JAPAN JOURNAL OF
NURSING SCIENCE

Japan Journal of Nursing Science (2018) **15**, 135–145 doi:10.1111/jjns.12178

ORIGINAL ARTICLE

Social capital in Japan: What characteristics do public health nurses see in their communities?

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Abstract

Aim: A concept of social capital that accounts for a community's cultural background and incorporates social capital into public health nursing practice are needed. This study aimed to describe the characteristics of social capital in the context of public health nursing in Japan.

Methods: The study interviewed 11 veteran public health nurses from five municipalities across Japan and undertook a qualitative research analysis. A digital voice recorder was used to collect qualitative data by using a background data sheet and semistructured interviews. Trustworthiness in interpreting the data was ensured by conducting 13 additional interviews with residents and collating the two sets of results.

Results: All the participants were female: 10 were veterans with ≥15 years' experience. Nine worked in management. The methods yielded six categories: (i) the richness of the interactions among the residents; (ii) the community residents who showed concern for those in need; (iii) community civic activities; (iv) the residents' willingness to contribute to the community; (v) the health promotion volunteers who work alongside the public health nurses; and (vi) an enriched community environment.

Conclusion: The results contribute to an understanding of social capital in the context of public health nursing activities and further research on social capital. It also is discussed how social capital can be incorporated into public health nursing activities in the future.

Key words: health promotion, Japan, public health nurses, qualitative study, social capital.

INTRODUCTION

In recent years, Japan's birth rate has been declining, its population has been aging, and there has been continued depopulation and urbanization. As a result, local communities have fewer young persons who can support local communities' traditional events, festivals, and other undertakings that facilitate interpersonal relationships (Narita, Kobayashi, & Saito, 2015). In addition, in tandem with the globalization of the economy, various forms of employment have emerged, including long working hours and irregular employment (Inoue, Tsurugano, Nishikitani, & Yano, 2012), which has led to diverse lifestyles and values among local communities (Cabinet Office, Government of Japan, 2014a). Furthermore, the permeation of individualism (Ogihara & Uchida, 2014) is making persons increasingly disconnected. For example, the declining birth rate means that parents in the midst of child rearing have fewer opportunities to meet other parents in their vicinity. Mothers have few opportunities to meet persons unless they use a childcare center that has been established by their local administration (Cabinet Office, Government of Japan, 2014b). In contrast, many fathers facing job insecurity are forced to stay at work for hours on end to cope with the intense competition. As for child rearing, the view that individual families are responsible for child rearing is becoming the norm. The problems that

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Received 3 March 2016; accepted 29 March 2017.

communities in Japan face today manifest in health problems that affect vulnerable groups in society.

For parents in the midst of child rearing, the everyday help that community members provide naturally can be a tremendous source of support; in some cases, such assistance can prevent child abuse. However, this community function is now on the decline. A similar problem is the occurrence of solitary death (Fukukawa, 2011), experienced by elderly persons who have no contact with anyone in the community, then die alone and remain undiscovered for some time. There is a need to revive Putnam's (2001) notion of a "community full of human goodness."

Against this backdrop, there is a growing interest in the public health sector in the power that a community possesses, that power being social capital. Putnam (1993) defined social capital as "features of social organisation, such as trust, norms and networks." Other studies have produced a wealth of data showing that social capital is effective in promoting health (Browne-Yung, Ziersch, & Baum, 2013; Kawachi, Kennedy, & Glass, 1999; Pförtner *et al.*, 2015; Yu, Sessions, Fu, & Wall, 2015). There have been many Japanese studies (Inaba, Wada, Ichida, & Nishikawa, 2015; Murayama *et al.*, 2013). More recent studies have focused on the creation of social capital (Andersen et al, 2015; Ehsan, & De Silva, 2015; Im & Rosenberg, 2015). With the revision of Japan's "Guide for Public Health in the Community by Public Health Nurses" (Ministry of Health, Labour and Welfare, 2013a), a new plan was created to support public health nursing, with an emphasis on creating social capital.

However, many problems with social capital research remain. Although continuity in cross-sectional research has been verified, causality in longitudinal studies has not been adequately established (Murayama *et al.*, 2013). The evidence is also limited. For example, although it has been shown that health is linked to social capital at the individual level (which measures the networks between individuals, among other elements), there appears to be no connection between health-related indices and social capital at the district level, which uses a multilevel analysis (Murayama, Wakui, Arami, Sugawara, & Yoshie, 2012).

