: **Informe. Diagnóstico de situación sobre avances conseguidos, necesidades y retos en promoción y educación para la salud en la escuela en España.** Madrid: Ministerio de Educación Política Social y Deporte, Centro de Innovación y Documentación Educativa (CIDE) y Ministerio de Sanidad y Consumo, Dirección General de Salud Pública; 2008.
32. Salvador Llivina T, Suelves Joanxich JM, Puigdollers Muns E: **Criterios de calidad para el desarrollo de proyectos y actuaciones de promoción y educación para la salud en el Sistema educativo. Guía para las Administraciones educativas y sanitarias.** Madrid: Ministerio de Educación, Política Social y Deporte, Centro de Innovación y Documentación Educativa (CIDE) y Ministerio de Sanidad y Consumo, Dirección General de Salud Pública; 2008.
33. Ania Palacio JM: **Guía para el diseño y la mejora de proyectos pedagógicos de educación y promoción de la salud.** Madrid: Secretaría general Técnica del MEC; 2007.
34. **European Commission, the WHO Regional Office for Europe, and the Council of Europe.** European Network of Health Promoting Schools: the alliance of education and health. 1999.
35. Montero-Pau J, Tuzón P, Gavidia V: **La Educación para la Salud en las leyes de Educación españolas: comparativa entre la LOE y la LOMCE [Health Education in the Spanish Education Laws: comparative analysis between LOE and LOMCE].** *Rev Esp Salud Publica.* 2018; **92**: e201806030.
36. The Informed Health Choices Group: **Informed Health Choices Newsletter.**Norwegian Institute of Public Health; 2019. [Accessed 1 January 2021]. Reference Source
37. The Informed Health Choices Group: **Informed Health Choices Newsletter.**Norwegian Institute of Public Health; 2020. [Accessed 1 January 2021]. Reference Source
38. The Informed Health Choices Group: **Informed Health Choices Newsletter.**Norwegian Institute of Public Health; 2021. [Accessed 1 January 2021]. Reference Source
39. The Informed Health Choices Group: **Libro de las decisiones en salud: Aprendiendo a reflexionar sobre los tratamientos.** *Un libro sobre ciencias de la salud para niños en educación primaria.* Oslo: Instituto de Salud Pública de Noruega 2016. Translation: Iberoamerican Cochrane Centre (CCIb).
40. The Informed Health Choices Group: **Libro de las decisiones en salud: Aprendiendo a reflexionar sobre**

los tratamientos. Un libro sobre ciencias de la salud para niños en educación primaria. *LIBRO DE EJERCICIOS.* Oslo: Instituto de Salud Pública de Noruega 2016. Translation: Iberoamerican Cochrane Centre (CCIb).

41. The Informed Health Choices Group: **Guía para maestros del Libro de las decisiones en salud: Aprendiendo a reflexionar sobre los tratamientos.** *Un libro sobre ciencias de la salud para niños en educación primaria.* Oslo: Instituto de Salud Pública de Noruega; 2016; Translation: Iberoamerican Cochrane Centre (CCIb).

42. Martínez García L, Alonso-Coello P, Asso Ministral L, *et al.*: **Learning to make informed health choices: Protocol for a pilot study in schools in Barcelona.** *F1000Res.* 2019; **8**: 2018.
PubMed Abstract | Publisher Full Text | Free Full Text

43. IHC Choice team: **Protocol for a context analysis: Exploring the considerations for introducing digital learning resources for critical thinking about health in secondary schools.** *Norwegian Institute of Public Health.* 2020.

44. Tong A, Sainsbury P, Craig J: **Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups.** *Int J Qual Health Care.* 2007; **19**(6): 349–57.
PubMed Abstract | Publisher Full Text

45. Spanish Ministry of Education and Vocational Training: 2020. [Accessed 1 January 2021].
Reference Source

46. Laura MG: **IHC@BCNContextAnalysis.** *figshare.* 2021.
Publisher Full Text

47. Grossoehme DH: **Overview of qualitative research.** *J Health Care Chaplain*. 2014; **20**: 109–22.
PubMed Abstract | Publisher Full Text | Free Full Text

48. Guetterman TC: **Descriptions of sampling practices within five approaches to qualitative research in education and the health sciences.** *Forum Qual Soc Res.* 2015; **16**.
Publisher Full Text

49. **Conflicts of Interest, International Committee of Medical Journal Editors.** 2020. [Accessed 1 January 2021].
Reference Source

50. Nsangi A, Semakula D, Glenton C, *et al.*: **Informed health choices intervention to teach primary school children in low-income countries to assess claims about treatment effects: process evaluation.** *BMJ Open.* 2019; **9**(9): e030787.
PubMed Abstract | Publisher Full Text | Free Full Text

51. Thomas JHA, Synthesis NM: **Combining results systematically and appropriately**. In: Gough D, Oliver S, Thomas J, editor. *An Introduction to Systematic Reviews.* London: Sage Publications Ltd; 2012.

