SCOPING REVIEW

Community health workers in Canada and other high-income countries: A scoping review and research gaps

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ABSTRACT

OBJECTIVES: Community health workers (CHWs) have been deployed to provide health-related services to their fellow community members and to guide them through often complex health systems. They help address concerns about how marginalized populations in many countries experience health inequities that are due, in part, to lack of appropriate primary health care services, possibly resulting in inappropriate use of higher-cost health services or facilities. This paper reviews studies on CHW interventions in a number of high-income countries, including Canada, to identify research gaps on CHW roles.

METHODS: A scoping review using 68 sources of interventions involving CHWs was undertaken. The five-step Arksey and O'Malley model guided this review with the aim of summarizing research findings and identifying research gaps in the existing literature on CHWs in Canada (23 sources). A standardized extraction tool was employed to synthesize the literature.

SYNTHESIS: We found that CHWs provide a wide range of health-related services but in a manner that, in Canada, is unrecognized and unregulated. In high-income countries, CHW interventions have contributed to health-related issues in communities and demonstrated potential to both reduce health inequity in marginalized populations and reduce the cost of medical services.

CONCLUSION: CHWs are an under-recognized, and therefore underutilized, public health workforce, which has a promising capacity to reduce health inequities in marginalized populations in Canada. There is growing support to suggest that CHW roles need to be better integrated within the broader health and social services systems to enable their full potential to be realized.

KEY WORDS: Community health workers; human resources; Canada

La traduction du résumé se trouve à la fin de l'article.

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Community health workers (CHWs) have been deployed in most countries (whether low-, middle- or high-income) to provide health-related services to their fellow community members and to guide them through often complex health systems. They help to address concerns about how marginalized populations and communities in many countries experience health inequities that are due, in part, to lack of appropriate primary health care services, possibly resulting in inappropriate use of higher-cost health services or facilities.[1–4] The World Health Organization (WHO) defines CHWs as "members of communities where they work, selected by and answerable to the communities for their activities, supported by the health system but not necessarily a part of its organization, and have shorter training than professional workers."[5] The 2006 World Health Report identified the use of CHWs as an important strategy to address the growing shortage of health workers, particularly in low-resource settings, as well as to achieve the health-related Millennium Development Goals.[6] The key research priorities related to CHWs in these settings are to know more about their recruitment and retention, the specific roles they play with various levels of the health system, their referral linkages, communications and the factors improving their performance.[6] In a follow-up review of CHWs, Lehmann and Sanders addressed the feasibility and effectiveness of CHW programs, finding that CHWs contributed to both community development and health care access.[1] Their effectiveness, however, was determined by their selection, training and support, and required strong ownership by the community. The question of whether they should be voluntary or remunerated remained unresolved.

High-income countries such as the US, the UK and Australia have increasingly attempted to shape CHW roles in their respective health and social systems in ways that will address some key gaps regarding access to and appropriate utilization of services, particularly in marginalized populations.[2–4] Aside from WHO's definition of CHWs, which tends to be focused on low- and middle-income countries (LMICs), there is no widely accepted definition of the concept for high-income countries (HICs). The American Public Health Association has developed a

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definition of CHWs that is employed mainly in the US and that loosens the classic CHW criterion of recruitment exclusively from within local communities, although specifying that CHWs must have a trusting and close relationship with the community they serve.[7] We currently know very little of the role that CHWs play in Canada, despite there being a number of potentially promising models.[8]

The objectives of our study were to 1) map relevant literature on different health interventions involving CHWs in a number of HICs (e.g., US, UK, Australia, Spain and the Netherlands), including Canada, with a focus on interventions that have been evaluated; and 2) identify research gaps in the existing literature on CHWs in Canada in comparison with CHW interventions in these other HICs.

Table 1. Search terms for community health workers

Community health workers
Community health representatives
Lay health workers
(Women) health educators
Paraprofessional health workers
Community health aides
Promotoras (promotores)
Lay health promoters
Immigrant care workers
Aboriginal health workers
Multicultural health brokers
Lay home visitors
Health trainers
Community navigators

METHODS

We adopted the five-stage scoping review methodology developed by Arksey and O'Malley: identifying the research question, identifying the relevant studies, inclusion and exclusion, charting the data, and collating, summarizing and reporting the results.[9] Arksey and O'Malley define a scoping review as

> *"a technique to 'map' relevant literature in the field of interest … [which] tends to address broader topics where many different study designs might be applicable … [and] is less likely to seek to address very specific research questions nor, consequently, to assess the quality of included studies." (ref.9, p.20)*

Scoping reviews are generally conducted for a number of different reasons, including identification of research gaps in the existing literature, which was our objective with reference to Canadian research literature on CHWs.