An obstacle regarding the quantitative research on social capital is that it does not adequately consider cultural backgrounds. De Silva *et al.* (2006) and Hanibuchi *et al.* (2012) pointed out that social capital depends on cultural influences, while Murayama *et al.* (2013) cited local characteristics as a limitation on research outcomes. Moreover, none of the preceding studies qualitatively depicted social capital concepts. Hanibuchi *et al.* (2008) reported that community assessments that are carried out by Japan's public health nurses (PHNs) not only measure a community's health standards, they also reflect that community's social capital. Thus, this study aims to describe the characteristics of social capital, as observed by Japan's PHNs.

As of 2014, Japan had 48,452 PHNs, 71.2% of whom worked in a community health hub, which could be a municipal or prefectural health center (Ministry of Health, Labour and Welfare, 2016). The PHNs support persons from infancy to old age. They not only provide direct care, they also promote community health by building collaborative relationships with key local figures, organizations, and volunteer groups. In this way, the PHNs both use an area's social capital and contribute to the activities that foster it (Japan Academy of Public Health Nursing, 2015). A notable feature of public health nursing is that PHNs not only provide support to individuals, but also at a local level by ascertaining the features and cultural background of the place where residents live. Given that PHNs have in-depth knowledge of local residents' lives, interviewing them about the social capital of the area they serve should offer insight into the residents' behaviors, attitudes, and philosophies that reflect trust, norms, and networks: the components of social capital, according to Putnam (1993).

The results should promote future research on social capital and help to develop public health nursing practice that is oriented toward creating social capital. Using qualitative descriptive methods, the study describes the characteristics of social capital, as recognized by Japan's PHNs from a health promotion perspective.

METHODS

Defining social capital

For the purposes of this study, the researchers drew primarily on the idea of social capital as proposed by Putnam (1993), who defined it as: "features of social organisations, such as trust, norms and networks that can improve the efficiency of society by facilitating coordinated actions." Baum and Ziersch (2003) classified social capital into "structural" and "cognitive" aspects and this classification was adopted in the study. Thus, when drafting the interview guide, it was envisaged that the local resources and networks were the structural elements and trust in interpersonal relationships and affection toward the community were the

cognitive features. Also referred to was the classification that is used by Ichida *et al.* (2009), wherein social capital is divided into a "community level" and an "individual level," the former describing a group effect on individuals and the latter describing individuals' use of social capital. In this study, the focus was primarily on social capital from a local angle.

Design and sample

Qualitative research methods (Holloway & Wheeler, 2002) were adopted because they do not merely describe an experience, but rather aim to theorize interview narratives by placing importance on the contexts they embody, including a local area's history, culture, and persons' thoughts and behaviors. It was aimed to gather data on the PHNs' experiences of supporting local residents and civic activities through their practice and extracting the elements of a community's social capital from such interactional episodes. It also was aimed to clarify the significance that social capital has in the context of public health nursing practice. It was deemed that qualitative research methods were the most apt for this purpose.

As Figure 1 shows, the participants were 11 PHNs from five municipalities in Japan. Civic activities generate various social networks and affect the richness of social capital (Collom, 2008). The richness of social capital also is known to correlate with the average lifespan (Kawachi, Kennedy, Lochner, & Prothrow-Stith, 1997). The five municipalities were selected based on their dynamic civic activities and residents' long average lifespan. The average lifespan in Japan is as high as 79.6 years for men and 86.4 years for women (Ministry of Health, Labor and Welfare, 2013b). A condition for the municipalities that were chosen was that the residents' average lifespan be longer than the national one. Regarding the selection of the research fields, PHNs whom the authors had met during previous research activities and who had served municipalities that, according to the PHNs, had dynamic voluntary activities that were led by health promotion volunteers and/or other individuals were recruited. Ultimately, municipalities that indicated their consent were chosen.

