

Sense of coherence in Spanish-speaking countries during the COVID-19 pandemic

A systematic review

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Abstract

Background: The aim of this study was to assess the sense of coherence (SOC) in the Spanish-speaking population during the 2019 coronavirus disease pandemic.

Methods: A systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines in the PubMed, Scopus, and Web of Science electronic databases in August 2024. The methodological quality of the included studies was evaluated using the critical appraisal tools developed by the Joanna Briggs Institute.

Results: A total of 25 studies were included in the review, which demonstrated that high SOC is associated with improved coping styles, a reduced incidence of mental disorders, and greater resilience to traumatic events. The findings indicated that SOC acts as a crucial protective factor in diverse population groups, including health professionals, university students, and older adults, particularly during the 2019 coronavirus disease pandemic.

Conclusions: The study concludes that there are significant benefits for the mental and physical health of the population, regardless of cultural context, to be gained from strengthening the SOC. It is therefore essential that interventions which enhance the SOC are implemented in order to improve public health in times of crisis. Furthermore, it is crucial that SOC measurement instruments are validated in different cultural contexts in order to ensure the reliability and validity of the results obtained.

Abbreviations: COVID-19 = 2019 coronavirus disease, SOC = sense of coherence.

Keywords: COVID-19, mental health, sense of coherence, Spanish-speaking countries, surveys and questionnaires

1. Introduction

The sense of coherence (SOC), conceptualized by Aaron Antonovsky in 1979, has emerged as a key construct for understanding how individuals cope with stress and maintain their health and well-being in the context of adversity.^[1–3] The SOC is defined by 3 dimensions: comprehensibility, manageability, and meaningfulness. Extensive research has been conducted into this concept, with studies involving diverse population groups and contexts. The findings demonstrate the relevance of the SOC in health promotion and disease prevention.^[4]

The 2019 coronavirus disease (COVID-19) pandemic has placed considerable strain on the mental and physical

well-being of individuals globally, intensifying preexisting stressors and precipitating the emergence of novel ones.^[5,6] In particular, the Spanish-speaking population has encountered distinct challenges due to a confluence of socio-economic, cultural, and resource access factors.^[7] In this context, the SOC has become a significant factor in understanding how individuals cope with crises, manage stress, and maintain their health.^[8] Identifying what is happening allows individuals to know what is happening so that they can take action. For example, in a study conducted during the pandemic,^[9] the risk of death in subjects with a history of already known underlying illness was 3.27 times higher than in those with no history

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The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Ethical approval was unnecessary because it is not a study involving animals or humans.

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of illness, and people who followed disease prevention protocols were 16.37 times less likely to become infected. In another study conducted on 1046 hospitalized patients with COVID-19,^[10] the frequency of medication use was statistically similar between survivors and non-survivors, thus showing that anti-hypertensive, antidiabetic, and respiratory disease drugs were not associated with increased deaths in hospitalized patients with COVID-19, even though some patients might think they were.

Recent research has examined the influence of the SOC on various demographic groups within the Spanish-speaking population during the pandemic.^[11–13] For instance, the SOC has been examined in health professionals who were experiencing high levels of stress and a heightened risk of contagion,^[11] in university students coping with the transition to online education and facing financial uncertainty,^[14,15] and in older adults who had to adapt to social isolation and threats to their physical health.^[16]

The SOC is not only associated with an individual's capacity to effectively cope with stressors, but it is also linked to the adoption of beneficial health behaviors and an enhanced perception of overall health.^[3,4] The existing research suggests that individuals with high SOC are more likely to employ effective coping strategies, demonstrate a lower incidence of mental disorders, and exhibit greater resilience in the face of traumatic experiences.^[17]

It is important to apply SOC questionnaires in a variety of cultural and population contexts in order to guarantee the accuracy and relevance of the measures. The SOC, as a pivotal construct in health psychology, facilitates an understanding of how individuals perceive their lives as comprehensible, manageable, and meaningful. A validated questionnaire ensures that the results obtained are consistent and comparable, thus allowing for an appropriate assessment of the SOC across different demographic groups. Furthermore, culturally specific validation guarantees that measurement tools accurately reflect the experiences and perspectives of the populations under study, which is crucial for the design of effective interventions and the formulation of public health policies that respond to the specific needs of each context.^[18,19]

The present study examines the impact of the SOC on the mental and physical health of the Spanish-speaking population during the COVID-19 pandemic. It reviews a number of studies that address the relationship between the SOC and well-being in specific contexts, thereby providing a comprehensive view of its impact and emphasizing the need for intervention strategies that strengthen the role of the SOC as a means to improve public health in times of crisis. This study is therefore necessary because it offers a general overview of the SOC in different contexts, albeit with common roots. It also allows to observe the main measurement instruments used by the Spanish-speaking scientific community and the main factors that may influence this construct. The aim of this study was to assess the SOC in the Spanish-speaking population during the COVID-19 pandemic.