We started the review with the question "What do we know about CHWs in Canada and in other HICs that could inform Canada?" Our search terms and sources were broad enough to capture all types of study design. The search process was iterative: as familiarity with the literature increased, the search terms and sources were redefined to allow more nuanced searches to be undertaken. Since the concept of CHW is so broadly defined and defined differently across countries, we decided to focus our review on CHWs who worked in the fields of health promotion, disease prevention, access to health services, health literacy, community development and social determinants of health. Initially, all MeSH (Medical Sub Headings) and keywords related to CHWs (Table 1) were identified and a search was conducted in various sources. Online databases Medline, Embase and CINAHL were searched twice. Google scholar, the Canadian Health Human Resources Network Library and websites of Canadian community-oriented health organizations were searched for grey literature. The search terms picked up a large number of sources. The initial literature review increased familiarity with the concept and helped us to develop systematically inclusion and exclusion criteria. The broader question remained the same, but the definition of CHW was refined. After the initial search, for example, a number of concepts such as 'personal support worker', 'home care workers', and 'long-term care workers' were excluded from the second round of search. The inclusion and exclusion criteria (Table 2) resulted in 68 retained sources (Figure 1). The literature was imported into the software program Refworks.

We then developed a literature extraction tool to obtain key information from the academic and grey literature. We applied a qualitative approach using open coding and inductive reasoning to identify themes in the literature and to develop categories for further coding and sorting. The data were extracted into an Excel database sheet. The extracted data were a mixture of general information about the study and specific information relating, for example, to the type of CHWs, the geographic area and the population being served, the field of service by CHWs, and CHW recruitment, training, accreditation and tasks.

For the 68 literature sources, a series of charts were created from the categories coded in the Excel database. To create each chart, the number of sources in each category was calculated along with the total number of sources. A summary of the synthesized findings is reported below.

Table 2. Inclusion and exclusion criteria for literature review

Inclusion criteria	Exclusion criteria
• Papers published in English	• Published in other language than English
• Papers related to Canada, US, Australia and Europe	• Papers not related to Canada, US, Australia and Europe
• Papers with main focus on community health workers (CHWs)	• Papers not mainly focused on CHWs, (papers with focus on personal support workers, home care workers, home health aides, long-term care workers)
• Papers focused on health promotion, disease prevention, access to health services, health literacy, community development and social determinants of health	• Papers focused on personal support care, home care, hospital care and long-term care
• Published after 2005	• Published before 2005

