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Sense of Community in the context of disease prevention and health promotion: A scoping review of the literature

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Abstract

Background The centrality of community engagement in disease prevention and health promotion interventions highlights the need to understand the contextual factors that shape participation. Sense of Community (SoC), characterized by feelings of belonging, connection, and interdependence among members of a community, has emerged as a key component of community capacity and is therefore expected to influence engagement outcomes. However, empirical evidence is needed to assess its actual impact on community engagement. Additionally, the literature lacks a broader synthesis of the role and implications of SoC in this context. This study aims to review the empirical literature on SoC in disease prevention and health promotion, with a special focus on its association with community engagement.

Methods A scoping review was conducted following the PRISMA guidelines, searching for empirical studies published between 1974 and 2023 via Scopus, Web of Science, and PubMed.

Results Nineteen studies were included in the review, revealing three key themes: (1) the community to which SoC refers – among intervention participants, within community coalitions, and defined by the place of residence; (2) the interpretation of SoC, either as a generic, intuitive concept or as a theoretically defined construct; (3) the ways in which SoC is studied – as a predictor of engagement but also as an outcome of the interventions. Generic SoC among intervention participants emerged as a positive outcome and a factor contributing to engagement. However, as the scope expanded to encompass broader communities and SoC became more theoretically grounded, these dynamics shifted. SoC related to the place of residence did not exhibit significant improvement after interventions. Broader community-level SoC showed positive associations with engagement among members of community coalitions, but evidence was less consistent among the individuals targeted by interventions.

Conclusions The review highlighted a scarcity of empirical research on SoC despite its recognition as a key component of community capacity. Contextualizing SoC is crucial, as its interpretation significantly influences its role in disease prevention and health promotion interventions. Further research is needed to clarify whether SoC can foster engagement at all community levels, especially among the general population. This is particularly relevant amid the current context of escalating health needs and strained traditional resources, where community engagement is increasingly essential to ensuring the sustainable delivery of disease prevention and health promotion efforts. If SoC

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can drive widespread engagement, it could play a pivotal role in building more proactive and autonomous health-promoting communities.

Keywords Sense of community, Disease prevention, Health promotion, Community engagement, Community capacity, Community building

Introduction

The World Health Organization (WHO) describes disease prevention as measures aimed at reducing the occurrence, severity, and impact of specific diseases [1]. Health promotion, on the other hand, is a broader concept defined as "the process of enabling people to take greater control over and improve their health" (p.4) [1], empowering individuals to adopt healthier lifestyles. While disease prevention primarily targets reducing specific health risks, health promotion takes a more comprehensive approach to improving overall health across multiple areas of life. Despite these conceptual differences, disease prevention and health promotion share many common goals and have significant overlap in their functions [2]. Both approaches aim to reduce morbidity and mortality by fostering healthier populations, thereby enhancing overall well-being and quality of life. Disease prevention and health promotion interventions encompass organized actions, initiatives, or programs designed to achieve these objectives [3]. These interventions may target specific diseases (as in prevention) or promote broader lifestyle changes and healthier behaviors (as in health promotion). While many types of interventions exist, common examples include vaccination campaigns, screening programs for early disease detection, counseling services (e.g., for mental health), group initiatives to increase physical activity, and educational programs to improve eating habits or reduce substance use and abuse (such as tobacco, alcohol, and other drugs). The recent COVID-19 pandemic serves as a clear illustration of how these two approaches often intersect. Disease prevention interventions, such as vaccination campaigns, testing, mask mandates, and social distancing, aimed to reduce the spread and severity of the virus. Concurrently, health promotion played a critical role in encouraging behaviors that enhanced overall well-being [4–6], such as providing mental health support, promoting accurate health information, and advocating for healthy lifestyle choices to boost immune resilience. This crisis further highlighted how these two approaches complement each other [7], demonstrating the need for a combined strategy that focuses not only on immediate risk reduction but also on empowering individuals to adopt long-term, health-conscious behaviors.

The pandemic also emphasized the importance of implementing disease prevention and health promotion interventions that focus on local communities, a principle that has long been a central tenet of public health debate. While multiple definitions and interpretations exist [8], the term "community" generally refers to a group of individuals who are tied by common geographical, social, or cultural characteristics. Thus, communities can be defined by factors such as place of residence, occupation, ethnicity, language, shared interests, or vulnerability [9]. For instance, a disease prevention or health promotion intervention may target the residents of a town, or it could focus on communities of healthcare professionals, migrant workers, youth organizations, students, or people experiencing houselessness. Community-centered interventions recognize the unique identity and needs of each community, which is essential for tailoring effective public health efforts [10, 11]. These interventions also emphasize active participation from community members themselves [12]. Engaging communities in identifying and addressing their health issues can offer numerous benefits, including promoting democracy, combating social exclusion, empowering individuals and communities, mobilizing local resources and energy, improving decision-making, fostering holistic approaches, ensuring community ownership, and ultimately enhancing the effectiveness of interventions [13, 14]. In this view, communities are not only beneficiaries but also essential partners for healthcare providers in driving positive health outcomes and fostering collective well-being.

Effectively implementing community-centered interventions, which rely on tailored engagement strategies, requires a thorough consideration of various contextual factors unique to each community [15]. Community capacity is a popular concept for addressing these contextual factors. It encompasses the interplay of human, organizational, and social capital, which should influence communities' ability and approaches to engage in local initiatives such as public health interventions [16]. In this context, community capacity considers the resources within communities that can be leveraged to initiate action and sustain efforts aimed at preventing diseases and promoting health [17, 18]. Although the concept of community capacity has been discussed for some time, efforts to formalize it within the context of disease prevention and health promotion are relatively recent, as is the research focused on thoroughly examining its impact on community dynamics [19]. In this direction, a recent study found that higher community capacity significantly promotes the adoption of evidence-based prevention strategies [20]. This provides preliminary evidence

that community capacity enables the implementation of structured prevention programs that systematically address risks, needs, and protective factors, employ proven methods, and monitor the effectiveness of community health efforts and outcomes.