2. Methods

2.1. Study design

A systematic review was conducted following the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses statement.^[20] The authors relied on a protocol to carry out this systematic review, which was registered in the International Prospective Register for Systematic Reviews of the University of York, with identification code CRD42024569901.

2.2. Databases and search strategy

The search was conducted in the Pubmed, Scopus, and Web of Science electronic databases using the keywords derived from

the research question, and following the Condition, Context, Population Approach^[21] (Table 1).

Based on these keywords, the Medical Subject Headings thesaurus was consulted and the corresponding descriptors were obtained. To improve the capture of published studies in line with the topic of interest, synonymous terms were used to complete the search strategy based on the Medical Subject Headings descriptors (Table 2), which were linked by means of the Boolean operators “and” and “or.”

Table 3 shows the search strategy applied, carried out on August 01, 2024 for each of the above databases throughout the search process.

2.3. Selection criteria

The following inclusion criteria were adopted in the selection of articles: (i) participants: the Spanish-speaking population; (ii) context: data collected during the COVID-19 pandemic (between March 11, 2020 and May 5, 2023); (iii) outcome: studies that included SOC as an outcome variable. The study design drew only on empirical studies published in scientific journals in English, Spanish, French, or Portuguese and available in full text. Subsequently, studies identified as being of low scientific and technical quality were excluded following the application of the quality assessment tool. Additionally, opinion articles, editorials, and letters to the editor were also excluded.

2.4. Data collection and extraction

Two researchers independently carried out the searches, eliminating duplicate studies, and selecting articles likely to be included after reading the abstract and title according to previously established criteria. Subsequently, the same 2 authors reviewed the full text of the studies potentially eligible for inclusion in the review and the decision to include or exclude them in the review was made by consensus. Discrepancies were resolved by a third author. A summary table of the selected articles is presented, including authors, country, date of data collection, objective, methods or instruments used, and main findings.

2.5. Methodological quality assessment

The methodological quality of the selected studies was evaluated by 2 reviewers using the critical appraisal tools for studies of the Joanna Briggs Institute at the University of Adelaide.^[22] These tools enable the assessment of a study's methodological quality and the determination of the extent to which a study has excluded or minimized the possibility of bias in its design, conduct, and/or analysis. The versions for cross-sectional quantitative studies (8 items) and for longitudinal studies (10 items) were employed, with a cutoff point of 6 set for acceptance of their inclusion in this review (see Tables S1 and S2, Supplemental Digital Content, <http://links.lww.com/MD/N715>).

Table 1 Condition, Context, Population Approach (CoCoPop) format: keywords.	
Condition	Measurement of the sense of coherence
Context	During the COVID-19 pandemic.
Population	Spanish-speaking countries.
Research question	What degree of sense of coherence was demonstrated by the population of Spanish-speaking countries during the course of the COVID-19 pandemic, and how was this assessed?

Table 2
Terms used in the search.

MeSH	Meaning	Terms
Latin America	The geographic area of Mexico, Central America, continent of South America and the islands of the Caribbean where Spanish or other Romance language is spoken	Argentina OR Argentine OR Bolivia OR Bolivian OR Chile OR Chilean OR Colombia OR Colombian OR Costa Rica OR Costa Rican OR Cuba OR Cuban OR Dominican Republic OR Dominican OR Ecuador OR Ecuadorian OR El Salvador OR Salvadoran OR Guatemala OR Guatemalan OR Honduras OR Honduran OR Mexico OR Mexican OR Nicaragua OR Nicaraguan OR Panama OR Panamanian OR Paraguay OR Paraguayan OR Peru OR Peruvian OR Puerto Rico OR Puerto Rican OR Uruguay OR Uruguayan OR Venezuela OR Venezuelan.
Hispanic or Latino	A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race.	Hispanic* OR Latino
Spain	Country located between France on the northeast and Portugal on the west and bordered by the Atlantic Ocean and the Mediterranean Sea. The capital is Madrid.	Spain OR Spanish
Sense of coherence	A view of the world and the individual's environment as comprehensible, manageable, and meaningful, claiming that the way people view their life has a positive influence on their health.	Sense of coherence
Surveys and Questionnaires	Collections of data obtained from voluntary subjects. The information usually takes the form of answers to questions, or suggestions.	Survey* OR questionnaire* OR scale* OR instrument*
COVID-19	A viral disorder generally characterized by high fever; cough; dyspnea; chills; persistent tremor; muscle pain; headache; sore throat; a new loss of taste and/or smell (see ageusia and anosmia) and other symptoms of a viral pneumonia. In severe cases, a myriad of coagulopathy associated symptoms often correlating with COVID-19 severity is seen (e.g., blood coagulation; thrombosis; acute respiratory distress syndrome; seizures; heart attack; stroke; multiple cerebral infarctions; kidney failure; catastrophic antiphospholipid antibody syndrome and/or disseminated intravascular coagulation). In younger patients, rare inflammatory syndromes are sometimes associated with COVID-19 (e.g., atypical Kawasaki syndrome; toxic shock syndrome; pediatric multisystem inflammatory disease; and cytokine storm syndrome). A coronavirus, SARS-CoV-2 , in the genus betacoronavirus is the causative agent.	COVID-19 OR SARS-CoV-2