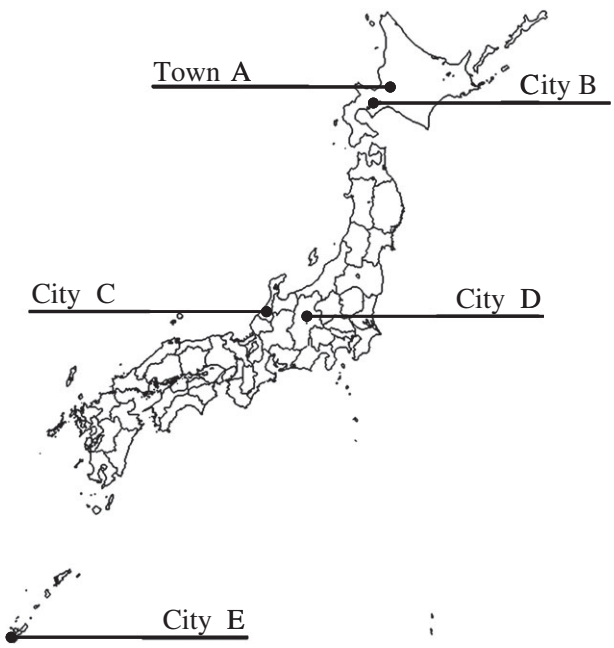

Figure 1 Fields from which the participants were recruited from the locations shown.

The concordance between PHNs' community assessments and social capital in their respective areas is better among veteran PHNs, compared to younger nurses (Hanibuchi, Murata, Ichida, Hirai, & Kondo, 2008). Therefore, participation in the study was made conditional on having at least 5 years' experience as a PHN supporting civic activities. The purpose and general outline of the study was explained to those in charge of the respective municipalities' health management departments and these persons introduced the candidates to us who fulfilled the aforementioned requirement. It then was requested that these individuals participate.

Working in pairs, the authors visited each municipal hall to collect the data via in-depth face-to-face interviews using a background data sheet and semistructured interviews. The background data included the participant's sex, age, years of experience as a PHN, post or rank, and main duties to date. The respondents were given an abstract briefing on the research purpose ("To clarify PHNs' perceptions of social capital"). Then, the participants answered the interview questions described below, based on their own views of social capital. In order to ensure that the PHNs would speak freely about their ideas of social capital, the authors refrained from disclosing these notions, which they had formulated tentatively prior to commencing the study.

During the interviews, the participants were asked to reflect on the activities of the persons in the communities they served and to discuss the residents' characteristics and interactions that could facilitate health promotion. The three main questions pertained to: (i) how the interactions between persons were characterized; (ii) civic activities in the community; and (iii) the social resources that would help foster bonds between community members.

The PHNs were interviewed individually over 40–60 min and their answers were recorded digitally between September and December, 2013. Follow-up interviews were conducted in August, 2015 (following the first round of interviews) in order to saturate the data and to allow the participants to check the interview content with two of the nurses.

Analytic strategy

The recorded audio data that pertained to the participants who were interviewed by the four research collaborators were transcribed and subjected to a primary analysis. The first author then integrated the data and conducted a deeper analysis by focusing on the narratives that described social capital and interpreted the narratives for each context. Then, the codes were extracted and synthesized in a three-stage process, which resulted in the final codes. Subcategories were created by examining the similarities among the various codes, then forming categories by structuring the commonalities and linkages among the diverse subcategories. The categories' names were designed to express the PHNs' perspectives and the names of the subcategories were arranged to describe the subconcepts of the respective categories. In creating the categories, the codes and transcript data were re-analyzed, as necessary.

Trustworthiness (Holloway & Wheeler, 2002) was ensured in the interpretation of the results by conducting 13 more interviews with two-to-three representatives from the different municipalities. The representatives were individuals who were involved in supporting the administrative policies on a voluntary basis and chiefly were referred to as "welfare commissioners" or "health promotion personnel." The data from the 13 interviews were analyzed separately from the data pertaining to the PHNs; then, the concepts that were generated from each analysis were collated. This comparison reconfirmed the veracity of the results from the PHNs' data. The data were re-examined by using information that was obtained from the follow-up interviews, which further corroborated the veracity of the initial data. The above processes involved two nursing students and the participation of four individuals who were PHNs, as well as researchers. Repeated discussions were held among all the participants until they reached a consensus.