From its earliest conceptualizations, Sense of Community (SoC) has been consistently indicated as a core component of community capacity [17–19], as well as being one of the strongest predictors of the adoption of more evidence-based prevention strategies [20]. SoC is a multidimensional construct originating from the field of community psychology. Sarason (1974) was one of the first to articulate this construct, defining it as "the perception of similarity to others, an acknowledged interdependence with others, a willingness to maintain this interdependence by giving to or doing for others what one expects from them, and the feeling that one is part of a larger dependable and stable structure" [21]. Later, McMillan and Chavis (1986) introduced a widely adopted framework of SoC, identifying its four key dimensions: (a) Membership—a feeling of belonging or of sharing a sense of personal relatedness; (b) Influence—a sense of mattering, of making a difference to a group, and of the group mattering to its members; (c) Integration and fulfillment of needs—a feeling that members' needs will be met by the resources received through their membership in the group; and (d) Shared emotional connection—the commitment and belief that members have shared and will share history, common places, time together, and similar experiences. (p.9) [22]. In essence, SoC focuses on individuals' experience of their communities, emphasizing psychological, relational, and emotional bonds rather than the structural or organizational features. As different types of communities exist, SoC can develop in relation to various community settings. SoC based on place of residence can thrive when residents share a sense of belonging through local events, collective action on local issues, and a commitment to the well-being of their area [23–25]. In workplace settings, SoC can emerge when employees feel connected to organizational goals and supported by their colleagues, enhancing team cohesion [26]. Among migrant communities, SoC often develops through shared experiences of migration, cultural adaptation, and networks of mutual support [27, 28]. In student groups, SoC may be fostered through participation in academic and social organizations, where students build a sense of shared identity and purpose [29, 30]. In volunteer organizations, SoC frequently forms through shared values, collaborative efforts in service activities, and a collective commitment to a cause [31].

Numerous studies have delved into the relationship between SoC and the wide construct of well-being, encompassing concepts such as quality of life, life satisfaction, and happiness, across diverse populations and community settings. A recent integrative review synthesized this literature, revealing a broad consensus on the positive association between the two constructs [32]. Additional evidence regarding the relationship between SoC and other health indicators primarily stems from research conducted on the Canadian population. SoC has long been included in the constructs of a nationwide annual cross-sectional survey that gathers data on health status, healthcare usage, and health determinants across Canada (i.e., the Canadian Community Health Survey). These studies have shown that stronger SoC toward one's local community correlates with a reduced risk of depression [33], as well as a lower prevalence of mood and/or anxiety disorders [34]. Stronger SoC has also been associated with better self-rated general health and improved self-rated mental health for the general population across various life stages [35], immigrants [36], and individuals with mental or substance use disorders [37]. Conversely, individuals with a weaker SoC are more likely to have unmet healthcare needs due to limited social support networks, which reduces their awareness of where and how to access appropriate healthcare [38]. Furthermore, SoC has demonstrated a positive relationship with the likelihood of undertaking individual health behavior changes (such as more exercise, changes in diet, and reduced smoking) [39].

This evidence suggests that SoC has a significant protective function for individuals' health and well-being across diverse community settings. However, much of the existing research focuses on "static" contexts, examining SoC in relation to health variables without addressing its role in disease prevention and health promotion interventions. Therefore, the literature lacks a comprehensive analysis of the various ways in which SoC has been addressed within these interventions. Additionally, while SoC is acknowledged as a pivotal element of community capacity that should shape how communities engage in such interventions, empirical evidence is needed to assess its actual impact on community engagement. Previous reviews from other disciplines have explored this association, highlighting a positive link between SoC and various forms of political and civic participation within communities [40, 41], suggesting its potential as a catalyst for engagement across various settings. However, the literature lacks a similar synthesis of this association in the context of disease prevention and health promotion interventions.

Based on these considerations, this study employed a scoping review approach to examine the existing empirical literature on SoC in the context of disease prevention and health promotion, with a specific focus on its association with community engagement. Therefore, the following research questions were devised:

- RQ1: How has SoC been empirically addressed in the context of disease prevention and health promotion interventions?
- RQ2: What is the empirical association between SoC and community engagement in this context?

Methods

This study adopted the scoping review methodology developed by Arksey and O'Malley [42], incorporating modifications and updates proposed by Levac et al. and Peters et al. [43, 44]. This five-stage model includes the following steps: (i) identifying the research question(s), (ii) identifying relevant studies, (iii) selecting studies, (iv) charting data, and (v) summarizing and reporting the results. To ensure comprehensive reporting, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) checklist was followed [45].

Identifying studies

The scoping search was conducted on October 31, 2023, using three databases (Scopus, Web of Science, PubMed) and employing the search terms reported in Table 1. Specifically, given the complexity of listing all potential disease prevention and health promotion interventions, and in line with the exploratory nature of scoping reviews, a broad research strategy was adopted. To achieve this, the search aimed to collect all articles referencing SoC and the general concept of health, as defined by the WHO: "A state of complete physical, social, and mental well-being, and not merely the absence of disease or infirmity" (p.3) [1]. This approach ensured that relevant articles were not overlooked simply because they did not specifically use the terms "disease prevention" or "health promotion". In line with the WHO's definition of health, the search also included the terms "wellness" and "well-being," where wellness refers to the active pursuit of activities, choices, and lifestyles that promote health, and well-being is defined as the broader positive state of health, happiness, and prosperity [46]. Additional file 1 contains the search strategies used for each database. Furthermore, additional studies were searched by screening the reference lists of included studies.

Selecting studies

Study selection followed an iterative process involving searching the literature, refining the eligibility criteria as familiarity with the literature increased, and reviewing articles for study inclusion [42, 43]. Articles were screened in two stages: the first by applying the eligibility criteria to titles and abstracts, the second to full texts.

