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RESEARCH ARTICLE

Public Health Nursing Art to Enhance "Strength of Community" in Japan

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Abstract:

Purpose:

The purpose of this study is to shed light on the public health nursing art (PHNA) that enhances "Strength of Community (SC)" with practical activities of Public Health Nurses (PHNs) in Japan.

Methods:

This study used a qualitative, descriptive design. According to the recommendation, we selected the best PHN activities as identified SC was enhanced that was implemented by multiple PHNs. Interviewees were PHNs who were recommended as PHNs who can talk about each activity on the representative of PHNs concerned. Data were collected three times each through a semi-structured interview, each lasting for about one hour. PHNA was classified into six frameworks: Searching; Stimulating; Facilitating; Cooperation; Continuing Quality Improvement; and Policy/Resource Development based on previous studies.

Results:

The results indicate that the PHNA included in the six frameworks may further be classified into 12 categories and 26 sub-categories. We also identified three elements of social justice, the underlying norm for the concept. 12 categories were extracted two for each framework, {Reality Searching}, {Reality Actualization}; {Ownership Fostering}, {Motivation Support}; {Collective Effort Promotion}, {Full Retention Promotion}; {Collaborative Piloting}, {Opportunity/Platform Provision}; {Capacity Building}, {Quality Management}; {Resource Development} and {Planning/Systematization}.

Conclusion:

This study succeeded in demonstrating that the PHNA to enhance SC was collected, refined, and structured in a multidisciplinary and comprehensive manner, within the context of promoting positive health among the population. In the future, the remaining challenges include the substantiation of the PHNA at the sub-category level and the development and dissemination of programs to master them.

Keywords: Nursing art, Public health nurse, Positive health, Strength of community, Potential, Conceptualization.

1. INTRODUCTION

1.1. The necessity of Enhancing Strength of Community to Address Health Needs

Health needs in Japan are highly developed and complex,

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involving childrearing support and elderly care issues resulting from the declining birth rate and population aging, and the increase in cancer and heart diseases due to the changing living environment and lifestyle habits.

A range of public systems have been introduced to meet such health needs, but they are not sufficient for solving all issues, thus leading the Ministry of Health, Labour and Welfare [1] to adopt the vision of realizing local convivial societies by

enhancing the strength of community. However, a survey of inhabitants by the Ministry of Internal Affairs and Communications [2] found that in recent years, membership in neighborhood community associations has declined, engagement with neighbors has reduced, and fewer people are involved in community activities.

Accordingly, enhancing the strength of community requires a proper approach by health professionals, and so it is important to clarify their art.

1.2. PHNs as Major Players for Promoting Health in Japan

Public health nurses (hereinafter, PHNs) working in administrative agencies play a primary role in ensuring community health in Japan. Their total number is almost 38,000, accounting for some 75% of all PHNs as of December 2016 [3].

The title "PHN", which first appeared officially in the Notice on Child Healthcare Centers issued by the Ministry of the Interior in 1916, was changed into a qualification given to those who have passed the relevant national exam in 1948, with the enactment of the Act on Public Health Nurses, Midwives, and Nurses. PHNs have always played a pivotal role in recasting administrative measures and community health activities in response to evolving health needs.

PHNs now lead projects, such as home visits, health consultations and health education, identifying health needs through community assessment, and preparing health plans based thereon. As the focus of PHN activities has shifted to primary prevention and health promotion since the introduction of the Long-Term Care Insurance Scheme in 2000, it is urgently needed to establish the art of PHNs for enhancing the strength of community as a key component of PHN activities.

The definitions of public health nursing practice in major countries indicate that public health nursing aims to promote individual and community health and impact on systems and policies, on population-based approach [4 - 6]. Therefore, it is also important in an international context to clarify public health nursing art to enhance the strength of community.

1.3. Need to Clarify Public Health Nursing Art to Enhance the Strength of Community

However, it is up to municipal governments to determine how PHNs should be deployed under the applicable legal system, thus preventing the sharing of effective art nationwide. The national government only indicates a general process to encourage implementation of the plan-do-check-act cycle in its Guidance for Health Activities of PHNs in Local Community, which was revised in 2013 [7].

