Representing Public Health Nursing Intervention Concepts with HHCC and NIC

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Abstract

Purpose: It is imperative that public health nurses define their services and provide evidence supporting the effectiveness of interventions. The purpose of this paper is to examine the extent to which two standardized nursing terminologies –Home Health Care Classification (HHCC) and Nursing Interventions Classification (NIC) represent public health nursing practice according to core public health function in Public Health Nursing Intervention model. Methods: First, we divided all HHCC and NIC interventions into intervention focus levels: individual/ family-focused, community-focused, and system-focused. Second, we categorized HHCC and NIC interventions according to core public health functions: assessment, policy development, and assurance and the categories of interventions in the PHI Model. Results: We identified HHCC and NIC Nursing interventions that represented public health nursing concepts across core public health functions and categories of the PHI model. Analysis of the findings demonstrated that HHCC and NIC have terms for the concepts in the PHI model. Conclusion: Although HHCC and NIC cover many concepts in public health nursing practice, additional research is needed to extend these terminologies and to evaluate other standardized terminologies that can reflect more comprehensively public health nursing interventions.

Key words:
Public Health Nursing, Terminology

Introduction

Public Health Nursing

Public health nursing is the practice of promoting and protecting the health of populations using knowledge from nursing, social, and public health sciences. Public health nurses provide care to individuals, families and communities. Public health nurses work in collaboration with other community service providers integrating and coordinating services for clients to maximize continuity of care. As health care environment has focused on preventing illness rather than treating disease, incorporating cost control measures, and increasing access to health care services, public health nurses are in an influential position to contribute to the health of population [1]. In the context of the changing health environment, it is imperative that public health nurses define their services and provide evidence supporting the effectiveness of interventions they offer.

The Core Public Health Functions

The focus of public health has been to improve the infrastructure and enhance the core competencies. In 1988, the Institute of Medicine [2] identified the core functions of public health: assessment of the health of the community, the development of comprehensive health policy to protect the community's health, and assurance to the constituents that services will be available. The core public health functions summarize public health practices and guide public health nursing. Public health nursing should occur through assessment, policy development and assurance activities of nurses in partnerships with communities, organizations, and individuals.

At the assessment level, public health nurses perform all activities involved in the concept of community diagnosis, identifying needs, analyzing the cause of problems, collecting and interpreting data, case-finding, monitoring and forecasting trends, research, and evaluation of outcomes in collaboration with other health care or public health professionals [2]. By synthesizing and analyzing information obtained at the assessment level, public health nurses make policy decisions for individuals, families, and communities [3]. At the assurance level, public health nurses monitor and improve the availability and quality of health care providers and services [1]. In these process, public health nurses collaborate with other health and human service organizations to promote the availability of personnel and public health services for all the people consistent with the needs and preference of multiple communities/group [4].

With development of health care reform and extended public health nursing practice, there continues to be a need to redefine public health nurse's roles and practice so that public health nurses can carry out their work more effectively. First, public health nursing practice needs a common framework that is applicable to all practice settings from general district public health nurses to public health nurses working with special population. Second, with increased emphasis on interdisciplinary collaboration, public health nurses should articulate their practice in the larger public health context. Therefore, accountability for public health improvement increasingly demands a common language as well as interdisciplinary team approach [5].

Standardized Nursing Language in Public Health Nursing

Due to the lack of data about the nature and effectiveness of nursing services, the quality of care is frequently assessed by negative measures (e.g., number of decubitus ulcers) or measured indirectly. In public health, public health nurses' contributions can be easily overlooked without data about the problems and goals nurses address or interventions they carry out. This invisibility of public health nursing results from the lack of standardized data. For public health, nursing's visibility is important not only to public health nurses, but also to other health care professionals, policy makers, co-workers, and consumers of health care. Therefore, public health nurses need a common or standardized language to articulate what they do. Standardized public health nursing language will illuminate the work of public health nurses and improve understanding and communication within the specialty and with other disciplines [6, 7].

Despite the clear need for such terms, there is little research on standard languages that represent public health nursing interventions. The purpose of this paper is to examine the extent to which two standardized nursing terminologies –Home Health Care Classification (HHCC) and Nursing Interventions Classification (NIC) represent public health nursing practice according to core public health function in the Public Health Nursing Intervention model.