Articles published between 1974 (the year of Sarason's definition of SoC) and October 31, 2023 (the date of article extraction) were included. No restrictions were made regarding country of origin, study type or population. Studies were excluded if they met any of the following criteria, which were applied sequentially:

- Were not in English;
- Were non-peer-reviewed (such as conference abstracts, theses, dissertations) or non-empirical (such as literature reviews, theoretical papers, book reviews, or letters to the editor);
- Did not address the concepts of health, wellness or wellbeing. For example, sociological studies about SoC and political participation, anthropological studies on SoC and cultural identity, or religious studies about SoC and spiritual cohesion.
- Did not refer to any intervention (i.e., organized actions, initiatives, or programs). This criterion excluded studies that focused solely on the "static" relationship between SoC and various health and well-being variables in a population. For example, studies analyzing SoC in relation to health behaviors (e.g., exercise habits or smoking cessation), quality of life, or life satisfaction without discussing any organized intervention aimed at improving these outcomes were excluded.
- Referred to intervention(s) beyond the scope of disease prevention. Studies focusing on interventions related to disease management and/or rehabilitation were excluded. For instance, articles analyzing SoC in the context of cancer recovery support groups or interventions aimed at helping people manage diabetes, rather than preventing disease, were not considered.
- Made minor and/or generic references to SoC (e.g., mentioning SoC only a few times in the abstract or conclusions). Specifically, studies that did not use SoC as a theoretical framework to interpret empirical data or did not feature SoC as a theme in the results and/or discussion were excluded.

Data charting

Information extracted from each of the selected studies included the following: general characteristics (i.e., title, author(s), year of publication, journal, and study location), aims, intervention description, participants, design

Table 1 Database search terms

Health* OR "health care" OR well-being OR wellbeing OR wellness OR prevention	AND	"Sense of community"

Note: *: Indicates a truncation command employed to encompass all potential suffix variations of the root word

and methods, information on how SoC was studied/measured, and relevant findings.

Summarizing and reporting results

The results of the study identification and selection process, along with the main characteristics of the included studies and interventions, were synthesized descriptively. The content of the selected studies was narratively summarized based on key research themes identified in the literature to address the research questions.

Results

Study identification and selection

The PRISMA diagram in Fig. 1 illustrates the study identification and selection process. The initial search identified 3,913 articles (Scopus = 1,709, Web of Science = 1,386, PubMed = 818). After removing articles outside the data range (i.e., published before 1974) and duplicates, a total of 1,950 unique papers were reviewed. The screening of titles and abstracts resulted in a subset of 82 articles, the full texts of which were thoroughly examined. 19 studies were finally included in the review. No additional articles were identified from the screening of the reference lists of