MeSH = Medical Subject Headings.

Table 3
Search strategy.

Database	Search strategy	Date of search	Results
Pubmed	(((((hispanic* OR "Latin America*" OR argentina OR argentine OR bolivia OR bolivian OR chile OR chilean OR colombia OR colombian OR "Costa Rica" OR "Costa Rican" OR cuba OR cuban OR "Dominican Republic" OR dominican OR ecuador OR Ecuatorian OR "El Salvador" OR salvadoran OR guatemala OR Guatemalan OR honduras OR honduran OR mexico OR mexican OR nicaragua OR nicaraguan OR panama OR panamanian OR paraguay OR paraguayan OR peru OR peruvian OR "Puerto Rico" OR "Puerto Rican" OR uruguay OR uruguayan OR venezuela OR venezuelan OR spain OR spanish) AND ((sense of coherence[MeSH Terms]) OR (sense of coherence[Title/Abstract]))) AND ((Surveys and Questionnaires[MeSH Terms]) OR (Survey*[Title/Abstract] OR Questionnaire*[Title/Abstract] OR scale*[Title/Abstract] OR instrument*[Title/Abstract]))) AND ((covid-19 [MeSH Terms]) OR (COVID-19 [Title/Abstract] OR SARS-COV-2 [Title/Abstract])))	August 01, 2024	20
Scopus	(ALL (hispanic* OR "Latin America*" OR argentina OR argentine OR bolivia OR bolivian OR chile OR chilean OR colombia OR colombian OR "Costa Rica" OR "Costa Rican" OR cuba OR cuban OR "Dominican Republic" OR dominican OR ecuador OR Ecuatorian OR "El Salvador" OR salvadoran OR guatemala OR Guatemalan OR honduras OR honduran OR mexico OR Mexican OR Nicaragua OR nicaraguan OR panama OR panamanian OR Paraguay OR paraguayan OR peru OR peruvian OR "Puerto Rico" OR "Puerto Rican" OR Uruguay OR uruguayan OR Venezuela OR venezuelan OR spain OR spanish) AND TITLE-ABS-KEY ("sense of coherence") AND TITLE-ABS-KEY (survey* OR questionnaire* OR scale* OR instrument*) AND TITLE-ABS-KEY (covid-19 OR sars-cov-2))	August 01, 2024	93
Web Of Science	Hispanic* OR Latin America* OR Argentina OR Argentine OR Bolivia OR Bolivian OR Chile OR Chilean OR Colombia OR Colombian OR Costa Rica OR Costa Rican OR Cuba OR Cuban OR Dominican Republic OR Dominican OR Ecuador OR Ecuadorian OR El Salvador OR Salvadoran OR Guatemala OR Guatemalan OR Honduras OR Honduran OR Mexico OR Mexican OR Nicaragua OR Nicaraguan OR Panama OR Panamanian OR Paraguay OR Paraguayan OR Peru OR Peruvian OR Puerto Rico OR Puerto Rican OR Uruguay OR Uruguayan OR Venezuela OR Venezuelan OR Spain OR Spanish (Topic) AND Survey* OR Questionnaire* OR scale* OR instrument* (Topic) AND sense of coherence (Topic) AND COVID-19 OR SARS-CoV-2 (Topic)	August 01, 2024	24
Total			137

3. Results

The initial search yielded a total of 137 references, which were subsequently screened according to the topic of this review. A total of 25 studies were ultimately selected (Fig. 1), comprising 24 cross-sectional studies and 1 longitudinal study.