Materials and Methods

Home Health Care Classification (HHCC)

The HHCC System was developed by Saba and colleagues from research conducted at Georgetown University School of Nursing. The purpose of the research was to develop a method to assess and classify home health Medicare patients in order to predict their need for home health care and measure their outcomes of care [8]. The HHCC System consists of two interrelated and standardized taxonomies: the HHCC of Nursing Diagnosis and the HHCC of Nursing Interventions. These taxonomies are classified by the 20 Care Components that serves as the standardized framework for documenting patient care in home health and ambulatory care settings [9]. The HHCC of Nursing Interventions consists of 197 terms: 72 of which are major intervention categories and 125 minor subcategories. Each intervention can be modified by Type of Action (Assess/Monitor, Care/Perform, Teach/Supervise, and Manage/Refer) resulting in a total of 788 possible interventions [8, 9]. Currently, the HHCC System is used to document home health care and serves as a language for some other health care providers, as well as nursing. There are plans to expand the HHCC System taxonomies in order to include the scope of services provided by primary care providers (PCPs), clinicians, physicians assistants, and nurse practitioners (NPs), and other advanced practice nurses (APNs) [8]. In addition to its implementation in home health care settings, the HHCC System has been used to support documentation of clinical encounters using a handheld student clinical log across settings including public health and ambulatory primary care [10].

Nursing Intervention Classification (NIC)

The NIC [11] is a comprehensive, standardized nursing terminology describing treatments that nurses perform in all settings and in all specialties. The NIC contains 486 interventions each with a definition and a list of detailed activities that describe the nursing actions to implement the intervention. In contrast to HHCC, no action modifiers are used; i.e., assessment, direct care, and other actions are included as activities for a particular intervention. The interventions are grouped into 30 classes and 7 domains: Physiological: Basic; Physiological: Complex; Behavioral; Safety; Family; Health Systems; Community. In many health care settings, the NIC has been used for clinical documentation, communication of care across settings, aggregation of data across settings and systems, effectiveness research, productivity measurement, competency evaluation, reimbursement, and curriculum design [12].

Public Health Nursing Interventions (PHI) Model

The State of Minnesota Department of Health Services, Public Health Nursing Section, identified interventions that public health nurses take on behalf of individuals, families, and communities to improve and promote the health status of populations. The research team developed the PHI model [13] through a literature search on primary public health interventions and an expert public health nursing panel. As a result of the study, 17 interventions which reflect public health core functions were identified: advocacy, case management, coalition building, collaboration, community organizing, consultation, counseling, delegated medical treatment and observations, disease investigation, health teaching, outreach/case finding, policy development, provider education, referral and follow-up, screening, social marketing, and surveillance. Each intervention reflects the core public health functions. The PHI model describes examples of intervention at three levels: individual-focused, community-focused and system-focused. These interventions can be applied in various health care settings: clinics, coalitions, communities, community agencies, correctional facilities, day care, group homes, homes, hospitals, local and state government, public health nursing clinics, school, shelters, and worksites.

In our study, 'Disease investigation' and 'Surveillance' were integrated into one category, 'Surveillance'. 'Delegated medical treatment and observation' was divided into two categories: 'Delegated medical treatment' and 'Delegated medical observation'.

First, we categorized the HHCC and the NIC interventions according to intervention focus levels: individual/family-focused, community-focused, and system-focused to explore they could be applied to the individual, family, community, or system level according to the PHI model. Second, we classified each public health nursing intervention of the PHI model into the core public health functions: assessment, policy development, and assurance. Finally, we categorized the HHCC and the NIC interventions according to the PHI Model intervention categories in order to explore the extent to which the two nursing intervention classification systems represent public health nursing intervention concepts. One author (NL) initially categorized the interventions then a second author (SB) reviewed the catego

Table 1: Examples of Nursing Interventions according to the Public Health Intervention Model

Public Health Nursing Intervention	Core Function	HHCC	NIC
Advocacy	Assurance	G17.04 Community Special Services	7460 Patient Rights Protection
Case Management	Assurance	G21.04 Professional/Ancillary Services	7400 Health System Guidance
Coalition Building	Policy development	N68.04 Violence Control	8500 Community Health Development
Collaboration	Assessment	M39.21 Interpersonal Dynamics Analysis	7130 Family Process Maintenance
Community Organizing	Policy development	K31.24 Health Promotion	8700 Program Development
Consultation	Assurance	G20.04 Physician Contact	7910 Consultation
Counseling	Assurance	E12.02 Counseling Services	5240 Counseling
Delegated Medical Treatment	Assessment	C08.01 Cardiac Care	4040 Cardiac Care
Delegated Medical Observation	Assessment	A02.11 Cast Care	0762 Cast Care: Maintenance
Health Teaching	Assurance	I27.03 Diabetic Care	5614 Teaching: Prescribed Diet
Outreach/Case finding	Assessment	K31.11 Health History	6610 Risk Identification
Policy Development	Policy development	K31.24 Health Promotion	7970 Health Policy Monitoring
Provider Education	Assurance	G21.03 Professional/Ancillary Service	7722 Preceptor: Employee
Referral and Follow-up	Assurance	G21.14 Home Health Aide Service	7800 Quality Monitoring
Screening	Assessment	N42.11 Environmental Safety	8880 Environmental Risk Protection
Social Marketing	Policy development	N40.12 Tobacco Abuse Control	4490 Smoking Cessation Assistance
Surveillance	Assessment	K30.01 Infection Control	6650 Surveillance

rizations and revisions were made based upon consensus. A single intervention could be classified into multiple categories; e.g., a single intervention could be associated with Advocacy and Case Management. For our categorization, we examined the labels and definitions in HHCC and NIC. For NIC, we also considered the activities that were part of a particular intervention since it is at the activity level that assessment, direct care, health teaching, etc. actions are explicitly delineated. For HHCC, we used all sensible combinations of interventions with the Type of Action modifiers to categorize interventions into the PHI categories that directly matched the modifiers (i.e., teaching, manage/refer, and direct care).