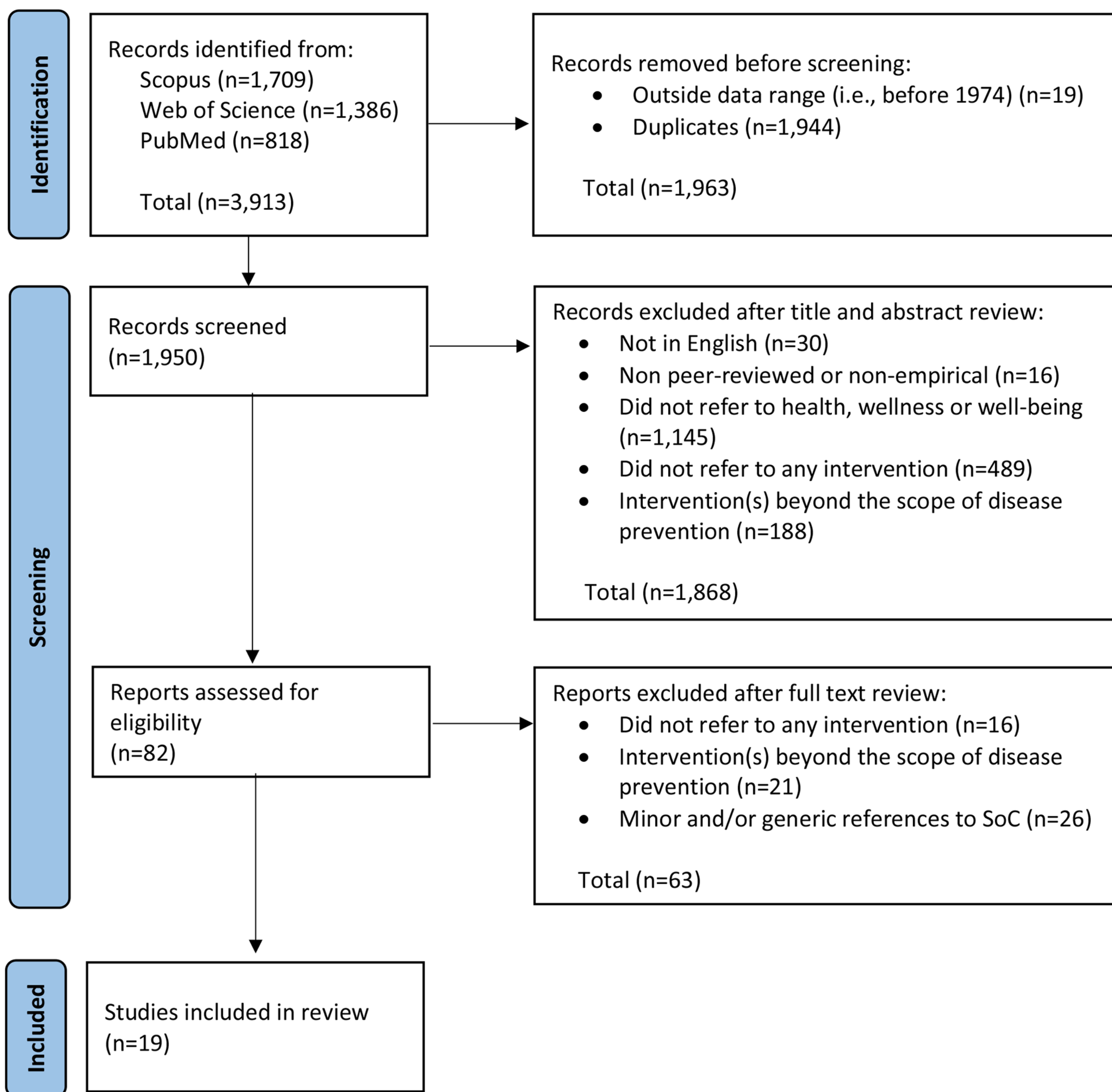

Fig. 1 Study identification and selection process: PRISMA diagram

the included studies. Additional file 2 contains the complete data chart for the selected studies, while Table 2 reports a summary of key characteristics and research themes.

Study characteristics

12 studies (63%) were published in the last decade (i.e., between 2014 and 2023), but also five studies (26%) predated 2004. 12 studies (63%) were conducted in the USA and only two (11%) in developing countries (i.e., Ghana and Thailand). 13 studies (68%) employed a quantitative research approach, four (21%) were qualitative, and two (11%) were mixed quantitative and qualitative. Four studies (21%) adopted a longitudinal design, two of which (11%) were randomized controlled trials. In 11 studies (58%), participants were individuals from the target population of the interventions; in the remaining cases, they constituted members of organizations delivering the interventions. Specifically, in seven studies (37%), these organizations were described as community coalitions. While a detailed and clear description of the activities and their constituents was often lacking, these coalitions typically involved collaborative partnerships among various local stakeholders. These stakeholders could include community leaders, healthcare professionals, nonprofit organizations, government agencies, businesses, faith-based groups, social services providers, and educational institutions, collectively working to address different health issues within communities.

The interventions outlined in the selected studies were tailored to diverse populations and encompassed a wide array of activities and objectives (Additional file 2). These included educational interventions with strong external support from professionals, such as a lifestyle initiative aimed at increasing physical activity among Black men [47], single sports day events, or longer-term physical exercise programs for healthcare workers [48, 49], and a program training high school students in delivering local substance use prevention advocacy initiatives [50]. Other educational interventions involved less professional support and greater autonomous mobilization of intervention participants, such as online social network interventions to promote walking among dog owners or middle-aged migrant women [51, 52], and a mosquito control program to prevent malaria in socio-economically disadvantaged urban areas of a developing country [53]. One intervention, involving communication campaigns promoting hygiene behaviors to prevent diarrheal diseases in rural villages of a developing country, was collaboratively delivered by professionals and intervention participants [54]. Finally, one intervention, featuring nature walks for Latinx individuals, was led by intervention participants themselves (peer-led intervention) [55]. In the remaining studies, it was not possible to delineate the specific characteristics of the interventions. This was often due to their focus on community coalitions delivering multiple interventions, which resulted in a lack of detailed descriptions for each individual intervention. Nevertheless, these interventions addressed the following issues: physical activity [56–59], nutrition [56–58], and substance use, particularly among adolescents [60–65].

Key research themes

The key research themes identified in the literature respond to three sub-questions: “Which SoC (which community)?”, “What type of SoC?”, and “How is SoC studied?”.

Which SoC (which community)?

The studies included in the review addressed SoC within different communities. In six studies (32%), this involved communities formed during interventions, among their participants. For example, a SoC among the Latinx participants in a walking intervention or the mental health workers participating in a single sports day event was studied [48, 55]. In five studies (26%), it related to the community coalitions in which study participants were engaged (i.e., SoC developed between the different partners involved in the coalitions). For instance, a SoC within community coalitions focused on alcohol and drug prevention in Rhode Island (USA) or promoting healthy lifestyles in Emilia-Romagna (Italy) was analyzed [57, 62]. In the remaining eight studies (42%), a broader community was considered, which was generally defined by the place where study participants lived. For example, this included SoC within a local village in Thailand, a suburban area in Ghana, and two New England towns in the USA [51, 53, 54].

As a result, the studies included in the review investigated SoC *among intervention participants*, *within the coalition*, and *toward the place of residence* (Table 2).

What type of SoC?

In six studies (32%), although SoC was a central theme, no explicit reference was made to its theoretical underpinnings. Instead, SoC was often presented as a “self-standing” concept, without further definition or description. Specifically, in four of these studies (21%, i.e., [47, 54, 55, 59]), SoC emerged as a recurring theme identified through thematic analysis of qualitative data. It was generically described as a feeling of belonging, inclusivity, ownership, or altruism, without further elaboration. In the other two studies (11%, i.e., [48, 49]), surveys administered to participants included a generic question about SoC (e.g., “Do you think the intervention helped to promote a sense of community?” [48]), again without providing an explicit definition or referencing any theories or frameworks. In contrast, the remaining 13 studies