52. European Commission: **What personal data is considered sensitive?** [Accessed 1 January 2021].
Reference Source

53. **Informed Health Choices, Secondary school resources.**2020. [Accessed 1 January 2021].
Reference Source

54. Lund HM, Rekkavik ME, Voll E, *et al.*: **Teaching critical thinking about health claims: market analysis for Norwegian primary and lower secondary school.** *Informed Health Choices Working Paper.* 2018.

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Loai Albarqouni

The Institute for Evidence-Based Healthcare, Faculty of Health Sciences and Medicine, Bond University, Gold Coast, Qld, Australia

I would like to thank the authors for responding to all my comments.

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Evidence-based practice

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Version 1

Reviewer Report 22 July 2021

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Elaine M. Finucane
Health Research Board-Trials Methodology Research Network (HRB-TMRN), Evidence Synthesis Ireland and Cochrane Ireland, School of Nursing & Midwifery, NUI Galway, Galway, Ireland

Well done on a very timely study whose primary aim is to explore the educational context for teaching and learning critical thinking about health in Spanish primary schools. To achieve this,

the authors plan to conduct a systematic assessment of educational documents and resources and conduct semi-structured interviews with key education and health stakeholders.

I have just a few comments:

Introduction:

'*In this context, it is vital to teach people to critically assess health information (e.g., prolonged use of mask causes hypoxia) and to make informed health decisions (e.g., vaccination against COVID-19).'* - I feel the context of the examples used in this sentence need to be clearer.

Methods:

'In the semi-structured interviews, we will involve education and health policy makers, developers of learning resources, developers of health promotion and educational interventions, head teachers, teachers, families, and paediatric primary care providers.' - Where the authors state that families will be participants, I think it would be helpful if it were clearly stated if this included children as stakeholders also.

Involving stakeholders, including service users, in all stages of a study, from design through to dissemination supports relevance, diversity, and accessibility, which would seem particularly relevant to this study as the authors note it will face challenges as they '*will have to consider different educational contexts and languages (autonomous communities) within the same country (Spain)*'. To this end, I am surprised not to see a PPI group (public and patient involvement in research) actively involved throughout the different study processes.

I wish the authors all the best with their study.

Is the rationale for, and objectives of, the study clearly described?

Yes

Is the study design appropriate for the research question?

Yes

Are sufficient details of the methods provided to allow replication by others?

Yes

Are the datasets clearly presented in a useable and accessible format?

Not applicable

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Trial Methodology & Evidence Synthesis.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Author Response 06 Aug 2021

Laura Martínez García, Iberoamerican Cochrane Centre (IbCC) - Sant Pau Biomedical Research Institute (IIB-Sant Pau), Barcelona, Spain

We would like to thank Dr Finucane for her time and effort providing feedback on our manuscript. Below we describe how we have addressed each of her comments about the manuscript.

Comment 1 – COVID-19 examples

Response 1
We amended the text in Introduction section according to the reviewer's suggestion. The text now reads: *'In this context, it is vital to teach people to critically assess health information (e.g., how to assess the reliability of the claim 'If you wear a face mask for a long time, you may have hypoxia') and to make informed health decisions (e.g., how to decide whether to vaccinate against COVID-19).'*

Comment 2 – Participants

Response 2
The perspective of children is considered in our previous study *'Learning to make informed health choices: Protocol for a pilot study in schools in Barcelona'* [1]. The aim of this study is to explore both the students' and teachers' experience when using the IHC resources in the context of Barcelona (Spain). However, the present study is more related to education and health policies. Therefore, we decided not to include young children as a target stakeholder.

To clarify this issue, we amended the text in Methods section according to the reviewer's suggestion. The text now reads: *'To cover key education and health stakeholders, we will involve education and health policy makers, developers of learning resources, developers of health promotion and educational interventions, head teachers, teachers, families (without including children), and paediatric primary care providers (physicians and nurse practitioners)'.*

Comment 3 – Public and Patient Involvement group

Response 3
As far as we know, there are no established PPI groups - as in the health area - for the education area. We would be grateful to the reviewer to suggest any interest group for considering in our next studies.

References
1. Martínez García L, Alonso-Coello P, Asso Ministral L, et al. Learning to make informed health choices: Protocol for a pilot study in schools in Barcelona. F1000Res. 2019; 8: 2018.

Competing Interests: I declare that there are no conflicts of interest regarding the publication of this paper.

Reviewer Report 28 June 2021

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Loai Albarqouni
The Institute for Evidence-Based Healthcare, Faculty of Health Sciences and Medicine, Bond University, Gold Coast, Qld, Australia

Thanks for inviting me to review this protocol for an interesting research study. The authors aim to explore the educational context for teaching and learning critical thinking about health in Spanish primary schools. To achieve these aims, the authors plan to conduct a systematic assessment of educational resources and interviews with relevant stakeholders.