Of the 25 studies included in the review, 14 were conducted in Spain, 4 in Colombia^[14,23–25] and 3 in Ecuador^[26–28]; 2 in Brazil and 1 in Chile,^[29] Argentina,^[30] and Venezuela.^[31] In 1 of the articles, the SOC-R questionnaire was validated for use with the Argentinean population^[30]; in 2 of them, the validation of the SOC-29 was

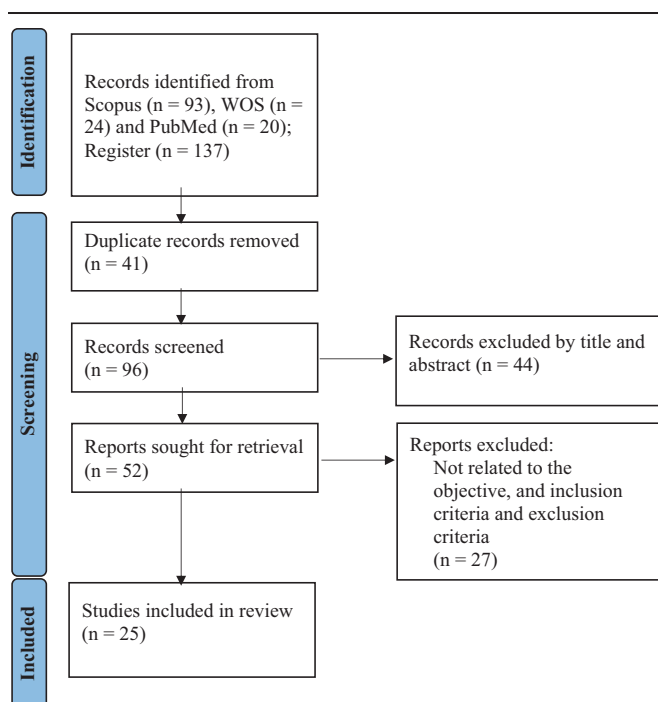


Figure 1. Search results (flowchart – PRISMA).

conducted, 1 for the Colombian population,^[23] and another for the Ecuadorian population.^[26] A total of 20 articles were collected using the SOC-13 questionnaire, 3 using the SOC-29, 1 using the SOC-15, 1 using the SOC-11, and 1 using the SOC-R.

Furthermore, 3 studies have focused on healthcare professionals,^[11,12,32] another 3 on university students,^[14,31,33] 1 on older adults,^[16] and the rest on the general population.

Table 4 is based on the Iberoamerican Cochrane Centre Handbook^[33] and it shows the characteristics of each of the 25 studies included in this review.

4. Discussion

This SOC systematic review conducted in Spanish-speaking countries during the COVID-19 pandemic yields significant and multidimensional results. A discussion based on the main findings of the included studies is presented below.

4.1. Impact of the SOC on physical and mental health

The SOC has been shown to be a key protective factor for mental and physical health during pandemics. The studies included in this review consistently demonstrate that high SOC is associated with better coping styles, lower incidence of mental disorders, and greater resilience in the face of traumatic events.

4.2. Healthcare professionals

Healthcare professionals with a high SOC experience lower levels of psychological distress and exhibit better coping with work-related stress and risks associated with COVID-19. The SOC acts as a stress buffer and improves work engagement, which is crucial in high demand contexts such as healthcare.^[11,12,32]

4.3. University students

Research carried out by Betancurth Loaiza et al,^[14] Serrano-Gómez et al^[45] y Espina-Romero et al^[31] report that students

with a higher SOC are better able to deal with the transition to online education and financial uncertainty.

A high SOC correlates with positive health behaviors and an improved perception of well-being, which is crucial for the student population facing significant lifestyle changes during the pandemic.^[15]

4.4. Older adults

Older adults with high levels of SOC show a greater ability to adapt to social isolation and threats to their physical health. This is because the SOC provides a cognitive framework that facilitates older adults' interpretation of stressful events in a positive and coherent way, thus facilitating the adoption of preventive behaviors and improved mental health.^[16]

4.5. Validation of SOC measurement instruments

This review included several studies that validated SOC measurement instruments in different cultural contexts, which is crucial to ensure the reliability and validity of the obtained results. Yaccarini et al^[30] validated the SOC-R scale in Argentina, finding a robust three-factor structure and a positive association with life satisfaction. Indeed, a validated questionnaire ensures that the results obtained are consistent and comparable, allowing for an adequate assessment of the SOC in different demographic groups and accurately reflecting the experiences and perspectives of the studied populations. Sánchez Palacio et al^[23] adapted the SOC-29 scale to the Colombian population, demonstrating its internal consistency and validity for measuring the SOC in this context. This is fundamental for designing effective interventions and formulating public health policies that respond to the particular needs of each cultural context.