A search on the Japan Medical Abstracts Society website, a domestic search tool, found four entries for the keywords of "community", "strength", "PHNs" and "art", none of which highlighted the art of PHNs to enhance strength of community, and this result was the same in the ten entries searched on PubMed (as of July 2018).

To ensure that the strength of a community is enhanced in response to health needs, it is essential to clarify the relevant public health nursing art.

1.4. Purpose

The purpose of this study is to identify the public health nursing art which enhances the strength of the community with practical PHN activities in Japan and to show the subcategory level in this article. The study may help enhance the strength of community by publicizing its findings for use by PHNs across the country.

1.5. Definitions

The key terms used in this study have the following meanings.

The term "Strength of Community" (hereinafter, SC) means "potential of the community to promote positive health." It comprises the following concepts identified in previous studies [8]: "state of inhabitants" includes: solidarity and mutual aid, partnership building; skills of exploring and leveraging resources; balance and control over impact; capacity building; and organizational dynamics to drive decision-making, whereas "surrounding situation of inhabitants" include: neighborhood organization; support system; and network. The term "positive health" means improving positive conditions" to drive the community towards well-being, rather than "eliminating negative conditions" such as diseases and disabilities [9].

The term "public health nursing art (hereinafter, PHNA)" means "acts with sense of purpose" [10] aiming for the best positive health of not only individual but also population and community to develop their capacity and the surrounding environment, guided by the norm of social equity [11] and based upon skills and experience [12]. The term "art" means a series of acts by public health nurses dealing with situations of uncertainty, instability, uniqueness, and value conflict that cannot be solved by "technical rationality" [13]. The acts include "knowing-in-action" that Schön describes as a professional artistry [13].

2. METHODS

2.1. Design and Framework

This study used a qualitative, descriptive design. The reasons for this design were that PHNA to enhance SC had not been conceptualized and was an act that could not be quantitatively measured. In practice, it needs to take many interviews of multi year activities that the results of activities were acknowledged to elucidate exploratively PHNA.

The conceptual framework for organizing the PHNA was constructed based on several standard frameworks [10, 14, 15], which was considered to be the most consistent with the activities of PHNs working at local government in Japan through the discussion among researchers. The following six items were adopted: Searching refers to exploring health-related events; Stimulating refers to energizing community members; Facilitating refers to promoting the continuation of independent activities; Cooperation refers to working with a wide variety of community members; Continuing Quality

Improvement refers to working to improve community and social resources on an ongoing basis; and Policy/Resource Development refers to developing policies and resources.

2.2. Selection and Recruitment

According to the recommendation by PHNs at the level of section head or above, or by PHN teachers at the level of associate professor or above, we selected five PHN activities across a wide range of disciplines and more than three years of each, as identified SC was enhanced. The interviewees were the PHNs with at least 15 years of practical experience in an administrative agency, recommended by the affiliation directors as PHNs who can talk about it on the representative of PHN colleagues, for their leadership in the activities implemented by multiple PHNs.

2.3. Data Collection

For each PHN, data were collected through a semi-structured interview (1-2 hours), an additional interview (1 hour), and a follow-up interview (0.5-1 hour) for indepth understanding. Before each interview, PHNs prepared the materials with their colleagues, such as the evaluation of the activities (statistical data, progress report, *etc.*), actual deliverables such as tools and guidelines, and pictures of activities in the field. The enhancement of SC was verified by observing them. The remarks were recorded using an IC recorder and later transcribed to obtain verbatim data.

The PHNs were asked to talk about the outline and process of the PHN activities that helped improve the "state of inhabitants" and "surrounding situation of inhabitants." Referring to specific years in the period ranging from the start of the activities to the generation of results, they were asked to answer specific questions such as: "How did you decide to act and for what purpose?" "How did you cope with difficulties, and what did you consider important as a PHN?" and "Who/what has changed as a result of your action?"