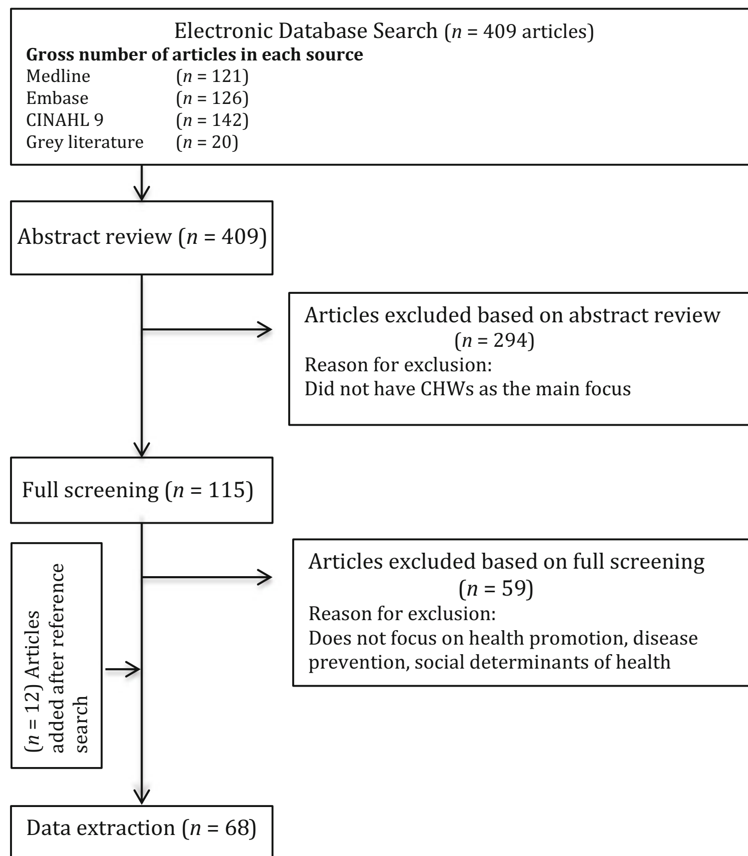

Figure 1. Flowchart of articles included in the review

RESULTS

The scoping review included a large number of empirical studies (excluding evaluation of CHW interventions) followed by evaluation of CHW interventions (a specific and important type of empirical study) and literature reviews, with some academic and organizational reports (Table 3). Most sources were from the US (36) followed by Canada (23), the UK (4), Australia (3), Spain (1) and the Netherlands (1). Most sources focused on marginalized populations (42) (i.e., Aboriginal peoples, immigrants and other socially excluded populations). Common areas of service of CHWs were general health promotion/education, and access to specific health/disease-focused services and to screening (Table 4). The most common terms for CHWs were 'community health workers' and 'community health representatives', although nine other titles were also encountered (Table 5).

Table 3. Study design

	Canadian	High-income countries	Total number of articles
Empirical study	7	13	20
Evaluation of intervention	9	9	18
Literature review	4	10	14
Systematic review		4	4
Commentary/opinion	1	8	9
Policy research		5	5
Theoretical	3	0	3
Explorative, experience-based	1	1	2
Academic report		1	1

Who are CHWs and how are they defined?

Our scoping review suggests that CHWs and the activities they undertake are best seen as creating connections between the communities they serve, and health and social service systems. More than 120,000 CHWs are estimated to be working throughout the United States.[10] Most of these CHWs work in short-term, grant-funded projects targeting specific health issues such as immunization or health literacy campaigns.[10] In Canada, there are no such data regarding the number of CHWs in service, except those working with Aboriginal populations, and these are known as community health representatives (CHRs). CHRs are described as "front-line community workers who perform a broad range of health-related functions ranging from environmental health to health care delivery, medical administration, counselling and home visits, education and community development, and mental health." (ref.11, p.405) Across Canada, there are roughly 1,000 CHRs who serve First Nations and Inuit communities, 90% of whom are women.[11,12] From the literature we were able to identify 18 other unique examples of CHW employment across Canada, although we believe the list is far from comprehensive (Table 6): it reflects only those CHWs about whom an article or report has been written.

Table 4. Areas of service of community health workers

	Area of service	Canada	High-income country	Total
General health promotion and access	Health promotion & education Access to health care Primary health care Community development Determinants of health	12	24	36
Specific health-/disease-related studies	Diabetes		6	6
	Heart health		1	1
	Mental health	1	1	2
	HIV detection and prevention	1	1	2
	Maternal and child health and nutrition	6	4	10
	Other	1	1	2
Screening	Breast cancer screening	1	2	3
	Cervical cancer screening	1	1	2
	Colorectal cancer screening		1	1
	TB screening		1	1
	Hepatitis B testing	1		1
Cost analysis	Cost analysis		1	1
Research	Research	2	1	3

Recruitment

CHWs in some HICs are recruited by community-based organizations or by public health organizations with the intent that CHWs are from the community they serve or have similar living conditions and experiences as the service population. In Canada, however, CHWs are most commonly recruited by public health organizations, followed by community-based organizations, although in both instances emphasis is placed on CHWs coming from, or being closely linked to, the community they serve.[13–17] In Aboriginal communities, CHRs are employed by organizations funded through health care systems to provide primary health services in remote settings. In urban settings, where communities may be scattered in different parts of the city, community origin or knowledge about community is taken into account by the organization deploying CHWs without the communities necessarily being consulted.[18,19] Aside from organizational recruitment, there are post-secondary educational programs intended to train and to lead to employment of Aboriginal CHWs.[20]

Education and training

The most common type of training for CHWs in HICs discussed in the literature is on-the-job training, in which CHWs are trained by the organization that employs them.[21] Health organizational training, such as certificate programs offered by health departments, and educational institution training are also widely discussed in the literature on HICs, although mainly with reference to the US.[21] We identified three types of education and training for CHWs in Canada: organizational training programs, institutional training programs, and on-the-job training. Health organizations in different parts of Canada have initiated training programs for CHWs to meet the needs of their population.[16,17] For example, the Cree Board of Health and Social Services of James Bay, which operates a hospital, social services and several community clinics, implemented a program to train CHRs.[12,16,17] Educational institutes such as Confederation College in Thunder Bay, Ontario, and Alberta Vocational College in Lac La Biche, Alberta, started CHR training programs in 1988 and 1973 respectively[16,17] to meet the health needs of First Nations populations in different parts of the country. The most common type of training in Canada, as in the US, is on-the-job training, in which organizations that recruit CHWs for specific purposes train them according to their needs, such as overall health promotion,[14,19] pregnancy issues[19] and infant feeding.[15]