4.6. Comparative discussion of the results by country

In Spain, health professionals with a high SOC were found to have lower levels of psychological distress and better coping with stress. This was due to the fact that a high SOC provides individuals with a better capacity to comprehend and manage the stressful demands of the work environment, especially in high-pressure situations such as the pandemic.^[11,32] In Colombia, although not specifically focused on health professionals, researchers reported that medical students with a high SOC showed better life habits and a positive perception of their health. This was due to the fact that the SOC facilitates proactive health behaviors and a positive perception of personal well-being, which is crucial throughout intensive medical training^[25,45] in Spain focused on nursing students; the results suggest that the SOC, especially in its comprehensibility and meaningfulness dimensions, is a significant predictor of nursing students' ability to manage stress and risk situations associated with the COVID-19 pandemic. Betancurth Loaiza et al^[14] in Colombia studied a larger sample of university students to gain more generalized insight into the impact of the SOC on students' well-being in a varied educational context during the crisis. They found that university students with a high SOC had better coping styles and experienced fewer negative effects on their well-being during the pandemic.

In Ecuador, Ortiz-Granja et al^[26] validated the SOC-29 scale and Gómez-Salgado et al^[28] studied its impact on healthcare workers, finding that a high SOC was associated with greater work engagement and reduced psychological distress.

In Chile, Gómez-Salgado et al^[29] analyzed the relationship between SOC, work engagement, and psychological distress in adults, finding that high SOC acts as a significant protective factor. In Brazil, Alonso et al^[37] found a high prevalence of psychological distress among both essential and nonessential workers, with SOC acting as a stress buffer. Comparatively,

Table 4
Characteristics of the studies included in the systematic review.

Authors and country where the study was conducted	Date of data collection	Objective of the study	Type of study	Participants	Methods	Main findings	Quality of the studies
^[30] Argentina	February to April 2020	To validate and adapt the revised SOC-R to Spanish in Argentina.	Cross-sectional study	575 adults (35.7% male, 64.3% female).	SOC-R, sociodemographic questionnaire.	The SOC-R showed a robust three-factor structure with acceptable fit indices (NNFI = .95; CFI = .97; IFI = .97; RMSEA = .054). Cronbach alpha coefficients were adequate for the manageability ($\alpha = .69$), reflection ($\alpha = .85$), and balance ($\alpha = .55$) subscales. The sense of coherence was positively associated with life satisfaction and was a significant predictor of well-being and life satisfaction. SOC and work stress were the most influential mediators of psychological distress. Perceived health, being a woman, and the availability of safety measures were also significantly influential. The SOC was found to act as a protective factor against psychological distress, decreasing the likelihood of experiencing psychological distress even in situations of high work stress.	6/8
^[29] Chile	April to December 2020	To analyze the relationship between SOC, work engagement, and work environment variables as predictors of the level of psychological distress during the first phase of the COVID-19 pandemic in Chile.	Cross-sectional study	1466 adult participants (61.5% female, 53.2% unmarried, 89.2% university educated, 59.0% with children).	SOC-13, GHQ-12, UWES-9.	SOC and work stress were the most influential mediators of psychological distress. Perceived health, being a woman, and the availability of safety measures were also significantly influential. The SOC was found to act as a protective factor against psychological distress, decreasing the likelihood of experiencing psychological distress even in situations of high work stress.	8/8
^[34] Spain	Not specified	To explore the relationships between self-care agency and SOC in nursing students.	Cross-sectional study	921 nursing assistant students.	Self-administered questionnaire, ASA scale, OLC-13.	A significant and positive relationship was found to exist between self-care agency and the SOC. Older participants showed stronger values for both constructs.	8/8
^[27] Ecuador	May to June 2020	To study the association between mobility restrictions and mental health in young adults in Ecuador.	Cross-sectional study	8426 young adults (70.53% female).	Mobility data from Google Community Mobility Reports, EEQ, PSQI, PHQ-9, SOC-15.	Mobility restrictions were associated with poorer mental health. Women and young people were most affected. There was a need for health promotion measures to mitigate the effects of confinement on mental health. A lower SOC was associated with greater mobility restrictions.	8/8
^[23] Colombia	Not specified	To validate and adapt the SOC-29 scale to the Colombian population.	Cross-sectional study	16 public health experts from various Colombian universities.	SOC-29, expert judgement technique, statistical analysis (Cronbach alpha, CVI).	The SOC-29 showed good internal consistency (Cronbach alpha = 0.838) and an overall CVI of 0.83, confirming its validity for measuring the SOC in the Colombian population.	6/8
^[35] Spain	Not specified	To assess the relationship between positive mental health (PMH) and SOC in emergency medical service workers.	Cross-sectional study	406 health professionals from 8 regions of Catalonia.	PMHQ, SOC-13, sociodemographic questionnaire.	The SOC, especially the dimensions of comprehensibility and meaningfulness, both predicted better positive mental health. Professionals with higher job satisfaction showed higher levels of PMH.	8/8
^[32] Spain	23 April and June 24, 2020	To analyze the effects of the SOC related to history of contact with infected persons on the development of psychological distress in occupational health professionals during the first months of the COVID-19 pandemic.	Cross-sectional study	499 occupational health professionals in Spain, including physicians and nurses.	GHQ-12, SOC-13, sociodemographic questionnaire.	The SOC was found to be an effective measure to prevent psychological distress arising from contact with people affected with COVID-19. Women and public sector workers showed higher levels of psychological distress.	8/8