Results

Table 1 shows the frequency and percent of the HHCC Nursing interventions (total: 788) and the NIC Nursing interventions (total: 486) categorized according to intervention focus levels: individual/family focused, community-focused, and system-focused. In both standardized terminologies, the majority of the interventions are targeted toward individuals or families rather than communities or systems.

We identified the HHCC and the NIC Nursing interventions that represented public health nursing concepts across core public health functions and categories of the PHI model. Examples of interventions in each category of the PHI model are shown in Table 2. Table 3 shows the frequency of nursing interventions in the HHCC and the NIC that reflect public nursing intervention according to the PHI model and the core public health functions. In terms of the PHI model the majority of interventions fell into

Delegated Medical Treatment and Delegated Medical Observation for both HHCC and NIC. Others categories associated with high numbers of HHCC interventions were Case Management and Health Teaching. For NIC, Health Teaching, Counseling, Policy Development, and Screening categories had at least 25 interventions. Categories with 10 or less interventions from either system were: Community Organizing, Provider Education, and Social Marketing.

Table 2: ExamplesFrequency and percent of nursing interventions according to intervention focus level

	Individual/Family (%)	Community (%)	System (%)
HHCC	784 (99.5)	136 (17.3)	95 (12.1)
NIC	480 (98.8)	55 (11.3)	66 (13.6)

Looking at the categorization from the perspective of core public health functions, the fewest number of interventions were related to Policy Development.

Discussion

The PHI model has clear definitions of each public health nursing intervention and includes examples of interventions at three levels: individual-focused, community-focused, and system-focused. These characteristics helped us to categorize public nursing intervention concepts easily from two nursing classification systems: the HHCC and the NIC according to the PHI model and the core public health functions.

Table 3: The Frequency of Interventions categorized according to PHN Intervention Model

	HHCC				NIC			
	AS	PO	AU	Total	AS	PO	AU	Total
Advocacy	.	.	4	4	.	2	11	13
Case Management	.	.	195	195	1	1	4	6
Coalition Building	.	8	8	16	1	4	4	9
Collaboration	1	.	16	17	2	8	11	21
Community Organizing	1	2	1	4	1	3	4	8
Consultation	.	.	10	10	5	1	7	13
Counseling	.	.	11	11	8-	1	19	28
Delegated Medical Treatment	.	.	186	186	.	1	236	237
Delegated Medical Observation	188	.	.	188	231	1	1	233
Health Teaching	.	.	177	177	.	1	31	32
Outreach/Case Finding	2	.	.	2	13	1	1	15
Policy Development	.	15	.	15	5	19	1	25
Provider Education	.	.	3	3	2	1	5	8
Referral and Follow-up	.	.	14	14	3	1	17	21
Screening	6	.	3	9	27	1	21	49
Social Marketing	.	5	0	5	.	9	1	10
Surveillance	3	.	.	3	5	2	8	15

Analysis of the findings demonstrated that the HHCC and the NIC have terms for many of the concepts in the PHI model. Of note, but not surprising given that the HHCC was developed for home care and the NIC initially for institutional settings, the majority of interventions related to medical observation and treatment at the individual level.

The majority of the HHCC interventions that mapped to PHI are implicitly at the individual level. The NIC includes a new domain called Community consisted of two classes: Community Health Promotion and Community Risk Management. Under this domain, 16 nursing interventions are closely associated with care that supports the health of the community. The NIC also includes interventions at the system-level. In recognition of the fact that nursing actions are directed to different "units of care", the International Standards Organization (ISO) Reference Terminology Model for Nursing Actions includes a class (Recipient of Care) to explicitly model and disambiguate interventions at various levels including the individual, family, community, and system [14]. This model may be useful to refining existing nursing terminologies such as HHCC and NIC to more explicitly represent public health nursing practice.

Conclusion

These nursing interventions that are categorized according to the PHI model provide evidence of a core set of interventions useful in public health practice. Although HHCC and NIC cover many concepts in public health nursing practice, additional research is needed to extend these terminologies and to evaluate other standardized terminologies that can reflect more comprehensively public health nursing interventions. A core set of public health nursing interventions is essential to help public health nurses to communicate their functions, to measure their effectiveness, and to make better clinical decisions. Furthermore, this can foster the expansion of nursing knowledge, facilitate development of health information systems, and improve nursing education and nursing research.

Acknowledgments

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