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Abstract
Nursing associations' choices to engage in community environmental health transpires in a complex decision-making context in which a number of issues compete for their attention and a number of factors influence their choices. Given the complexity of this decision environment, theoretically informed research can lead to understanding about the dynamics, supports, and constraints shaping nursing associations' decisions. We propose a conceptual framework to guide research to understand whether and how nursing associations' take action for community environmental health. The framework depicts nursing associations' priority setting and policy advocacy for community environmental health embedded in a policy decision-making context in which internal association factors and external factors at all system levels (local to global) influence the organizational choices and actions taken.

Key words community environmental health, conceptual framework, decision-making, nursing associations, socio-ecological systems change

Priority Setting and Policy Advocacy for Community Environmental Health by Nursing Associations: A Conceptual Framework to Guide Research

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Introduction

Nurses and other health care professionals have the ability to influence system and policy change for improved community environmental health.[1] Influencing system and policy change requires that nurses organize, speak, and act as a united front provincially/territorially, nationally, and internationally.[2] Nursing associations provide vehicles through which nurses, as a collective and with partners, can take political action across system levels.[3-5] However, environmental health is one of many policy issues that are of concern to the nursing profession.[6] Thus, nursing associations are charged with making choices about which policy issues should take precedence and what strategies should be taken. Little research is available that explores how nursing organizations chose among competing priorities, and in particular social and environmental public policy issues that involve cross disciplinary, jurisdictional, and sector collaborations.[7]

This paper proposes a conceptual framework that depicts nursing associations' priority setting and policy advocacy for community environmental health. The framework was developed for the purpose of guiding doctoral research. We begin with a background that provides conceptualizations of what we refer to as community environmental health and community environmental health policy. Descriptions of the community environmental health policy context and the need for a nursing presence in shaping policies are provided. We examine and report the evidence that describes nursing associations' policy work for community environmental

health. Using socio-ecological whole systems change lens, we then propose ways forward for understanding nursing associations' policy choices and actions. We conclude by proposing a conceptual framework that depicts nursing associations' priority setting and policy advocacy for community environmental health. The implications of the framework for research and nursing associations' priority setting and policy advocacy are discussed.

Background

Community environmental health

In its broadest definition, behavioural, social, natural, and physical components make up the total human environment.[8] In relation to health, Pruss-Ustun & Corvalan[8] suggested a practical definition, whereby environment is more narrowly conceived as "all the physical, chemical and biological factors external to the human host, and all related behaviours, but excluding those natural environments that cannot be reasonably modified".[p21] Recent nursing literature underscores the reciprocity of human and natural systems that co-exist and co-evolve. For instance, Laustsen proposed that the term ecosystem more accurately depicts human-environment health as it encompassed "the dynamic, interrelating, and relational nature of organisms and their environments".[9 p44] Attention is drawn to the intricate relationships among biotic and abiotic relationships that comprise the human-health ecosystem. Scholars have argued that healthful human-environments are produced by people participating within their surrounding environments in ecologically sound ways.[10-11] Furthermore, human-environmental health is shaped by practices, conditions, and relationships at the local, sub-national, national, and global scales.[12] Building on this work, we use the term community environmental health in this paper to refer to human-ecosystem health, generated through human participation with natural, physical, chemical and biological systems and supported through ecologically sound practices and policies at different levels of geographic scale and time (note this conceptualization does not include occupational environments).

Community environmental health policy

Multi-disciplinary, multi-sector, and multi-jurisdictional public policy responses are needed in order to address the complex and multi-causal nature of community environmental health issues.[13-14] Broadly, public policy refers to both action and inaction by public authorities to address a problem or interrelated set of problems in the interest of larger groups, organizations, or communities (distinguished from case advocacy that aims to solve problems for individuals or families)[15-16] When applied to community environmental health, public policies refer to those that address human-ecological health. More specifically, community environmental health policies aim to promote healthful practices, conditions, and relationships for improved human-ecological health.