(Continued)

Table 4 (Continued)						
Authors and country where the study was conducted	Date of data collection	Objective of the study	Type of study	Participants	Methods	Main findings
^[33] Spain	November 2020 and January 2021	To analyze risk perception, perceived risk factors, coping styles, preventive knowledge of the disease, and SOC as psychological predictors of COVID-19 infection in nursing students.	Cross-sectional study	1562 nursing students (87.5% female, mean age 21.5 years).	PRCK-COVID-19 scale, SOC-13.	Nursing students with coping strategies based on support-seeking and perceived risk factors (intrinsic and extrinsic) showed a higher risk of COVID-19 infection. The SOC and preventive knowledge were key variables in COVID-19 risk perception and coping. Female students and students in advanced courses displayed higher preventive knowledge and situation-focused coping styles. The majority of students scored intermediate SOC levels, with a higher percentage of males at high SOC levels. Students who perceived their health status as good and with healthy lifestyle habits showed higher percentages of intermediate and high SOC levels. The SOC-29 showed good internal consistency ($\alpha = .82$) and convergent validity. The model fit was acceptable with values of $\chi^2 = 1275.88$, CFI = .85, RMSEA = .07, SRMR = .04. Linguistic adaptation was crucial in this Ecuadorian context. The SOC-13 showed good internal consistency ($\alpha = 0.76$, $\omega = 0.78$, CR = 0.91) and structural validity confirmed by confirmatory factor analysis (CFA), with acceptable fit indices (NNFI = 0.959; CFI = 0.968; RMSEA = 0.052; SRMR = 0.052). Exploratory and confirmatory factor analyses supported a three-factor structure.
^[25] Colombia	April to September 2021	To estimate and classify the level of SOC of medical students at a Colombian university by applying the SOC-13 scale.	Cross-sectional study	360 medical students (70.2% female).	SOC-13, sociodemographic questionnaire.	Work engagement and SOC were positively correlated with each other, and both negatively correlated with psychological distress. Health professionals, despite experiencing psychological distress, had a positive and satisfactory perception of their work.
^[26] Ecuador	Not specified	To validate the factor structure of the SOC-29 scale and its relationship with attachment in the Ecuadorian population.	Cross-sectional study	445 participants (67.4% female).	SOC-29, Attachment Scale	A high prevalence (72.6%) of psychological distress was observed among the participants. They showed lower levels of coherence and work engagement than in previous studies in other countries. The mean total SOC-13 was 58.0 (IQR 21.0), with median scores of 21.0 (IQR 10.0) for comprehensibility, 18.0 (IQR 7.0) for manageability, and 20.0 (IQR 8.0) for meaningfulness. Lower SOC scores were associated with higher levels of psychological distress. Perceived risk of COVID-19 and adherence to preventive measures were high. Low levels of work engagement and SOC were associated with higher percentages of psychological distress. 94.1% of participants found it necessary for professionals and volunteers involved in COVID-19 to receive psychological support.
^[24] Colombia	May to July 2020	To determine the psychometric properties of the Spanish version of the SOC-13 scale in Colombian adults.	Cross-sectional study	489 adults (57.8% male).	SOC-13, sociodemographic questionnaire.	
^[36] Spain	March to April 2020	To analyze the relationship between work engagement, SOC, and levels of psychological distress in Spanish health professionals active during the COVID-19 pandemic confinement.	Cross-sectional study	1459 health professionals in Spain	UWES-9, SOC-13, GHQ-12.	
^[37] Brazil	April to May 2020	To assess the prevalence and severity of psychological distress among essential and nonessential workers in Brazil during the first months of the COVID-19 pandemic.	Cross-sectional study	2903 Brazilian workers (73.0% women)	Online questionnaire adapted from the questionnaire validated in the Spanish population, GHQ-12, SOC-13, UWES-9.	
^[12] Spain	March to April 2020	To assess the effects of the COVID-19 pandemic on the physical and mental health of non-health workers.	Cross-sectional study	1038 non-health workers (57.5% women)	SOC-13, UWES-9, GHQ-12.	