2.4. Data Analysis

The data was coded in the following four steps based on Steps for Coding and Theorization [16]. The text was firstly segmented in accordance with semantic context: (i) to extract the context referring to the PHNA, (ii) to capture the acts with sense of purpose, significance, there of, *etc.*, (iii) to identify similarities and differences between extracted text and out-of-text concepts, (iv) to describe each segment as a code by a single art unit. We then determined which of the six categories was appropriate for the segment, also in light of the context of the process. Thus, segments with similar semantic context were classified into a sub-category of the PHNA, with multiple sub-categories constituting a category. In identifying the PHNA, we took care to clearly include those related to "sense of purpose" and those related to "acts."

We conducted the analysis while verifying whether the PHNA positively affected the SC identified in preceding studies; whether the population based perspective was maintained, as shown at the core of the Minnesota Intervention Wheel [15] of PHN activities; and whether events were recognized as appropriate from a proper individual or community or system-focused perspective.

The credibility, dependability, and confirmability of the data were ensured as all members verified the whole analytical process of the main analyst throughout the study period, and discussed and corrected any problems. The results thus obtained were sent to the PHNs for verification, in order to obtain their agreement that it reflected what they had experienced. The robustness of the results was doubly ensured through open discussion in the study group hosted by members.

2.5. Ethical Considerations

The study plan was approved by the Ethics Committee for Observational Study, Osaka University Hospital (approval No. 16392, 30 January 2017). We provided explanations to the interviewees in the survey, both orally and in writing, before asking them to sign the letter of consent. The survey was conducted from February to November 2017.

3. RESULTS

3.1. Overview of Public Health Nursing Activities as Told by PHNs

Our interview concerned five activities across a wide range of disciplines. Table **1** outlines how SC was enhanced, as identified in this study. Two to six PHNs were involved in the five activities per year (20 persons in total) for a period of 3–22 years (58 years in total). Years of experience, affiliation and specificities of the PHNs interviewed as the representative of PHNs involved were as follows: #1) 33 years/healthcare center/ won Governor's award for the activity; #2) 30 years/city/acting head of section; #3) 20 years/ordinance-designated city/team leader; #4) 17 years/core city/PHN specialized in community nursing with master's degree; and #5) 33 years/town/PhD. The population size of the municipalities where the activities were carried out was various, including 2 places, which were less than 100,000, 2 places which were between 100,000 and 200,000, and 1 place, which was more than 200,000.

3.2. Public Health Nursing Art to Enhance SC

The results indicate that the PHNA as identified within the six frameworks, may be classified into 12 categories and 26 sub-categories. We also identified three elements of social justice, the underlying norm for the concept (Table **2**). For the purpose of this paper, frameworks are shown in parentheses [ ], categories in parentheses { }, and sub-categories in parentheses < >. Citations of raw data are shown in *italics*, while case IDs and data numbers are shown in parentheses ().

3.2.1. The Norm: Social Justice

The components of the [Norm (Social Justice)] included {Trust and Partnership}, {Equality and Equity} and {Protection of Everyone's "Living"}.

(Referring to the monitoring of a community café launched with the support of the PHN and led by local inhabitants) As we put unwavering trust in local inhabitants and went to see how it was going from time to time, even without being invited, they were always waiting there, ready to empower me. (2-21)

Table 1. Overview of public health nursing activities as told by participants.

Activity	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5
Discipline Period	Maternal and Child Health 5 Years	Elderly Care 3 Years	Elderly Health 12 Years	Intractable Disease Care 16 Years	Disability Health 22 Years
Outline of activity and how SC was enhanced[*]	Activity to support transition of children in need of advanced medical care from hospital to home Built [HI] of related institutions and enhanced [CE] of stakeholders	Activity to create spaces for activities of the elderly in the community and support the continuation of the activities Enhanced [ABF] of inhabitants and developed [G]	Activity to transfer evidence-supported physical exercise from other prefectures for dissemination in the whole community Enhanced [CEF] of neighborhoods and built [G]	Activity to support the community life of patients suffering from severe intractable diseases and their families in safety and security Built [HI] of related institutions and enhanced [CD] of stakeholders	Activities to create and scale projects meeting inhabitants#x2019; needs timed with legislative reform Enhanced [ABD] of inhabitants and built [HI] of related institutions

* "Strength of Community (SC)"

State of inhabitants: A) Solidarity and mutual aid, B) Partnership building, C) Skills of exploring and leveraging resources, D) Balance and control over impact, E) Capacity building, F) Organizational dynamics to drive decision-making Surrounding situation of inhabitants: G) District organization, H) Support system, I) Network

Table 2. Public Health Nursing Art to enhance "Strength of Community" that aim at the best positive health among the population.