Table 5. Type of community health worker

	Canadian	High-income country	Total
Community health workers	3	30	33
Community health representatives	11	1	12
Lay health workers/promoters/advisors	3	6	9
Promotoras (promotores)		3	3
Aboriginal health workers	1	2	3
Community nutrition workers	1	1	2
Community health aides	1		1
Community navigators		1	1
Health trainers		1	1
Paraprofessional home visitors	2		2
Women health educators	2		2

Accreditation and recognition

Recognition of CHWs by the health system has two important impacts: 1) it adds credibility to CHW services in the community[15,18,22] and 2) it positively affects their compensation. In the US, 'Community Health Worker' was included as a standard job classification by the US Department of Labor in 2010, but only four states (Ohio, Texas, Minnesota and Massachusetts) have officially recognized the job category of CHW,[4,21,23] and another four (California, New Mexico, Oregon and Pennsylvania) have filed or passed legislation to certify or recognize CHWs.[7] Minnesota has a standardized CHW curriculum to be offered at colleges and universities, a defined CHW scope of practice and legislature authorizing reimbursement for the services of trained CHWs under Medicaid.[4] Inspired by the CHW's role, the UK also established a public health position in 2004 within its National Health Service to address health inequalities in the most disadvantaged and marginalized communities.[2,24] By early 2009, 76% of its primary care trusts had a service provider named 'health trainer.' National job descriptions, competencies and a system of accreditation were

Table 6. Models of community health worker (CHW) interventions in Canada

Province	Organization & title of CHW
British Columbia	REACH Community Health Centre in Vancouver, BC, Cross-Cultural Health Promoter
	Umbrella Multicultural Health Co-op in Vancouver, BC, Cross-Cultural Health Promoter
Alberta	Multicultural Health Brokers Cooperative in Edmonton, AB, Multicultural Health Broker
Manitoba	Society for Manitobans with Disabilities in Winnipeg, MB, Cultural-Resource Facilitator
	Manitoba Immigrant Refugee Settlement Section Association in Winnipeg, MB, Health Committee
	BreastCheck Program, Cancer Care Manitoba, Community Facilitator and Community Support Worker
	Welcome Place in Winnipeg, MB
Ontario	Healthy Living Division, City of Hamilton Public Health Services in Hamilton, ON, Women Health Educator
	The CASTLE Project (Creating Access to Screening and Training in the Living Environment)
	Latin American Women's Support Organization (LAZO) in Ottawa, ON, Lay Health Promoters
	McMaster School of Nursing in Hamilton, ON, Community Health Broker
	South West Regional Cancer Program in London, ON
	Jewish Family Centre in Ottawa, ON, Navigator
	Somerset West Community Health Centre in Ottawa, ON, Multicultural Health Navigator
	Projenesis in Ottawa, ON, Lay Health Promoters
	Toronto Public Health, Healthy Families Early Years, Toronto, ON, Peer Educators
	Cancer Awareness: Ready for Education and Screening (CARES) Project in Toronto, ON,Peer Leader/Lay Health Educator
Quebec	Les Relevailles de Saint-Michel in Montreal, QC, Les marraines

also developed simultaneously.[24] In contrast, there remains a lack of recognition and accreditation of CHWs in Canada. The oldest established CHW group in Canada comprises CHRs serving mainly First Nations, Inuit and Metis populations, especially in rural and remote areas; they still do not have a standard accreditation program.[8,12]

Compensation

CHWs' compensation is strongly linked with their accreditation and recognition nationally. A national study in the US found that more than two thirds of CHWs are paid, while there are also volunteer workers across the country.[21] The study suggests that equitable compensation for their services is an important step towards CHWs' integration within the broader health system of the country. In Canada, CHWs are often compensated by the health organization for which they are working.[13,17,20,25] They are either employed full-time or part-time,[13,20] or remunerated for specific services,[25] although some work as volunteers.[14,26] Sometimes public health departments support a particular public health program financially but do not pay wages for CHWs.[22] There is a policy for equitable pay of CHRs in Aboriginal communities, but band councils have been known to hire CHRs under different titles in order to pay lower wages than required if the CHR title had been used.[8,27]