Three categories of community environmental health policies for which nursing could advocate: those that affect the healthfulness of settings, such as homes, workplaces, schools, or communities; those that influence the quality of ecological systems such as water, air, land; and those that target the local, sub-national, national, or international governments that are responsible for policies that influence the health of human environments.[11,17] These policies employ a number of mechanisms, referred to as policy instruments, including regulations and standards, taxes and charges, voluntary agreements, subsidies and financial incentives, information, and research and development.[18] Most often packages of policies are required to address community environmental health problems along "multiple points of interaction or multiple points in the chain of cause and effect".[14 p24]

Community environmental health policy context

Stakeholders engaged in community environmental health issues are immersed in a complex policy field involving diverse and policy arrangements, multiple actors, multiple sectors, and multiple jurisdictions with varying constitutional authorities. Community environmental health policies are created and administered by various government departments, agencies, and sectors, often with shared constitutional authority but diverse mandates.[17] In addition to political leaders, and depending upon the community environmental health issue, a number of other stakeholders could also be involved including the public, media, scientists, industries, and non-profit organizations.[19-20] Ambiguity and disagreement about the problems, their solution, and the evidence, as well as incomplete evidence add complexity and challenges for those attempting to influence community environmental health policy.[14,21]

Need for a stronger nursing association presence in community environmental health

Recent reports suggest nursing associations should

have a stronger presence in advocating for community environmental health and propose a range of ways they could contribute.[22-26] Nursing associations are encouraged to provide education and share information with nurses, the public, and other professional groups;[22-23,27] to join coalitions for improved environment conditions (e.g. reduce air pollution, urban redesign, increased public transit; caps on emissions);[23] to develop position statements;[24] to conduct research[24], to lobby legislators and governments for stricter environmental legislation and policies and investment in renewable energy,[23-24,27] to encourage other international professional bodies and their members to lobby their governments to promote sustainable environments,[27] and to advocate for governments and international agencies to mitigate the impact of industrial and economic policy on the environment.[24] The International Council of Nurses[25] suggested national nursing organizations could play a strategic role in reducing global environmental health hazards and be part of multi-sectoral measures to mitigate the impact of climate change on populations, particularly for those most vulnerable.[26] Thus, there are a number of community environmental health issues, strategies, and targets for which nursing associations could take action.

Examining the evidence for nursing associations' engagement in community environmental health

We conducted a literature review to identify research that explored or explained how nursing associations were engaged in community environmental health policy setting and advocacy. Using a search strategy designed with the assistance of a professional librarian, six electronic databases from the years January 1999 to October 2010 were searched (Refer to Table 1 for further details about search terms for database searches). In addition to the database search, a manual search of reference lists was conducted for retrieved articles (e.g. editorials, commentaries, reports) that were directly related to nursing organizations involvement in environment. The search also included a grey literature of websites for Canadian and international nursing organizations, nursing academic institutions, the Canadian government, and health organizations (Refer to Table 2 for search terms used for grey literature search). The combined search yielded 1,864 papers.

Table 1: Search terms for databases

SH Terms for Nursing Organization	MESH Terms for Environment
(MH "Nursing Organizations+") or (MH "Student Nurses Organizations+") or (MH "State Nursing Organizations+") or (MH "Nursing Organizations, International+") or (MH "National Federation for Specialty Nursing Organizations") or (MH "New Zealand Nurses Organization") or (MH "Nursing Organizations Alliance") or (MH "State, Provincial and Territorial Nursing Organizations+") or (MH "American Organization of Nurse Executives")	(MH "Natural Environment") or (MH "Environment") or (MH "Work Environment+") or (MH "Environment, Controlled+")