The Norm	Social Justice	Trust and Partnership
		Equality and Equity
		Protection of Everyone's "Living"
Framework	**Category**	**Subcategory**
Searching	Reality Searching	Potentials Identification
		Needs Identification
		Resource Exploration
	Reality Actualization	Visualization
		Substance Presentation
		Factor Presentation
Stimulating	Ownership Fostering	Collective Responsibility Sharing
		Collective Voluntary Involvement
	Motivation Support	Initiation Assistance
		Motivation Boosting
Facilitating	Collective Effort Promotion	Player Amplification
		Mutual Contribution Presentation
	Full Retention Promotion	Local Dissemination
		Initiative Support
Cooperation	Collaborative Piloting	Collaboration for Growth
		Adjustment for Development
	Opportunity/Platform Provision	Positive Health Transformation
		Outcome Consolidation
Continuing Quality Improvement	Capacity Building	Key People Development
		Collaborative Knowledge Development
	Quality Management	Overhaul
		Bottom-up Improvement
Policy/Resource Development	Resource Development	Resource Generation
		Use Promotion
	Planning/Systematization	Priority Identification
		Decision/Building/Infrastructure

"Strength of Community": potential of the community to promote positive health

The PHNs embodied {Trust and Partnership} in a constant way, respecting inhabitants-led decision-making in the belief that they can change. The data described above indicate the story told by a PHN who went to observe the community café whose launch she had supported in Activity #2. The remarks will express the attitude of the PHN toward this norm.

I make it a rule to provide information to the whole community in response to any request from a specific neighborhood. (2-5)

Keeping in mind the need to ensure {Equality and Equity} for the whole community, the PHNs acted not to create any health-affecting gap. The data described above, also taken from Activity #2, tells the story of a PHN seeking to provide information to the whole neighborhood in an equitable manner.

Only PHNs can seamlessly observe and monitor the situation of all individuals and families from the perspective of their family members and neighbors in the community. (5-38)

As professionals in ensuring health for all, the PHNs continued activities in {Protection of Everyone's "Living"}, or activities to protect the lives, livelihood, and right to life of all inhabitants. The data described above is a story about Activity #5, where the PHN sought to support individuals, recognizing them as full members of the community, or people who will remain in the community for the rest of their lives.

3.2.2. The PHNA as Practiced in Searching

In [Searching], two categories were identified: {Reality Searching} to identify the realities and {Reality Actualization} to communicate the realities.

The realities of the community are marked by the ongoing population aging. Many people are still able to move, but the government can no longer lead singlehandedly the effort to prevent long-term care needs. We feel that the ownership of community members is required going forward. (3-3, 3-7)

For the purpose of {Reality Searching}, the PHNs practiced <Potentials Identification> in the community, <Needs Identification> to understand the current crisis and limits, and <Resource Exploration> to explore a wide variety of resources and the possibility of transferring, introducing, utilizing or disseminating them, lest SC should be undermined. The data described above, a story told at the beginning of Activity #3, depicts the attitude of a PHN exploring the possibility of resource development by identifying the needs for preventing ailments that require long-term care in the community, and focusing on the availability of people for such activities.

(Referring to the implementation rate of effective treatment of a given disease) This chart shows the situation of Prefecture A as a whole. In this period, the rate in City B remained at 8% against the national average of 30%. (The case, as well as) The data indicate that the inhabitants were not in a position to select the treatment. (4-36)

For the purpose of {Reality Actualization}, the PHNs practiced <Visualization> to illustrate the realities in documents or charts, <Substance Presentation> to show the realities through mapping or the live voices of stakeholders, and <Factor Presentation> to show the obstructing or promoting factors behind the realities. The data described above, which concerns Activity #4, tells the story of a PHN who has succeeded in individual-focused and community-focused visualization of the realities of traditional treatment practiced in the community.