Types of CHW

The types of CHW vary depending on the CHW title, geographic area and populations they serve, and their area of service. The titles used for CHWs can be used to identify their types, e.g., 'promotoras' and 'promotores' are the terms used for, respectively, female and male CHWs serving Spanish-speaking populations in the US. CHWs in Canada have various titles. Some terms refer mainly to the task or focus of these workers (e.g., nutrition worker, multicultural health worker, home visitor), whereas others reflect the population they serve. Since language and cultural barriers decrease appropriate health care utilization and increase inappropriate utilization, recent immigrants in HICs are a major target group of CHWs.[28,29]

Tasks undertaken by CHWs

In HICs, CHWs provide a wide range of services according to the needs of the community and the mandates of the organization they work with/for.[21,30] In general, CHWs are considered to be a bridge between communities and the health system. On the one hand, they guide community members to appropriate services, thus avoiding unnecessary hospitalization and other acute care while on the other hand they provide necessary cultural and contextual information for professional health care providers to build their cultural competence, helping to improve patient-provider communications.[30]

Most CHW tasks in Canada, like those in other HICs, focus on health care for the marginalized populations, including improved access to and utilization of health services, and development and implementation of health promotion or disease prevention programs. Much of the literature describes CHR programs targeting the Aboriginal population[12–14,20,31] or the role of CHRs in improving social capital, cohesion and social support as important determinants of Aboriginal health.[2,32,33] Other studies have documented the role of CHWs in maternal health programs,[15,22] dental health for preschool children,[18] hepatitis B testing,[25] HIV/AIDS prevention,[27] community development more generally[16] and nutrition programs.[17] In addition, for research purposes, CHWs are employed to collect data from the communities they serve[15,18,22,34] or are identified as key informants regarding those communities.[11,18,19,32,33,35]

Community knowledge

Community knowledge is essential to the roles of CHWs. First, community origin or in-depth knowledge of the community is necessary to build trust, respect and mutual understanding between the CHWs and the communities they serve.[1,3,4,8] CHWs are thought to understand well the needs of their communities, mainly because they have lived and/or experienced those same needs. Second, unlike clinic-based health workers, CHWs often live in the communities where they work and provide services whenever required, extending beyond customary working day hours.[3,4] The importance of having this community knowledge is usually taken into account at the CHW recruitment stage.

Evaluation studies

Evaluations of CHW interventions in HICs (excluding Canada, where few such studies exist) generally have three major findings. First, CHW interventions have positive health outcomes for the population served. Systematic reviews, empirical studies and meta-analyses demonstrate that CHW interventions can improve, and have contributed to, a range of health issues, such as screening among immigrants[28,29,36,37]

and other marginalized populations,[37] diabetes and asthma management,[36,38,39] healthy heart lifestyle,[40] maternal and child health services,[41] healthy eating habits, blood pressure reduction, patient enrolment in research, child development, early intervention services,[35,42,43] health care utilization, and some disease prevention and public health concerns.[36,44]

Second, evaluations of CHW interventions have indicated their potential to reduce health disparities in marginalized populations. Addressing mainly health issues related to culture, ethnicity, race, gender and language, CHW interventions have mostly tackled health inequities among immigrants, Aboriginals, and low-income and homeless populations.[21,24,44,45]

Finally, because of the focus of CHW interventions on primary health care, health promotion and disease prevention, these interventions have demonstrated both actual and potential control of high costs of medical services and inappropriate use of emergency services when and if CHWs and their interventions are integrated into health care systems.[46–48]

DISCUSSION

Despite a growing literature on the positive health outcomes of CHW interventions, CHWs are still a relatively underutilized human resource in the health care systems in most HICs, including Canada, where they are both unrecognized and unregulated.[8] This situation in Canada has been attributed to the lack of "a single definition for CHWs; data on composition, competencies and size of workforce; a registry of workers; a national occupational classification; a standard curriculum; and a common nomenclature."(ref.8, p.308) Complementing the issue of regulation and recognition of CHWs, there is a large and substantive literature that recommends formalization of CHWs into broader health and social service systems for reasons such as reduced health inequity, cost control and transformation from a disease-centred acute care system to a system focused on patients and their well-being.[42,46] Below, we summarize what is known regarding CHWs in HICs (including Canada) and, on the basis of this information, what remains unknown and important to ask about the Canadian CHW workforce.