Table 2 key characteristics and research themes of selected studies

Reference	Study aims	Intervention aims	Participants, design, and methods	Which SoC (which community)?	What type of SoC?	How is SoC studied/used?	Relevant findings
Addison et al. (2022)	Describe the role of social support in a pilot clinical trial of a lifestyle intervention among Black American men	Lifestyle intervention targeting physical activity to improve cardiovascular health	20 Black men who joined the intervention in Columbus (Ohio, USA). Qualitative – Focus groups at the end of the intervention	SoC among the intervention participants	Generic SoC	Predictor of target population engagement - Intervention outcome	The development of SoC represented a primary reason why participants joined and continued with the intervention, and it was identified as one of its main outcomes.
Altman et al. (1998)	Identify the factors that may influence youth participation in heart disease prevention activities	Intervention to reduce cardiovascular disease risk factor targeting lifestyle behaviors	2,609 high school students in San Jose, California (USA). Quantitative – Cross-sectional survey before the intervention	SoC toward the place of residence	Defined SoC	Predictor of target population engagement	A significant but modest association between SoC and participation in health promotion and prevention activities was reported.
Atiglo et al. (2018)	Assess the impact of individuals' SoC on their willingness to support a mosquito control program	Mosquito control program to prevent malaria	768 individuals in Accra (Ghana). Quantitative – Cross-sectional survey	SoC toward the place of residence	Defined SoC	Predictor of target population engagement	Generally, higher SoC was associated with greater willingness to support the program, but it varied according to the different dimensions of SoC considered.
Bermea et al. (2018)	Examine substance abuse prevention coalition members' SoC and the role SoC has in motivating their involvement in coalition activities	Different interventions developed by a community coalition focusing the prevention of youth substance abuse	17 members of one coalition in the northeastern United States. Qualitative – Semi-structured interviews	SoC within the community coalition	Defined SoC	Predictor of community coalition members' engagement	SoC influenced the motivation for participants' engagement in the community coalition.
Reference	**Study aims**	**Intervention aims**	**Participants, design, and methods**	**Which SoC (which community)?**	**What type of SoC?**	**How is SoC studied/used?**	**Relevant findings**
Brown et al. (2016)	Compare the context and capacity of drug and violence prevention coalitions in Mexico to those in the United States	Different interventions developed by community coalitions focusing on the prevention of youth substance abuse and violence	195 members of 9 coalitions in Mexico and 139 members of 7 coalitions in the United States. Quantitative – Cross-sectional survey	SoC toward the place of residence	Defined SoC	Predictor of target population engagement	SoC and target population support to interventions were positively correlated with one another among both U.S. and Mexican contexts.
Cicognani et al. (2019)	Assess the impact of the quality of collaboration within health promotion coalitions on SoC, empowerment, and perceived coalitions' outcomes	Different interventions developed by community coalitions focusing on nutrition, physical activity, smoking, and alcohol consumption	238 members of different coalitions within a community health project in the Italian region of Emilia-Romagna. Quantitative – Cross-sectional survey	SoC within the community coalition	Defined SoC	Predictor of community coalition members' engagement	SoC significantly and moderately predicted the commitment in health promotion projects in the future.

Table 2 (continued)

Reference	Study aims	Intervention aims	Participants, design, and methods	Which SoC (which community)?	What type of SoC?	How is SoC studied/used?	Relevant findings
Jakobsen et al. (2017)	Evaluate the effect of workplace versus home-based physical exercise on psychosocial factors among healthcare workers	Physical exercise program	200 healthcare workers who joined the intervention in Copenhagen (Denmark). Quantitative –Randomized Controlled Trial – Pre/post intervention survey	SoC among the intervention participants	Generic SoC	Intervention outcome	SoC did not change significantly between the intervention and control groups.
Kegler and Swan (2011)	Examine whether member engagement mediate relationships between community coalition factors and community capacity	Different interventions developed by community coalitions focusing on nutrition, physical activity, and substance abuse	231 members of 19 California Healthy Cities and Communities (CHCC) coalitions in California (USA). Quantitative – Cross-sectional survey	SoC toward the place of residence	Defined SoC	Intervention outcome	Effective coalition processes and engaged coalition members were associated with a perception of stronger SoC within the target population.
Reference	**Study aims**	**Intervention aims**	**Participants, design, and methods**	**Which SoC (which community)?**	**What type of SoC?**	**How is SoC studied/used?**	**Relevant findings**
Lee et al. (2020)	Explore how social support delivered through Social Networking Services impacts interactions and influences social-cognitive factors for exercise	Mobile app–based intervention to increase walking	24 Korean-Chinese middle-aged migrant women who joined the intervention in Seoul (Korea). Mixed quantitative and qualitative – Text analysis and Pre/post intervention survey	SoC among the intervention participants	Defined SoC	Intervention outcome	SoC was significantly increased at the end of the intervention.
McCann et al. (2013)	Identify effective recruitment and retention strategies utilized by health promotion organizations for their interventions	Different interventions developed by local health promotion organizations focusing on nutrition and physical activity	25 key informants from 22 health promotion organizations in Melbourne (Australia). Qualitative – Semi-structured interviews	SoC among the intervention participants	Generic SoC	Predictor of target population engagement	36% of study participants mentioned SoC as one effective retention strategy.
McMillan et al. (1995)	Study the individual and organizational characteristics related to the individual and collective psychological empowerment of coalitions	Different interventions developed by community coalitions focusing on the prevention of alcohol and drugs problems	456 members of 35 coalitions in Rhode Island (USA). Quantitative – Cross-sectional survey	SoC within the community coalition	Defined SoC	Predictor of community coalition members' engagement	At the individual level, the SoC showed a significant but weak association with empowerment, whereas at the collective level, the association was significant and moderate.
Mendez et al. (2023)	Examine factors leading to successful recruitment and retention of Latinx participants in an intervention to increase physical activity	Outdoor physical activity (mainly "nature walks") intervention	12 Latinx who joined the intervention in Richmond (California, USA). Qualitative – Semi-structured interviews	SoC among the intervention participants	Generic SoC	Intervention outcome - Predictor of target population engagement	The development of a SoC represented a positive outcome of the intervention and one of the four critical factors for the recruitment and retention of Latinx in the intervention.