3.2.3. The PHNA as Practiced in Stimulating

In [Stimulating], two categories were identified: {Ownership Fostering} to encourage stakeholders to take the initiative; and {Motivation Support} to launch and sustain activities.

We focused our effort on ensuring that both the inhabitants and staff members enjoy (the implementation of the project for) disease prevention and health promotion. (5-28)

For the purpose of {Ownership Fostering}, the PHNs practiced <Collective Responsibility Sharing> to raise awareness of the necessity of efforts by the whole community, and not individuals, and <Collective Voluntary Involvement> to ensure that the value of "full involvement," "interaction/ participation" and "positive and proactive attitude" take root in the whole community. The data described above, regarding Activity #5, shows how the PHN designed the project to ensure the voluntary involvement of everyone, and shared with community inhabitants, including the disabled, the elderly and young children and their parents, awareness of the need to promote better health together.

We launched a planning committee for exchange events to raise the essential motivation for continuing (the voluntary activities of inhabitants) when the going gets tough. (3-28)

For the purpose of {Motivation Support}, the PHNs practiced <Initiation Assistance> for inhabitants to take the initiative, and <Motivation Boosting> to continue the initiative with confidence. The data described above, concerning Activity #3, reveals how the PHN acted to revive a inhabitants' initiative facing a viability crisis and boosted motivation.

3.2.4. The PHNA as Practiced in Facilitating

In [Facilitating], two categories were identified: {Collective Effort Promotion} to ensure that community members share roles in making progress by leveraging their skills; and {Full Retention Promotion} to ensure that the whole community maintains the effort.

We organized a Leadership Training Course for Care Needs Prevention on a local scale to invite one or two candidates from each community to serve as leaders. (3-20)

For the purpose of {Collective Effort Promotion}, the PHNs practiced <Player Amplification> to augment the agents of change, and <Mutual Contribution Presentation> to ensure that the players recognize each other's contribution and maintain their morale. The data described above, which concerns Activity #3, expresses how the PHN engaged with the whole community to recruit potential community leaders to promote prevention activities.

We often say to the participants: "Tell everybody how much fun you have had today on your way back home, and all your neighbors will feel rejuvenated. (2-15)

For the purpose of {Full Retention Promotion}, the PHNs practiced <Local Dissemination> to scale the results of the Prevention Class, *etc.* to all neighborhoods through word of mouth and itinerary, and <Initiative Support> to guide the inhabitants toward self-reliance by providing different support at different stages. The data described above, a story from

Activity #2, describes how the PHN called on participants in the Prevention Class held in various neighborhoods to disseminate their learnings throughout their neighborhood.

3.2.5. The PHNA as Practiced in Cooperation

In [Cooperation], two categories were identified: {Collaborative Piloting} to promote collaboration in an effective way; and {Opportunity/Platform Provision} to set opportunities and platforms fit for the purpose.

Relevant organs with limited relationships created a horizontal network through the conference, and this tool (developed over two years through collaboration) has helped everyone to provide information on services to be provided in the next period. (1-56)

For the purpose of {Collaborative Piloting}, the PHNs practiced <Collaboration for Growth> to create results by building organic relationships for mutual growth, and <Adjustment for Development> to achieve the objective through comprehensive adjustments among a wide range of community members. The data described above, a story from Activity #1, shows how the PHN facilitated growth and development among the stakeholders through a multi-year process of developing a support pathway for 0-15 year olds, for joint use by the stakeholders and various professionals.

Conducting a survey in Year 1, holding joint study groups in Year 2, and visualizing a draft (for Year 3) for feedback from relevant organs and further refinement – this process was crucial (in building the system). (4-66)

For the purpose of {Opportunity/Platform Provision}, the PHNs practiced <Positive Health Transformation> to direct community members toward positive, and not negative health, and <Outcome Consolidation> to ensure the consolidation of cases such as decision-making in stages and the transformation of the community. The data described above, regarding Activity #4, tells how the PHN continued to provide opportunities/platforms for learning and consultation to change the recognition of the related institutions in stages and build a system to ensure positive health among the stakeholders.