(Continued)

Table 4
(Continued)

Authors and country where the study was conducted	Date of data collection	Objective of the study	Type of study	Participants	Methods	Main findings	Quality of the studies
^[30] Spain	May 2020	To analyze risk factors and protection against burnout in nursing care facilities staff during the COVID-19 pandemic.	Cross-sectional study	340 nursing home professionals in Spain (89% women)	SOC-13, MBI.	The SOC was highly correlated with burnout-related dimensions and acted as a protective factor. Increased working hours and deteriorating mental and physical health were significant risk factors.	8/8
^[30] Spain	November 2020 to January 2021	To analyze the relationship between COVID-19 preventive behaviors and risk perception, coping styles, and SOC in older people.	Cross-sectional study	305 older adults (71.5% women)	SOC-13, COVID-19 Preventive Behaviours Index, Risk Perception Scale, Coping Styles Scale.	The problem-focused and emotion-focused coping style variables and the SOC subscales of meaningfulness and manageability explained 17% of the COVID-19 preventive behaviors. Men with low-risk perception, extrinsic risk perception, and low SOC had worse preventive behaviors.	8/8
^[14] Colombia	First academic term 2021	To describe the SOC in university students in Manizales as a resource for care in times of pandemic.	Cross-sectional study	566 university students (66.1% female).	SOC-29, sociodemographic questionnaire.	SOC scores ranged from 58 to 185, with a mean of 133.6 ± 24.4 . 27% of participants reported that the pandemic had negatively affected their lives, with significant associations between changes in living conditions and all items on the SOC-29 scale.	8/8
^[11] Spain	March to April 2020	To describe the levels of psychological distress and SOC among health professionals during the COVID-19 pandemic.	Cross-sectional study	1459 health professionals (80.9% female)	SOC-13, GHQ-12.	80.6% of the health professionals reported psychological distress. The mean score on the SOC-13 scale was 62.8 points. Psychological distress and SOC were related to the presence of COVID-19 symptoms and contact history.	8/8
^[40] Spain	March to April 2020	To assess the emotional impact of the pandemic from a sex perspective and to study the moderating variables of that impact.	Cross-sectional study	3801 Spanish adults (72.8% women)	SOC-13, GHQ-12, ad hoc questions on concern about contagion and self-perceived health.	Women experienced greater psychological distress during confinement and lower levels of SOC compared to men. Psychological distress and SOC were related to concern about contagion and self-perceived health.	8/8
^[28] Ecuador	April to May 2020	To test the association between SOC, work engagement, and psychological distress in healthcare workers in Ecuador during the first phase of the COVID-19 pandemic.	Cross-sectional study	803 health workers from all regions of Ecuador	SOC-13, UWES-9, GHQ-12.	The findings revealed a positive correlation between SOC and work engagement, and a negative correlation with psychological distress. Health workers perceived a worsening in the quality of care and working conditions compared to the pre-pandemic period.	8/8
^[31] Venezuela	Not specified	To determine the influence of psychological factors associated with the lifestyles of Venezuelan university students.	Cross-sectional study	843 university students (64.3% female)	SOC-11, SWLS, Practices and Beliefs about Lifestyles Questionnaire.	SOC was a significant predictor of a healthy lifestyle ($\beta = .47$, $P = .002$), explaining 37% of the total variance. Life satisfaction also showed a significant relationship with healthy lifestyles.	8/8
^[41] Brazil	April 23 to May 30, 2020	To validate the items of the COVID-19 Emotional Impact Questionnaire related to risk perception and to estimate their degree among healthcare workers during the first wave of the pandemic.	Cross-sectional study	1872 health workers in Brazil	EIQ-BR, SOC-13, questions on risk perception and preventive measures.	Risk perception was influenced by emotions, experiences, and knowledge. The SOC and resilience played a role in reducing risk perception. Factors associated with higher risk perception included being divorced, having a chronic illness, spending more than 1 hour a day learning about COVID-19, and always or almost always wearing a mask, among others.	8/8

(Continued)

Table 4
(Continued)

Authors and country where the study was conducted	Date of data collection	Objective of the study	Type of study	Participants	Methods	Main findings	Quality of the studies
¹⁴² Spain	April 2020 for a period of 7 months	To analyze the association between depression severity, lifestyle patterns, and personal factors related to health behaviors.	Cross-sectional study	226 patients with subclinical, mild, or moderate depression from primary care centers in Zaragoza and Mallorca.	BDI-II, IPAQ-SF, PSQI, MOS-SS, SES, PAM, SOC-13, HLS-EUQ16, IPS, GHQ-28	Low SOC, poor sleep quality, low patient activation, and sedentary lifestyle acted as predictors of greater severity of depressive symptoms. The model explained 33% of the total variance for depression.	8/8
¹⁴³ Spain	The first data set: May 2017 (when there was no COVID-19 pandemic). The second set: May 2020 (in the middle of a pandemic)	To analyze the impact of the COVID-19 pandemic on the mental health of nursing students in their final year of study, comparing the situation before and during the pandemic.	Longitudinal study	305 nursing students in their final year at 3 universities in Catalonia.	SOC-13, EOE, Rosenberg Self-Esteem Scale.	Students who experienced the pandemic reported higher levels of psychological distress, emotional exhaustion, and a lower SOC compared to those who did not experience the pandemic.	8/10
¹⁴⁴ Spain	April and July 2021	To investigate predictors of stress among nursing care facilities staff during the COVID-19 pandemic, focusing on psychological constructs such as burnout, SOC, psychological resilience, and cognitive fusion.	Cross-sectional study	170 nursing home professionals in Spain.	MBI, SOC-13, AAQ-II, BAFT, PSS.	Experiential avoidance, anxious feelings and thoughts, emotional exhaustion, and lack of personal achievement acted as significant predictors of perceived stress. Understanding the SOC had a protective effect against stress.	8/8