Table 2: Search terms for grey literature search

Key word searches	Sites searched
a) Environmental health in nursing based websites b) Nursing organization or nursing association in other websites	Nursing websites examined: 13 Canadian nursing organization; the International Council of Nurses; the American Nurses Association; and several state nursing organizations that had publications related to environmental health (e.g. newletters, position statements) including the Maryland Nurses Association and Texas Nurses Association, and specialty organizations such as the American College of Nurse-Midwives and Oncology Nursing Society. Other websites examined: EnvirRN University of Maryland School of Nursing; Canada's Department of Health and Department of Environment; Friends of the Earth; and Canadian Physicians for the Environment; World Health Organization

Screening entailed a three-stage process using pre-determined inclusion and exclusion criteria starting with titles, followed by abstracts, and then full text review of papers. (Refer to Table 3 for further details about inclusion and exclusion criteria.) Papers that did not meet inclusion criteria were eliminated. When uncertainty existed about the eligibility of papers based on either the title or abstract assessment, full articles were retrieved. A total of 162 papers were retrieved for abstract or full review. (Refer to Table 4 for further details about yields from literature search.) These articles were then screened using the inclusion and exclusion criteria.

Findings from literature review

Only one study[28] was identified that reported nursing associations' work for community environment health. This extremely low yield suggests this is an underdeveloped area of study. However, the literature review also revealed the substantial public policy work undertaken by nursing associations for community environmental health, which is primarily charted in editorials or commentaries, discussion papers, reports, reflective reviews, and historical accounts (with no formal research methodology). This anecdotal evidence described nursing associations' involvement in a broad array of community environmental issues including green health care, pesticide legislation, green energy, climate change and Kyoto Accord commitments, and environmental carcinogens and exposures.[19,22-23,29-32] A number of tactics have been employed to address community environmental health. For instance, nursing associations have conducted surveys to identify public concerns, and to explore nurses' needs related to their community environmental health practice.[5] They have responded to concerns by developing background papers,[22-23,31] position statements,[25,27] and environmental health principles.[33] Some nursing associations have lobbied for pesticide and carcinogen legislation, environmentally responsible activity in the health sector, and safe drinking water.[17,25-26,28-29,32,34] Some have participated in interdisciplinary and government committees (e.g. Friends of the Earth, Environment Canada)[22] and engaged in community environmental health initiatives involving many partners (e.g. medical associations, industries, and scientists)[31] as part of their community environmental health efforts. However, the absence of empirical research to investigate this work leaves minimal opportunity to understand the factors that support or hinder their choices or actions.

This anecdotal evidence further points to the complex environment in which nursing associations' make choices

Table 3: Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
a) Described work undertaken by a nursing organization b) Original research including qualitative and quantitative research and systematic reviews c) Described community environmental health issues c) Published in English d) Published between January 1999 and September 2009	a) Studies about independent nurse priority-setting or policy advocacy efforts b) No research design or methodology described c) Theses, dissertations, discussion papers, commentaries, and editorials

Table 4: Yields from search

Database	Total finds	Yield
CINAHL	481	77
PubMed	276	23
HealthStar	102	9
ABI Inform/Global	762	43
Cinoebdex	243	10
Greenfile; Web of Science/ BIOSIS; Scopus	Yields to specific earth, physical, and chemical sciences (links to human health not part of research)	0
Total	1 864	162

and take actions for community environmental health. There are a number of issues for which nursing associations could take action. Addressing community environmental health entails a series of independent and collaborative efforts. Tactics may include direct (e.g. lobbying) or indirect (e.g. developing position statements) efforts. Collaboration for community environmental health, in turn, may involve any number of actors from diverse disciplines and sectors and involve efforts with national, sub-national, and local governments. In this context, understanding the dynamics, supports, and constraints shaping nursing associations' community environmental health work would benefit from a socio-ecological lens.