3.2.6. The PHNA as Practiced in Continuing Quality Improvement

In [Continuing Quality Improvement], two categories were identified: {Capacity Building} to raise the capacity of the community; and {Quality Management} to ensure qualitative management of social resources in the community.

It was not about making the tool (for collaborative support) per se. What mattered was the process of making the tool, which enabled all six members to say the same thing to the relevant organizations. (1-68)

For the purpose of {Capacity Building}, the PHNs practiced <Key People Development> to discover high-caliber talented individuals for skills development, and <Collaborative Knowledge Development> to ensure that the inhabitants and stakeholders specialized in different areas co-create knowledge and gain capacity through joint activities. The data described above, which concerns Activity #1, demonstrates the fact that

the members gained the capacity to explain on their own the knowledge learned through several years of collaboration for the development of the support pathway.

In evaluating the results of network development (over the three years), the PHNs took ultimate responsibility for final verification, as any increase (in resources) has no meaning unless they are utilized for the benefit of patients. We were aware that the evaluation of health activities would revert to the inhabitants. (4-82)

For the purpose of {Quality Management}, the PHNs practiced <Overhaul> to check overall quality and identify the matters that required maintenance/upgrading or improvement, and <Bottom-up Improvement> to plan, implement and evaluate to ensure the actual improvement of field practice. The data described above, which concerns Activity #4, indicates how the bottom-up activity facilitated by the PHN brought benefit to the whole community.

3.2.7. The PHNA as Practiced in Policy/Resource Development

In [Policy/Resource Development], two categories were identified: {Resource Development} to develop social resources for meeting the needs of the community; and {Planning/Systematization} to develop the policies and mechanisms required therefor.

The survey helped us measure the capacity of clinics involved (in-home pediatric care) and identify the medical institutions that could become involved if given adequate conditions. (1-18)

For the purpose of {Resource Development}, the PHNs practiced <Resource Generation> to make preparations and adjustments for social resource development, and <Use Promotion> to operationalize and promote the use of social resources. The data described above, taken from Activity #1, depicts how the PHN recognized that the existing resources might be useful for finding better solutions to future challenges and promoted their usability as resources.

At that time, participants in the functional training class were limited to those aged 40 or over under the law. We changed the municipal guidelines to allow the participation of young disabled persons. (5-35)

For the purpose of {Planning/Systematization}, the PHNs practiced <Priority Identification> to identify priorities in planning/systematization, and <Decision/Building/Infrastructure> to build and continuously develop policies and systems following the decision-making stage. The data described above, taken from Activity #5, tells the story of a PHN who developed measures to address high-priority health issues even if it entailed a decision to modify the system.

4. DISCUSSION

4.1. Appropriateness of Data Collection

This study allowed us to collect rich stories about activities undertaken by five municipal governments that differed in scale and function with four PHNs and for 12 years on average,

as told by PHNs who played a pivotal role in the activities. Furthermore, the two occasions for data collection effectively yielded in-depth data.

4.2. Characteristics of the PHNA to Enhance SC as Identified in the Study

The PHNA identified in the study has the following characteristics. The comprehensive collection and systematic categorization of those characteristics constitute one of the originalities of the present study.

4.2.1. The PHNA to Explore the Possibility of SC Enhancement and Elucidate the Realities from Individual and Community Perspectives

{Reality Searching} for relevant events to promote public health entails population-based <Needs Identification> to focus on both individuals and the community, as well as <Potentials Identification> and <Resource Exploration>. It is the PHNA supported by a sense of purpose, in combination with the subsequent process of {Reality Actualization} to ensure that the realities are visible to the inhabitants and related institutions, and to set the direction of activities for positive health promotion, in close relation with {Protection of Everyone's "Living"}, which represents the norm of social justice.