Comments:

- Authors will select a convenience sample of 34 schools. It would be good if authors can put this in context e.g. the total number of schools (population).
- I wonder if headteachers are easily identified and if they are the best to address their queries. I also wonder if they should have a unified approach for their request to the documents from the headteachers.
- Authors might consider describing their selection criteria e.g. would they include a document that has just marginally covered a few aspects relevant to critical thinking about health.
- Authors might consider describing their qualitative analysis approach e.g. thematic analysis.
- Similar authors might consider describing their approach of dealing with duplicating or overlapping aspects identified in the educational resources.

Is the rationale for, and objectives of, the study clearly described?

Yes

Is the study design appropriate for the research question?

Yes

Are sufficient details of the methods provided to allow replication by others?

Partly

Are the datasets clearly presented in a useable and accessible format?

Not applicable

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Evidence-based practice

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 06 Aug 2021

Laura Martínez García, Iberoamerican Cochrane Centre (IbCC) - Sant Pau Biomedical Research Institute (IIB-Sant Pau), Barcelona, Spain

We would like to thank Dr Albarqouni for his time and effort providing feedback on our manuscript. Below we describe how we have addressed each of the comments about the manuscript.

Comment 1 – Sample

Response 1
The context of the study was described in the Introduction section 'Spanish education system'. In this section we included the number of schools in the country, the text read: *'In the school year 2020-2021, there are 14,151 schools that provide primary education; 75% public schools, 21% publicly-funded private schools, and 4% private schools.'*

Comment 2 – Head teachers

Response 2
The Spanish Ministry of Education registry (https://www.educacion.gob.es/centros/home.do) included the following information for each school: 1) identification (including telephone number, email, and web page), 2) situation, and 3) source of funding (public schools, publicly-funded private schools, and private schools). Based on this information, we will be able to contact the selected schools and their headteachers directly. We described the recruitment strategy in the Methods section, the text read: *'We will contact, inform, and invite head teachers from selected schools (invitation e-mail, first e-mail reminder, second e-mail reminder, and telephone reminder) (Extended data 1)'. Furthermore, we developed an informative document to introduce the study to head teachers ('Extended data 1 – Information for schools and participants'*, (https://figshare.com/articles/online_resource/IHC_BCNContextAnalysis/14152880).

We will have to wait for the findings of the study to assess whether 1) the recruitment strategy is efficient, and 2) the request should be addressed by head teachers.

Comment 3 – Document selection criteria

Response 3
The selection criteria were described in Methods section 'Eligibility criteria', which stated:

- *Educational documents and resources (state and autonomous communities curriculums,*

school educational projects, textbooks and other health teaching materials)
- *Covered aspects related to critical thinking about health (critical thinking in general, health in general, and critical thinking specifically about health)*
- *Focused on primary education*
- *Available in the Spanish context*
- *Written in any official or co-official language of the country (Spanish, Catalan, Galician, Valencian, or Basque)*
- *Currently used during 2020-2021 school year*

We will have to wait for the findings of the study to describe in depth the aspects covered by identified educational documents and resources.

Comment 4 and 5 – Qualitative analysis

Response 4 and 5
We amended the text in Methods section 'Qualitative analysis' according to the reviewer's suggestion. The text now reads: *'We will analyse and synthesise qualitative data using a thematic synthesis. We will register in an Excel sheet quotes from: 1) educational documents and resources, and 2) semi-structured interviews. We will identify themes related to the educational context applying a three-step descriptive thematic synthesis: 1) codifying extracted quotes, 2) proposing descriptive themes, and 3) identifying main themes based on conceptual similarities within and across quotes [51]. We will describe the extent of duplication and overlapping themes within and across documents. If applicable, we will map how themes reflect the IHC Key Concepts framework through a data matrix (including documents as rows and the IHC Key Concepts as columns) [6]. One author will codify extracted quotes and propose descriptive themes. Two authors will select the descriptive themes, identify main themes, and assess the overlap with the IHC Key Concepts guided by iterative discussion, and if necessary, by consulting a third author. The authors' team will approve the final synthesis of findings.'*

References
6. Oxman AD, Chalmers I, Austvoll-Dahlgren A, et al.: Key Concepts for assessing claims about treatment effects and making well informed treatment choices [version 2; peer review: 3 approved]. F1000Res. 2019; 7: 1784.
51. Thomas JHA, Synthesis NM: Combining results systematically and appropriately. In: Gough D, Oliver S, Thomas J, editor. An Introduction to Systematic Reviews. London: Sage Publications Ltd; 2012.

Competing Interests: I declare that there are no conflicts of interest regarding the publication of this paper.

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