ASA: Appraisal of Self-Care Agency Scale; BAFT: Believability of Anxious Feelings and Thoughts Questionnaire; BDI-II: Beck Depression Inventory II; CF: Comparative Fit Index; EEQ: Emotional Eating Questionnaire; GHQ-12: General Health Questionnaire-12 items; IPS: Irrational Procrastination Scale; IQR: Interquartile range; MBI: Maslach Burnout Inventory; NFI: Non-Normed Fit Index; OLC-13: Orientation to Life Questionnaire-13 items; PAM: Patient Activation Measure; PHQ-9: Patient Health Questionnaire 9; PMHQ: Positive Mental Health Questionnaire; PRCK-COVID-19: Perception Risk Coping Knowledge; PSQI: Pittsburgh Sleep Quality Index; PSS: Perceived Stress Scale; RMSEA: Root Mean Square Error of Approximation; SES: Self-Efficacy Scale; SOC: Sense of Coherence; SOC-R: Revised Sense of Coherence; SOC-11: Sense of Coherence Scale-11 items; SOC-13: Sense of Coherence scale-13 items; SOC-15: Sense of Coherence-15 items; SOC-29: Sense of Coherence Scale-29 items; SRMR: Standardized Root Mean Squared Residual; SWLS: Satisfaction with Life Scale; UWES-9: Utrecht Work Engagement Scale-9 items.

both countries noted the critical role of the SOC in managing work-related stress and psychological distress, although in Brazil, the study was more focused on the difference between essential and nonessential workers during the pandemic.

4.7. Intervention strategies

The present review underscores the urgent need to develop and implement intervention strategies that strengthen the SOC as a means of improving public health in times of crisis. These interventions may include educational and psychological support programmes aimed at increasing the comprehensibility, manageability, and meaningfulness of life experiences. The SOC has proven to be a crucial protective factor against psychological distress and a predictor of positive health behaviors during the COVID-19 pandemic across the studied countries. This suggests that, regardless of the cultural context, strengthening the SOC can bring significant benefits for both mental and physical health.

However, the studied population groups vary across countries. Studies conducted in Spain and Colombia focused on university students and healthcare professionals, while those from Ecuador and Argentina targeted instrument validation. The studies carried out in Brazil and Chile highlighted the impact of the SOC on essential and nonessential workers, and provided a diverse overview of its influence on different demographic groups.

4.8. Limitations

A number of potentially relevant studies were excluded owing to language barriers, thus limiting the inclusion rate and representativeness of the review. This may have resulted in articles that met other important inclusion criteria but were not available in the accepted languages (English, Spanish, French, and Portuguese) being left out.

Additionally, most of the studies included in the review were cross-sectional, which prevents the long-term effects of SOC on mental and physical health from being assessed. Longitudinal studies were needed to better understand how the SOC influences resilience and well-being over time, especially in the context of a sustained crisis such as the COVID-19 pandemic.

Studies that were not peer-reviewed or did not present verifiable data were excluded. While this practice ensures the quality and reliability of the included studies, it may have also limited the amount of relevant research available, especially in emerging contexts where peer review may not be as rigorous or rapid.

The diversity of cultural and temporal contexts across the included studies may have also led to variability in the results. Differences in the pandemic situation, the governmental responses, and socio-economic conditions may have influenced how the SOC was perceived and measured in different regions and at different times.

5. Conclusions

This study has systematically examined how the SOC affected the mental and physical health of the Spanish-speaking population during the COVID-19 pandemic. The findings show that a high SOC is linked to better coping strategies, lower incidence of mental disorders, and greater resilience in the face of traumatic events. The reviewed studies covered a variety of demographic groups, including university students and healthcare professionals, all of whom faced different challenges during the pandemic. This review thus emphasizes the crucial role of the SOC as a protective factor and suggests that interventions aimed at strengthening the SOC can improve public health in times of crisis.

The validation of SOC measurement instruments in different cultural contexts is crucial to ensure the reliability and validity of the results. This was made evident in the studies conducted in Argentina and Ecuador, which underline the importance of adapting and validating SOC scales for specific population groups.

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