What's known

1. CHWs and CHW interventions have risen out of a need to serve marginalized communities in HICs. The title they are given may vary, they may have different training and education, and they may be remunerated or not. Addressing mainly health issues related to culture, ethnicity, race, gender and language, CHW interventions have mostly aimed to tackle health inequities in marginalized populations, such as immigrants, Aboriginals, and low-income and homeless populations.[19,21,34,46]
2. There is evidence to suggest that their approach to health is comprehensive. Their tasks vary from health service navigation and primary health care and social services provision to community development and advocacy with respect to the social determinants of health.[21]
3. Evaluations of CHW interventions in HICs generally indicate positive health outcomes, reduced health disparity in marginalized populations, and actual or potential control of high costs of medical services and inappropriate use of emergency services.

What's not known

1. Despite studies on specific CHW models in Canada (i.e., multicultural health brokers in Edmonton, community health representatives),[13–15,20,26,27,34,41] there is little to no evidence about the complete picture of CHW interventions across Canada or their (potential) ability to improve access to primary health care for marginalized populations and reduce inappropriate use of acute care services, such as emergency departments.
2. There is little evidence about the role of CHWs in interacting with organizations that deal with social determinants of health, such as sanitation, housing, nutrition, job creation, early child development.
3. There is a lack of evidence on the enablers and barriers to health care and social services navigator roles of CHWs, notably so in Canada.
4. The cost-effectiveness of CHW interventions in working alongside, and generally supporting, the provision of medical care services in primary care or hospital settings is unknown.

CONCLUSION

CHWs throughout the world, and especially in LMICs, are critical resources in providing primary health care services, increasing access to formal health care systems, initiating actions on social determinants of health and working on health promotion and disease prevention programs aimed at reducing health inequities. Several HICs have developed policies that have begun to formalize CHW roles within their health systems.

In Canada, CHWs are sporadically deployed but largely unrecognized, representing an unregulated public health workforce that is often marginalized from the formal health care system. This limits the potential impact CHWs might have in reducing health inequities, linking marginalized communities to health and social services, and potentially reducing inappropriate health care utilization. Our scoping review suggests that CHWs and the interventions they currently undertake are best seen as bridging the communities they serve and government health and social service systems. This bridging position has given rise to different models of CHW organization and practice dependent on how community-controlled or independent they are, or integrated within formal health and social service systems. A more thorough mapping and investigation of the CHW landscape in Canada, and the practice models CHWs follow, is needed if the potential of CHWs documented in LMICs and other HICs is to be better realized.

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RÉSUMÉ

OBJECTIFS : On déploie des travailleurs en santé communautaire (TSC) pour qu'ils offrent des services liés à la santé à leurs concitoyens et qu'ils les guident à travers les systèmes de santé souvent complexes. En effet, les populations marginalisées de nombreux pays sont victimes d'iniquités face à la santé, en partie à cause du manque de services de santé primaire adaptés, ce qui peut entraîner l'utilisation inappropriée des services ou des installations de santé plus chers. Notre article examine les études des interventions des TSC dans certains pays à revenu élevé, dont le Canada, afin de cerner les lacunes dans la recherche sur le rôle des TSC.

MÉTHODE : Nous avons mené une étude de champ à l'aide de 68 sources d'interventions impliquant des TSC. Le modèle en cinq étapes d'Arksey et O'Malley a orienté cette étude dans le but de résumer les résultats de recherche et de cerner les lacunes dans la documentation existante sur les TSC au Canada (23 sources). Un outil d'extraction standardisé a servi à résumer la documentation.

SYNTHÈSE : Nous avons constaté que les TSC offrent un vaste éventail de services liés à la santé, mais d'une manière qui, au Canada, n'est ni reconnue, ni réglementée. Dans les pays à revenu élevé, les interventions des TSC jouent un rôle dans les dossiers de santé à l'échelle communautaire et ont le potentiel de réduire à la fois les iniquités face à la santé au sein des populations marginalisées et les coûts des services médicaux.

CONCLUSION : Les TSC sont une main-d'œuvre mal reconnue (et donc sous-utilisée) en santé publique, mais ils présentent la capacité prometteuse de réduire les iniquités face à la santé au sein des populations marginalisées au Canada. On appuie de plus en plus l'idée que le rôle des TSC devrait être mieux intégré dans les systèmes de la santé et des services sociaux en général pour que ces travailleurs puissent donner leur pleine mesure.

MOTS CLÉS : travailleurs en santé communautaire; ressources humaines; Canada