Some point to the persistence of a culture that focuses on negative aspects, emanating from the traditional problem-focused/deficiency-based approach to healthcare that prevailed when disease structure was still simple [17]. In advocating theory and practice in nursing with "community as partner," however, Anderson *et al.* [18] stress that "a nursing model

should encompass all aspects of health care needs," calling for "health promotion and the holistic focus that is central to nursing." In line with the norm of social justice, the PHNA identified in this study sets the direction of positive health promotion by integrating health care needs from various aspects, including strengths, challenges, and resources.

4.2.2. The PHNA to Empower Inhabitants by Promoting Population-Based Positive Health

{Ownership Fostering} and {Motivation Support} for promoting population-based positive health are the PHNA to increase the independence of community members and ensure the initiation and continuation of activities. They may be considered as closely related to "solidarity and mutual aid" and "organizational dynamics to drive decision-making" in [SC: state of inhabitants] and the development of "neighborhood organization" in [SC: the surrounding situation of inhabitants]. Also, {Collective Effort Promotion} and {Full Retention Promotion} are the PHNA to ensure results by mobilizing the whole population to improve performance. They may be considered as closely related to the promotion of "skills of exploring and leveraging resources" and "balance and control over impact" in [SC: state of inhabitants].

Cowley [19] notes that "public health cannot function at a single, individual level," and that it can only make progress by "involving those people who make up the population." In the [Stimulating] and [Facilitating] art identified in our study would empower the population to contribute to the betterment of positive health, by encouraging local people to take ownership, make dedicated collective efforts, and establish and expand the activities in the whole community.
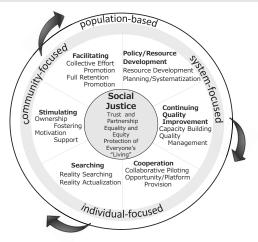

Fig. (1). Public Health Nursing Art to enhance "Strength of Community (potential of the community to promote positive health)".

4.2.3. The PHNA for Promoting Population-Based Positive Health through the Integrated Coordination Function of Administrative Agencies

{Collaborative Piloting} and {Opportunity/Platform Provision} for promoting population-based positive health are the PHNA to ensure that diverse community members get together

to positively integrate their functions. They may be considered as closely related to "partnership building" in [SC: state of inhabitants] and "network" building in [SC: the surrounding situation of inhabitants]. Also, {Capacity Building} and {Quality Management} are the PHNA to ensure the quality of the whole population. They may be considered as closely related to "capacity building" in [SC: state of inhabitants], as well as

{Trust and Partnership} and {Equality and Equity}, which comprise the norm of social justice.

Cowley and Frost [14] include Positive Health in the seven public health values in practice, adding that "health is a positive concept, encompassing social and personal resources, as well as physical capacities," and that "health promotion, therefore, involves finding ways to create resources for health." Indeed, the PHNA of [Cooperation] and [Continuing Quality Improvement] identified in our study may be considered as the PHNA to contribute to the process of promoting positive health, as they highlight essential requirements for realizing Policy/Resource Development, such as opportunity/platform provision and capacity building.

4.2.4. The PHNA for Creating Population-Based Systems to Enhance SC

{Resource Development} and {Planning/Systematization} for promoting positive health are the PHNA to create systems by working on the environment surrounding the population. They may be considered as closely related to the betterment of "network" and "support system" in [SC: surrounding situation of inhabitants].

Noting that "health promotion is a process," WHO's Ottawa Charter [20] provides that "to reach a state of complete well-being, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment." In this connection, the [Policy/ Resource Development] art identified in our study would help change the environment, including systems and resources through the process of [Cooperation] to upgrade the PHNA of the inhabitants and stakeholders, and thus may be considered to contribute to health promotion by enhancing Positive Health.