Understanding choice through a socio-ecological systems change lens

In a recent scoping review,[7] it is argued that given the considerable intricacies of nursing organizations structural arrangements and systemic environments, the particular challenges encountered when addressing cross sector health and social policy, and the paradoxical responses by organizations exposed to common events and conditions, a socio-ecological whole systems perspective would be appropriate to understand their policy decision-making processes. Exploring nursing associations' decision-making from this perspective views whole systems change as "uneven, nested cycles of adaptation that evolve within closely coupled, complex socio-ecological systems over time."[35 p2]

More specifically, whole systems socio-ecological thinking as described by Gunderson and colleagues[12,36] and as applied to understanding and managing health systems change[37] could facilitate the exploration of contextual factors and their interplay in shaping individual and organizational choices, and dynamic changes that occur at varying times and across system levels. Furthermore, nursing associations and related systems (e.g. legal system) are believed to co-evolve over time through "interplay between processes and structures that sustains relationships on the one hand and accumulates potential on the other."[12 p102] MacDonald and colleagues[7] further argued that attention to closely coupled professional, legal, social, economic, political, and ecological systems may lead to the identification of any number of leverage points or blockages. This socio-ecological perspective is complemented by the decision-making literature, which identifies decision-making as a social process embedded within complex systems. We consider this literature in the next section.

Decision-making: A social process embedded in complex systems

Vroom and Jago[38] suggest decision-making by organizations is a social process that can be understood through examination of both its prescriptive and descriptive dimensions. The prescriptive dimension looks to the rules that are applied to rational groups to facilitate decision-making.[38-39] Understanding the prescriptive dimension of nursing organizations' decisions for community environmental health, for instance, would require attention to the types of problems the decision-makers identify, to the types of data used to make judgments, and to the set of decision rules used to adjudicate among alternatives. The descriptive dimension, on the other hand, is concerned with how decision-makers actually decide (not how they ought to decide) and the patterns, regularities, or principles in the way groups chose in given situations.[38-39] Understanding nursing organizations' decisions for community environmental health would require an examination of the processes of decision-making and the determinants that shape choices and actions. These determinants include both "hardware" and "software" components.[40]

Authors[40] have argued that questions related to health policy decisions have been skewed by a focus on a system's "hardware" such as levels and types of human resources and organizational structures and legislation. However, human activity systems (such as organizational decision-making for public policy) that include human actors who have foresight and intentionality, can attribute different meanings to what they perceive, can communicate, and can use technology[12,41] would benefit from more attention to "software components" or the social processes, practices, and ideas that drive decisions. Software components include "ideas and interests, values and norms, and affinities and power that guide actions and underpin the relationships among system actors and elements."[40 p 2] Software components are evident in institutional theory, which contributes to systems theory by drawing attention to institutional influences that operate to support or constrain organizational behaviour and choices.[42]

Institutional theory: Attention to the software context for decision-making

According to institutional theorists and researchers,[19,43-46] institutions are established when actions are repeated, given

similar meaning, and become widely accepted. These institutions may not be readily apparent or known, but operate to regulate behavior, and to shape goals, priorities, standards of practice, and codes of conduct.[43] While institutions are often resistant to change, scholars further contend that organizations possess the autonomy to make purposeful, strategic, and opportunistic choices.[44]

More specifically, Scott[43] contends that three broad forms of institutional factors help explain organizational behaviour and decisions: regulative, normative and cognitive institutions. First, regulative factors refer to formal rules, policies, laws, or regulations, which exert their pressure through forms of coercion, threats, or inducements.[45] Organizational behaviours are thus driven by a need for expedience or compliance. Examples of regulatory factors potentially relevant to nursing associations' choices include governance models, by-laws, codes of ethics, and government regulatory or corporation acts.