Table 2 (continued)

Reference	Study aims	Intervention aims	Participants, design, and methods	Which SoC (which community)?	What type of SoC?	How is SoC studied/used?	Relevant findings
Reference	**Study aims**	**Intervention aims**	**Participants, design, and methods**	**Which SoC (which community)?**	**What type of SoC?**	**How is SoC studied/used?**	**Relevant findings**
Peterson and Reid (2003)	Test a path model that includes perceptions of person-related, situation-related, and environment-related predictors of empowerment	Different interventions delivered by a "Center for Substance Abuse Prevention Community Partnership"	661 residents in a northeastern U.S. urban setting. Quantitative – Cross-sectional	SoC toward the place of residence	Defined SoC	Predictor of target population engagement	SoC moderately predicted both participation in substance abuse prevention activities and empowerment.
Pinfold (1999)	To compare knowledge of good hygiene practices and behavior change with communication channels used to promote hygiene behaviors	Communication campaign to promote correct hygiene behaviors to prevent diarrheal disease	Not specified number of villagers in northeast Thailand. Mixed quantitative and qualitative – Survey, focus groups, and interviews at the end of the intervention	SoC toward the place of residence	Generic SoC	Predictor of target population engagement	Authors stated that a stronger SoC usually resulted in a greater involvement in the intervention activities.
Powell et al. (2017)	investigate the organizational characteristics that might affect empowerment in community coalitions working to combat underage drinking	Different interventions developed by community coalitions focusing on the prevention of underage drinking	357 members of 17 coalitions in a Northeastern U.S. state: 46% paid staff and 54% volunteer members. Quantitative – Cross-sectional survey	SOC within the community coalition	Defined SoC	Predictor of community coalition members' engagement	For both paid staff and volunteers, SoC was significantly associated empowerment. Only for paid staff, it was also significantly associated with participation and engagement in coalition activities.
Schneider et al. (2015)	Investigate whether a social networking web site could be used to deliver a dog walking intervention to increase physical activity.	Online social network used to promote walking	102 dog owners who joined the intervention in Worcester and Lowell (Massachusetts, USA). Quantitative –Randomized Controlled Trial – Pre/post intervention survey	SoC toward the place of residence	Defined SoC	Intervention outcome	SoC did not change significantly between the intervention and control groups.
Reference	**Study aims**	**Intervention aims**	**Participants, design, and methods**	**Which SoC (which community)?**	**What type of SoC?**	**How is SoC studied/used?**	**Relevant findings**
Treitler et al. (2018)	Apply item response theory to examine the psychometric properties of a Sense of Community-Responsibility (SoC-R) scale used in an evaluation of community-based substance abuse prevention coalitions	Different interventions developed by community coalitions focusing on the prevention of substance abuse	309 members of 17 coalitions in the northeastern United States. Quantitative – Cross-sectional survey	SoC within the community coalition	Defined SoC	Predictor of community coalition members' engagement	SoC was moderately correlated with coalition participation.

Table 2 (continued)

Reference	Study aims	Intervention aims	Participants, design, and methods	Which SoC (which community)?	What type of SoC?	How is SoC studied/used?	Relevant findings
Vuong et al. (2019)	Examine the impact of organizing a sports day event	Single sports day event to promote physical activity	66 AMH professionals who attended the sports day event in Edmonton (Alberta, Canada). Quantitative – Cross-sectional survey at the end of the intervention	SoC among the intervention participants	Generic SoC	Intervention outcome	96.7% of participants agreed that the event helped to promote a SoC.
Winkleby et al. (2001)	Test whether high school students could be effectively engaged in community advocacy related to different substance use, and whether this would affect their own substance use.	Substance use prevention advocacy intervention	116 high school students who joined the intervention in San Jose (California, USA). Quantitative – Pre/post intervention survey	SoC toward the place of residence	Defined SoC	Intervention outcome	SoC did not change significantly before and after the intervention.

(68%) explicitly referenced theories and related literature on SoC. These studies grounded their understanding of SoC in well-established frameworks, such as McMillan and Chavis's (1986) model [22]. Specifically, these studies utilized validated scales (five studies, 26%, i.e., [51, 57, 63–65]), adapted scales (two, 11% i.e., [52, 58]), or ad-hoc scales (five, 26%, i.e., [50, 53, 56, 61, 62]), derived from the literature to investigate quantitative data. SoC was used as a theoretical framework to interpret qualitative data in only one study (5%, i.e., [60]). The use of such frameworks allowed to consider SoC in its complexity, particularly by analyzing its different dimensions: Membership, Influence, Integration and Fulfillment of Needs, and Shared Emotional Connection [22].

Therefore, two types of SoC were identified in the studies included in the review: the *generic SoC* and the *defined SoC* (Table 2). *Generic SoC* refers to instances where it is used without reference to any specific theory, often assumed to be an intuitive or commonly understood concept. In contrast, *defined SoC* is rooted in theoretical frameworks and is analyzed within the relevant literature.

A *generic SoC* was mostly utilized when investigated *among intervention participants* (five studies out of six, i.e., [47–49, 55, 59]), whereas a *defined SoC* was predominantly employed when studied *within the coalition* or *toward the place of residence* (11 studies out of 12, i.e., [50, 51, 53, 56–58, 61–65]).

How is SoC studied?

Intervention outcome In eight studies (42%) SoC was studied as an outcome of the interventions. Specifically, SoC *among intervention participants* emerged as one of the positive outcomes of the interventions from thematic analysis of qualitative data reported by the participants [47, 48, 55]. Furthermore, this SoC increased when quantitatively assessed before and after the intervention [52]. When SoC was studied *toward the place of residence*, instead, no significant changes were reported in the pre/post quantitative assessments across both randomized controlled trials [49, 51], and a non-randomized study [50]. Additionally, one study identified a perceived strengthening of this SoC within the target population as an outcome of the interventions delivered by effective community coalitions [58]. However, this was reported by members of the community coalitions, rather than by members of the target population.

Predictor of engagement In 13 studies (68%), SoC was studied as a predictor of engagement (Table 2). When investigated *among intervention participants*, SoC was identified in thematic analysis of qualitative data from participants as one of the main reasons why they chose to join and remain in the interventions over time [47, 55]. Furthermore, key informants representing various health promotion organizations emphasized the importance of fostering this SoC as a crucial retention strategy of intervention participants [59].