4.2.5. Conceptual Diagram of Dynamic Interaction of the PHNA to Achieve the Goal

Although each art was classified into a specific framework, the data revealed the actual interaction of deployed art in various ways. For example, [Searching <Needs Identification>] led to [Cooperation <Positive Health Transformation>] in some cases (3-7), while [Stimulating <Collective Voluntary Involvement>] developed into [Policy/Resource Development <Resource Generation>] in others (5-28). Also, population-based PHN activities changed their target depending on the time and situation, focusing on individuals, the community, or the whole system. Hence, it was found that each art was structurally positioned around the core of the Norm. In deployment, they interacted with each other, focusing on the individual and/or the community and/or the system, aiming for the best positive health (or improvement in public health) among the population. Fig. (**1**) illustrates this dynamic: the PHNA positioned at and around the core and linked with each other like a rotating globe, evolves in the direction of the ultimate goal while changing their focus as needed.

In the final analysis, this study succeeded in demonstrating that the PHNA was collected, refined and structured in a multidisciplinary and comprehensive manner, within the context of promoting Positive Health among the population. This is an original feature of our study.

4.3. The practicality of Identified the PHNA

4.3.1. Presentation of the PHNA as Acts with Sense of Purpose

It is said that public health nursing activities are difficult to visualize [21] even PHNs themselves cannot clearly express what results they are working to produce and for whom [22]. This implies obstacles in the transfer of professional information among PHNs and the clarification of roles in cooperation with inhabitants and stakeholders. It has been considered natural to implement the PDCA cycle in conducting activities. However, PDCA only represents a framework of knowledge regarding the order of the process, as the "Plan" stage does not indicate what should be planned and for what purpose. In contrast, the PHNA identified in this study clearly indicates what should be done and for what purpose: actualizing to visualize the realities; supporting to boost motivation; and promoting to disseminate the activities in the whole community. This characteristic should help learners and practitioners understand and acquire the PHNA. We believe that the identification of the PHNA as acts with sense of purpose will improve the ability of PHNs to explain their work as professionals, thus helping to solve the above-mentioned obstacles, and eventually to develop confidence and pride among PHNs.

4.3.2. Presentation of the PHNA for Professionals Working for Administrative Agencies

As mentioned earlier, most PHNs in Japan are working for administrative agencies. The PHNA identified in this study include the characteristics of PHNs working in accordance with the legal division of duties and of nurses providing care to specific communities, and hence reflect the expertise of PHNs, which is different from other professions. It is widely understood that hierarchical relationships exist in administrative agencies in particular, as seen in the auditing of hospitals and restaurants. However, the findings indicate that PHNs, or public health nursing professionals, are involved in [Cooperation <Adjustment for Development>] and [Continuing Quality Improvement <Collaborative Knowledge Development>] on an equal footing with inhabitants and stakeholders when they engage with the community to promote Positive Health. Thus, the identification of the PHNA in the context of developing various potentials to enhance SC effectively demonstrates that PHNs contribute to the roles and responsibilities of administrative agencies by acting as general coordinators, and that their activities have an impact on the whole community, enhancing sustainability in the long term.

4.4. Implications and Limitations of This Study, and Remaining Challenges

The limitations from samples of 5 activities could not be denied and the details of art contained by each subcategory were not clear enough. The remaining challenges included the substantiation of the PHNA at the subcategory level, and the PHNA should be considered not only in Japan but also in other countries by an international perspective.

In addition, after a series of qualitative researches, an

empirical study will be required to clarify how much the application from PHNA to practice contributes to enhancing SC, furthermore, the development and dissemination of program to acquire the PHNA will be expected.

CONCLUSION

In this study, we were able to extract a variety of PHNA to enhance SC by listening to the excellent activities from various fields and regions. The use of this art was expected to contribute to enhancing the SC for positive health.

AUTHOR CONTRIBUTIONS

Study design: R.Okamoto., M.Kageyuma., K.Koide., S.Iwamoto., and K.Golda.; data collection and analysis: All authors.; manuscript writing: R.Okamoto., M.Kageyuma., K.Koide.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The study plan was approved by the Ethics Committee for Observational Study, Osaka University Hospital (approval No.16392, 30 January 2017).

HUMAN AND ANIMAL RIGHTS

No animals/humans were used for studies that are the basis of this research.

CONSENT FOR PUBLICATION

Researchers obtained the participants written informed consent before first interview took place.

AVAILABILITY OF DATA AND MATERIALS

Not applicable.

FUNDING

CONFLICTS OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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