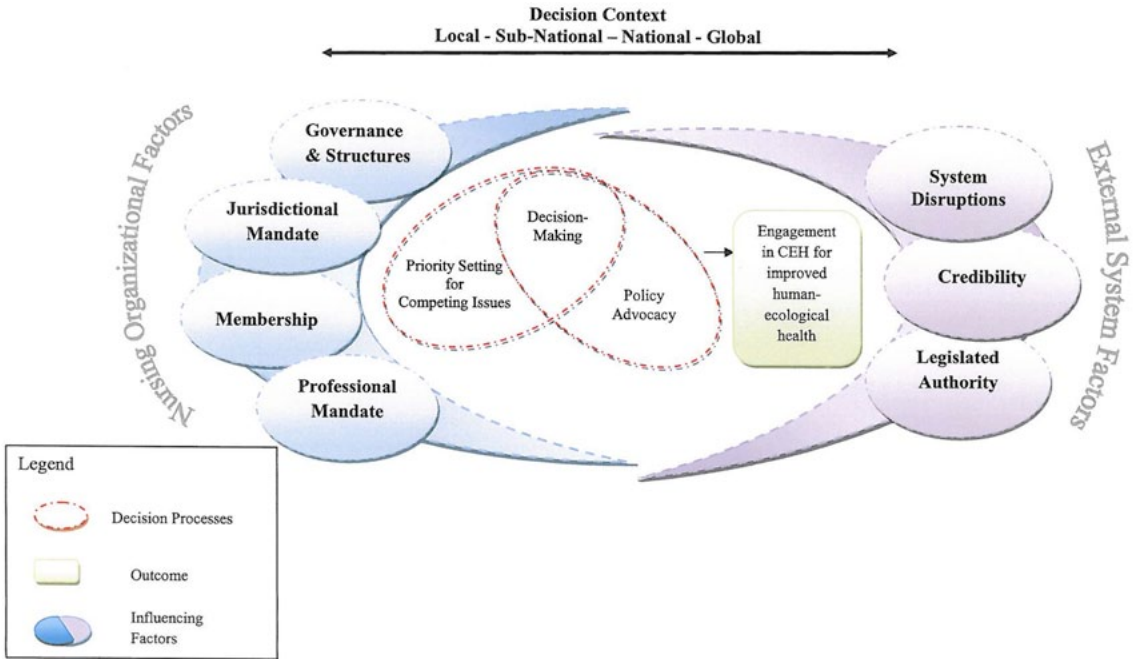
Second, normative factors refer to traditional mores, informally sanctioned obligations, and rules-of-thumb, which exert their pressure through informal rules that structure expectations, standards of performance, and expected relationships. Organizational behaviours are thus driven by perceived social obligations. Normative factors are reflected in nursing associations' professional mandates, certifications, intra-professional relationships, and collaborative partnerships.

Third, cognitive factors are shared understandings, logics, and cultural meanings about how things work or should be done. They exert their pressures by encouraging the adoption or mimicking of other successful organizations in an effort to gain legitimacy. In this case, organizational behaviours are often taken for granted.[47] Cognitive factors potentially relevant to nursing associations' choices include beliefs about why community environmental health problems exist and the roles of government in solving public problems. Institutional theory has contributed to organizations, professions, and policy research[47-50] and holds promise to inform research exploring factors and their mechanisms that influence nursing associations' policy work.

Development of a conceptual framework

Complementary theoretical perspectives

Socio-ecological whole systems change explains the broad context and processes for change across all system levels.[12,35-36] Institutional theory draws more detailed attention to specific contextual regulative, normative and cognitive institutional factors and their mechanisms for influencing organizational decision-making. Using these complementary perspectives, research approaches would include efforts to gain knowledge related to: a) the nature and scope of nursing associations' engagement in community environmental



health; b) the perspectives and beliefs leaders hold about how nursing associations make decisions or how they conduct policy advocacy; and c) the social context or institutional influences (i.e. from related professional, legal, social, economic, political, and ecological systems) in which choices are made and action is taken; and d) the interplay of internal and external factors and their mechanisms that operate across discipline, jurisdictional, and sector boundaries and at different time scales. Based on tenets of whole systems thinking and institutional theory we propose a conceptual framework to guide such research.