When SoC *within the community coalition* and engagement of members of community coalitions were studied, positive and moderate quantitative associations were reported. Specifically, these associations involved participation in coalition activities [64, 65], empowerment [62, 64], and commitment in health promotion projects in the future [57]. Furthermore, this evidence was further corroborated by a qualitative study describing the crucial

role of SoC in influencing coalition members' engagement [60].

When SoC *toward the place of residence* and engagement of the target population were studied, positive but modest quantitative associations were reported. Specifically, these associations involved SoC and willingness to support the intervention [53], frequency of participation in health promotion and prevention activities [56, 63], and empowerment [63]. Additionally, a positive correlation was found between this SoC and the support of target populations to the interventions; however this was according to the perspective of the members of the community coalitions delivering these interventions [61]. Similarly, in another study, authors generically described a greater involvement in the intervention among those populations where, in their view, a stronger SoC existed [54].

Discussion

SoC is a key dimension of community capacity, expected to influence communities' ability to engage in community-centered disease prevention and health promotion interventions, which can deliver widespread health and social benefits. However, empirical evidence is needed to determine the actual impact of SoC on community engagement—to examine how capacity translates into engagement. Furthermore, a thorough exploration of how SoC has been empirically addressed within these interventions is necessary to fully understand its role and implications. This scoping review aimed to investigate the empirical literature on SoC to provide a comprehensive overview in the context of disease prevention and health promotion interventions, with a particular focus on its association with community engagement.

19 studies were included in the review. The review highlighted the importance of carefully contextualizing the interpretation of SoC, as this can significantly influence its role in disease prevention and health promotion interventions. Specifically, three key aspects of interpretation were identified. Firstly, the definition of the community to which SoC refers ("Which community?"): in the included studies, SoC was investigated among intervention participants, within community coalitions, and toward the place of residence. Secondly, the utilization of SoC as a generic and intuitive self-standing concept, not rooted in theoretical frameworks or as a theoretically defined construct ("What type of SoC?"). Thirdly, the manner in which this construct was studied, which underscored its expected role as a predictor of engagement but also its use as an outcome of the interventions ("How is SoC studied?"). When examining SoC among intervention participants, a prevalent use of generic SoC was noted, which served both as a positive outcome of interventions and as a contributing factor to participants' engagement. However, as the scope expanded to encompass broader communities and SoC became more theoretically grounded, these dynamics shifted. In this regard, when used as an intervention outcome, SoC did not show improvement when referred to the place of residence. Furthermore, positive associations between broader community-level SoC and engagement were well-documented only among community coalition members. Evidence for the engagement of the individuals targeted by the interventions, instead, was less robust, with fewer studies and weaker associations.

The findings of this review offer several considerations and implications for future research, as well as for public health policy and practice. Firstly, the review highlighted the current scarcity of empirical studies focused on SoC in the context of disease prevention and health promotion interventions, despite its recognition as a key element of community capacity for over three decades. This underscores the need for research moving beyond theoretical and conceptual assertions regarding the role of SoC, advancing these ideas into empirical investigations that test and validate such claims in practical settings. This inquiry may be also relevant within the broader framework of community capacity. In this regard, the review raises the question of whether the observed scarcity of empirical evidence for SoC also extends to other domains of community capacity, further highlighting the need for comprehensive research in this area.

The scarcity of empirical evidence primarily highlights a gap in the study of the relationship between broader community-level SoC and the engagement of individuals targeted by interventions. Specifically, although the evidence from the included studies reveals significant yet modest associations, the overall evidence base remains sparse. This means that, at present, it is not possible to confirm whether SoC can serve as a catalyst for community engagement across the general population, leaving ample room for further research. This is investigation is crucial not only for potentially enhancing the effectiveness of community-centered interventions by increasing engagement but also for ensuring their sustainable delivery. Ongoing challenges—such as aging populations, rising chronic disease rates, limited budgets, and disruptive events like the COVID-19 pandemic— are escalating health needs and straining the resources available to healthcare systems worldwide [66]. This necessitates a shift from the traditional assistance-based model toward public health approaches more focused on disease prevention and health promotion, which through the anticipation of health needs can deliver significant benefits also in terms of economic savings [67]. In this context, communities that can effectively engage in identifying their needs and developing disease prevention and health promotion solutions, becoming more proactive

and capable of managing their own care, are increasingly seen as a necessity rather than an option [13, 14]. Therefore, it is vital for future research and practice to understand whether SoC can truly serve as a key resource in fostering such engagement at all community levels, thereby supporting this process toward more proactive and autonomous communities. These considerations also carry significant implications for a possible redefinition of the roles of healthcare professionals. A promising direction lies in transitioning from sole providers to advocates of engagement practices, a shift that holds significant potential in sustaining health-promoting communities [68].

Despite the limited number of included studies, the review suggests that SoC significantly enhances community coalition members' engagement. This evidence aligns with a recent literature synthesis on coalition characteristics and outcomes [69]. Therefore, SoC should be regarded as a key determinant for understanding and contextualizing individual and collective participatory and collaborative dynamics within coalitions [70]. This highlights important implications for practitioners and policymakers, as encouraging the adoption of community coalitions could be a successful strategy, with SoC potentially playing a central role. Notably, this is even more relevant given the current trend of an increasing number of coalitions implementing initiatives aimed at promoting health within communities [71].

One last aspect worth highlighting about community engagement is that it encompasses a broad spectrum of philosophies, approaches, activities, involved actors, and types and levels of participation [12]. Various combinations of these elements can result in substantially diverse forms of engagement within interventions. In this review, we did not address this diversity due to the limited availability of structured discussions on engagement in the reviewed evidence. Specifically, identifying the specific form of engagement in the included studies was often challenging. However, different forms of engagement may relate with SoC in distinct ways, potentially carrying significant research and practical implications. Therefore, as the literature expands, future inquiries should explore the dynamics between SoC and community engagement in disease prevention and health promotion interventions, also delving into the details of engagement.

Regarding the use of SoC as an outcome, it is plausible that the observed lack of improvements before and after interventions stems from the intricate nature of this construct, which becomes more evident when examined within wider settings (i.e., when referred to the place of residence). Indeed, this complexity necessitates an understanding of various social, cultural, and historical factors at play [21, 22]. This makes it likely for individual interventions, especially those of limited scope and duration, to struggle in achieving significant changes. However, understanding how to impact SoC through public health interventions could be particularly relevant, given the literature's indication of the protective role of this construct plays in individuals' health and well-being [32–39]. In other words, interventions capable of strengthening SoC could have an indirect effect on improving people's health and well-being through SoC itself. In this sense, multifaceted and long-term approaches to designing and delivering interventions, which also aim to foster improved community dynamics and perceptions, may be key to achieving genuine cultural shifts and enhancing SoC [72].

Finally, some disparities in the findings of this review may arise from the use of the theoretically defined SoC as opposed to the generic one. This approach may have facilitated a more nuanced exploration of the construct and its role, potentially accounting for factors such as the diverse dimensions of SoC. While such assertions warrant in-depth scrutiny, this review underscored the presence of two distinct types of SoC in the literature, each playing a significant role in the analyzed studies. Therefore, future research should explore the relationship between generic and defined SoC, determining whether they share underlying similarities or function as entirely separate constructs.

Despite efforts to ensure a comprehensive review, several limitations should be acknowledged. Firstly, the search strategy employed may have resulted in the exclusion of relevant research addressing SoC that did not explicitly mention it in the title, abstract, or keywords. This may apply to studies on community capacity that incorporate SoC as a dimension without focusing on it as one of the primary topics. However, the search strategy was developed in accordance with well-established methodological guidelines for scoping reviews [42–44], and to specifically address the construct of SoC. This approach was also chosen because the literature on community capacity within the same context of disease prevention and health promotion has already been synthesized recently [19], beyond considering matters of feasibility. The scope of included studies was confined to English-language publications, potentially overlooking relevant research in other languages. Similarly, the exclusion of gray literature might have resulted in the oversight of some pertinent studies. The majority of the included studies were conducted in developed countries, particularly the USA, which could limit the generalizability of findings to other contexts. Furthermore, methodological heterogeneity among the included studies may have hindered comparability. Finally, although beyond the scope of scoping reviews [42], the absence of formal quality assessment and risk of bias appraisal may affect the

reliability of the review findings. These limitations call for further research to address these gaps in understanding.

Conclusions

In conclusion, the research questions of this scoping review can be addressed as follows:

RQ1: How has SoC been empirically addressed in the context of prevention and health promotion interventions?

The review highlighted a notable scarcity of empirical studies focused on SoC within disease prevention and health promotion interventions. This underscores the need for more empirical research to test and validate the role of SoC in practical settings. In the included studies, SoC has been examined among intervention participants, within community coalitions, and toward the place of residence. Studies varied in their approach, with some defining SoC as a generic, intuitive concept, while others considered it a theoretically grounded construct. Besides serving as a predictor of engagement, SoC was also utilized as an outcome of the interventions. These varying interpretations of SoC have a significant impact on its role in disease prevention and health promotion interventions. Therefore, understanding and appropriately contextualizing SoC is essential for accurately assessing its significance in this context.

RQ2: What is the empirical association between SoC and community engagement in this context?

The review highlighted a robust body of evidence supporting the positive association between SoC and engagement among members of community coalitions. Thus, establishing and strengthening local coalitions could serve as an effective strategy for public health practitioners and policymakers. However, the evidence for SoC's influence on engagement among the populations targeted by the interventions is less consistent. This disparity underscores a gap in the current literature. This indicates the necessity for further research to clarify whether SoC can indeed function as a resource to enhance engagement within disease prevention and health promotion interventions at all community levels. Understanding this relationship is crucial for optimizing the design and implementation of community-centered interventions, thus improving their effectiveness, but also ensuring their sustainable delivery. Amid escalating health needs and strained traditional resources, communities are increasingly expected to actively participate in managing their own care. Therefore, it is vital to determine whether SoC can foster widespread engagement, ultimately supporting the development of more proactive and autonomous health-promoting communities.

This review is timely in today's public health landscape, where immense pressure from consolidated trends and the recent pandemic is pushing healthcare systems worldwide to the brink of collapse. In this context, an urgent need has emerged to shift the focus toward prevention and health promotion approaches, as a model primarily focused on disease management is no longer sustainable. Additionally, as reaffirmed by the COVID-19 crisis, it is essential to center these efforts on communities. One of the key takeaways from this period is the critical role of building resilient communities that are not only better equipped to respond to crises but are also proactive in fostering long-term health and well-being. Thus, this shift away from traditional, assistance-based models of care cannot be just a temporary response but must represent a fundamental paradigm change necessary for the future of public health. Public health efforts must prioritize prevention, health promotion, and community engagement as core components of their strategies. SoC appears to have the potential to support this process. By systematically embedding SoC into the design and implementation of interventions, public health professionals could create more resilient and engaged communities capable of tackling both current and future health challenges. However, as highlighted in this review, further research is needed to substantiate this hypothesis. Future studies must explore the role of SoC across diverse contexts and how it can be leveraged to ensure that public health systems are better prepared to meet the evolving needs of communities in both ordinary and crisis times.

Abbreviations

SoC Sense of Community

Supplementary Information

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Supplementary Material 1

Supplementary Material 2

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Author contributions

Study conception and design (NS, SDR and SN); Data collection (NS); Data analysis and interpretation (NS and SDR); Drafting the initial and revised versions of the article (NS); Critical revision of the article (SDR and SN); Final approval of the version to be submitted (SN, SDR and NS).

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The datasets used and analysed during the current study are available from the corresponding author on reasonable request.

Declarations

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The authors declare no competing interests.

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