Overview of conceptual framework

The conceptual framework depicted in Figure 1 represents nursing associations' priority setting and policy advocacy leading to engagement in community environmental health. Major components of the framework include decision-making processes and influencing factors, which constitutes the decision context. A recent scoping review[7] undertaken to investigate priority setting and policy advocacy by nursing associations identified several factors both internal (governance and governance structures; membership; jurisdictional mandate, professional mandate) and external (legislation, credibility, system disruptions) to the nursing associations that influence their policy choices and actions. Concepts from these findings informed the development of the framework.

Nursing associations' decision-making for engagement in community environmental health is embedded in a policy decision-making context in which internal association factors and external factors at all system levels (local, sub-national, national, and global) influence the organizational choices and actions taken. At the core, decision-making includes priority setting for competing policy issues and policy advocacy (represented by overlapping ovals with broken lines in the figure). Priority setting and policy advocacy choices are interdependent (represented by overlapping ovals). The outcome of these choices (represented by the square) concerns whether and how nursing organizations are engaged in community environmental health policy issues. Decision processes are shaped by internal and external factors (represented by half-moon crescents with broken lines to indicate their ability to influence decision-making). Regulatory, normative, and cultural factors within the internal and external environment are interrelated (represented by overlapping ovals with broken lines). Within this context nursing associations retain the autonomy to take deliberate, strategic, and opportunistic action to influence priority setting and policy advocacy.

Together the framework proposes factors internal and external to nursing organizations that can both create opportunities or narrow options for their choices of policy, for ways they advocate, and for the outcomes from their policy efforts. A more detailed explanation and supporting evidence for the components of the framework are described in the following section.

Framework components

Decision-making

Priority setting. Part of the decision-making process includes setting priorities among competing policy issues. Priority setting refers to the ways in which decisions by nursing associations are made for the allocation of its human, financial, and/or material resources. This includes the identification and selection of relevant stakeholders; the selection of criteria and values upon which to adjudicate decisions and ways to weight those decision criteria; ways to identify, gather, manage, and synthesize evidence; and mechanisms for reviewing and evaluating decisions and their consequences.

Policy advocacy. Policy advocacy processes are the ways in which nursing associations attempt to influence structural and system-level decisions. This involves working across discipline, jurisdictional, and sectoral boundaries. Policy advocacy processes include stakeholder analysis and inclusion processes; the use of multiple types of evidence; navigation through various stages of the policy change cycle; deployment of efforts in various settings, and use of a range of strategies and tactics.

Engagement in community environmental health. In this framework, the outcome from decision processes includes engagement (or not) in community environmental health. Engagement includes both the choice to address community environmental health issues and the actions taken to influence policy decisions for human-ecological health.

Decision context: Internal organizational factors

Governance. Governance represents the set of organizing and monitoring activities that describe how nursing associations' boards or councils do their jobs. Structures required for the board / council to do their job include designated authority and division of tasks, operating procedures, rules, bylaws, strategic plans, and goals. The degree of buy in from governing bodies, the formality of decision structures, lines of authority, and supporting organizational documents influences the choice and degree of engagement in policy initiatives.

Membership. Membership represents nurse registrant and other supporters (e.g. individuals, corporate, group membership) and their contributions to nursing associations' policy efforts. The homogeneity or heterogeneity of membership influences associations' access to resources and their ability to reach consensus or speak in unity. While advocacy efforts may be enhanced when resources are pooled, conflicting interests and mandates may diminish intra-professional collaborative efforts for community environmental health.

Jurisdictional mandate. Jurisdictional mandate represents the associations' territorial responsibility across local, provincial/territorial, national, or international boundaries. Nursing associations operating at various jurisdictional levels target different levels of the political system and vary the use of direct (e.g. lobbying) and indirect (e.g. public awareness campaigns) approaches. National and sub-national nursing associations will experience different supports and challenges in their collaborative endeavors (e.g. opportunity to intimately know political leaders).

Professional mandate. Professional mandate represents the beliefs members of the nursing associations hold about their social obligation (what the profession ought to do) to address community environmental health. Community environmental health will compete for attention or for preferential treatment in nursing associations' that attend to broad policy interests.

Decision context: External system factors

Legislative authority. Legislative authority represents government regulations, policies, or legislation that provides the legal authority for the existence and purpose of the nursing associations. Nursing associations articulate their potential contribution and roles and engage in community environmental health initiatives when policy advocacy is included as part of their mandate and mission statements. Fear of violating the law or dual mandates (e.g. regulatory and professional) diminish policy advocacy for community environmental health.

Credibility. Credibility represents the perceptions or assumptions held by the public, government, and other stakeholders from outside the nursing association or the profession about the expertise or contributions nursing associations can appropriately make to community environmental health. Associations that have the confidence of those outside the association have increased political power, opportunities for participation, and use direct advocacy tactics. Indirect tactics are used when nursing associations advocacy efforts are ineffective or they are excluded from decision tables.

System disruptions. System disruptions represent environmental shifts or events that occur outside of the organization and its control that create opportunities for engagement, change the nature of relationship among stakeholders, shift resources, and alter the urgency of issues. Nursing associations may respond to system disruptions by enhancing actions for policy issues for which they were already committed, by taking action for new policies, or by diminishing or withdrawing efforts.

Contributions / implications for nursing research

The framework offers a depiction of concepts and their relationships regarding nursing associations' engagement in community environmental health. The framework draws particular attention to internal organizational factors and to external system factors, and provides a starting point to identify institutional factors and their mechanisms (e.g. coercion, compliance) that shape nursing associations' choices and actions for community environmental health. The framework provides an opportunity to inform research to understand how nursing associations make choices among competing professional/practice and public policy priorities, how they advocate for public policy and systems change, and the supports or challenges they may face when attempting to address public policy issues.

One way forward would be to conduct case comparisons across nursing associations with diverse organizational features (e.g. mandates, membership configurations), across various jurisdictional settings (e.g. provincial/territories and national boundaries), across geographic boundaries (e.g. Canada and United States countries), and involving diverse actors (e.g. government, industry, non-governmental organizations) to identify cross-cutting themes that contribute or constrain nursing associations' public policy efforts. Identifying patterns and ambiguities would require exploration of change from multiple perspectives and sources including, for instance, the perspectives of staff and directors and data from organizational documents and archives. Exploration should span time scales to understand diverse and differential rates of responses that may result from multiple smaller and bigger changes moving at different speeds across different levels of the system.

Implications for nursing associations' priority setting and policy advocacy

This conceptual framework draws attention to the need to

understand how nursing associations set policy priorities and factors and mechanisms that support or restrict their efforts. Understanding the factors and mechanisms that support priority setting and policy advocacy can underscore leverage points and blockages, which in turn can be used to plan the most receptive time to address a policy issue, the stakeholders who need to be involved, and the most appropriate targets and strategies.[51-52] Drawing on these opportunities can help nursing associations meet their vision, mission and goals, and lead to successful policy choices/efforts.[52-56] Failure to acknowledge leverage points and blockages may undermine nursing associations' attempts to meet their objects or prevent associations from implementing their policy preferences. Priority setting choices and actions may be made in reaction to past experiences, rather than in response to the most pressing needs of the communities they serve. Opportunities may be lost to maximize organizational efforts and subsequent health gains for the resources available.[51,57]

Conclusion

We argue that nursing associations' priority setting and policy advocacy occurs within a complex decision-making context whereby there is a dynamic interplay of internal organizational and systemic external factors that influence whether and how they take action for community environmental health. Given that organizational responses can vary and change over time within this context, research approaches are required that permit an in-depth exploration of these dynamics. We provide a theoretically and empirically informed conceptual model rooted in tenets of whole systems thinking and institutional theory to guide research investigating how nursing associations makes decisions and factors that influence those choices. In constructing this framework, we have provided a way to consider how social influences and their mechanisms may operate to shape nursing associations' engagement in community environmental health. Future research guided by this framework can lead to better understanding of decision supports and constraints and thus areas for potential action to enhance priority setting and policy advocacy.

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