Ethical considerations

The research ethics committee of the Faculty of Health Sciences of Hokkaido University and Sapporo City University, Japan, approved this study. The participants were given written and oral explanations that detailed the purpose, confidentiality, interview method, dissemination plan, and their right to withdraw. All the participants consented in writing.

RESULTS

Table 1 summarizes the participants who were recruited from the municipalities of various sizes across Japan, from sparsely populated towns to densely populated cities. All the participants were female. One of the respondents had 8 years' experience, while the remaining 10 were veterans with ≥15 years of experience. Nine participants were serving in a managerial capacity as chief or manager. Their unique backgrounds contributed to an understanding of the diverse practices within public health, while also highlighting the characteristics of social capital.

Table 1 Summary of the participants

No.	Municipality	Population	Sex	Age (years)	Experience as PHN (years)	Position
1	Town A	17,204	F	38	16	Staff
2	Town A		F	40	18	Chief
3	City B	1,948,262	F	42	18	Chief
4	City B		F	40	16	Chief
5	City B		F	31	9	Staff
6	City C	108,783	F	57	34	Manager
7	City C		F	59	34	Manager
8	City D	383,608	F	30	8	Staff
9	City D		F	38	16	Staff
10	City E	54,473	F	57	29	Manager
11	City E		F	50	22	Manager

PHN, public health nurse.

Table 2 shows the attributes of social capital, as identified by the PHNs. Social capital is comprised of the six categories that are discussed below, as well as 19 subcategories.

Richness of the interactions among the residents

The oral transmission of local information from one person to another describes the degree to which persons in that community are engaging in close-knit interactions. The key to such interactions is, first and foremost, the community's openness to new participants. The PHNs mentioned that the local persons' history, the generational differences in values, and the peace of mind obtained through interacting are all related to the richness of the community's social capital. Thus, the PHNs were interested in the richness of the interactions in their communities, in terms of the diversity and functions of intracommunity connections.

Community residents who showed concern for those in need

The PHNs focused on the community's latent potential for protecting vulnerable persons, such as the elderly and children. They also identified the community's power to cope with crises, such as natural disasters. Thus, the PHNs were interested in what kind of preventive actions the residents were taking against dangers that could threaten the community or whether they had the power to deal with such dangers.

Civic activities rooted in the community

The PHNs focused on the importance of persons with specific health challenges, including child rearing and nursing care, and having opportunities to gather together and interact. They felt that the community's cohesiveness is enhanced through traditional events and activities that are carried out by neighborhood associations, which cannot occur without the entire community's cooperation. The PHNs had faith in the power of each resident who contributed to community-building and felt that it was important to ensure there are plenty of opportunities for such willingness to be used. Here, civic activities refer to a diverse range of voluntary activities, including those carried out via autonomous local organizations to which residents belong and those that span local neighborhood groups and cover the entire municipality.

Residents' willingness to contribute to the community

The PHNs focused on how the residents who participate in local activities have a clear idea of the community's issues and exhibit a willingness to contribute to resolving problems. They also identified key figures in the community, individuals who are particularly enthusiastic about community activities, and whom other residents trust very well. When assessing the residents' willingness to engage in voluntary activities, the PHNs considered this aspect (the participatory attitudes of the residents), together with the administrative support system for facilitating civic events.

Health promotion volunteers who work alongside the public health nurses

The health promotion volunteers obtained health-related information and skills from the PHNs, which they brought back to their community. Afterward, they carried out dissemination tasks. The welfare commissioners acted as volunteers, caring for the vulnerable, and reported to the PHNs, as necessary. The PHNs felt reassured by the presence of the volunteers who collaborated in this way. The PHNs distinguished collaboration between the PHNs and health promotion volunteers from general civic activities on the basis that such a partnership provides the PHNs with opportunities to directly use social capital, while also fostering it.

Community environment that enriches life

The PHNs felt that the residents' affection and pride in their town promoted mutual interactions and civic activities and helped to create rich social capital. The convenience of life in the town was understood as an element of the social context that necessitated mutual assistance among the residents and civic activities.

DISCUSSION

Japan's PHNs described a community's social capital according to six categories. This section discusses the meaning of these categories (which were extracted from the nurses' activities) and relates them to the notions of social capital that was outlined previously. According to Baum and Ziersch (2003), social capital has cognitive and structural properties. Cognitive social capital comprises subjective traits, such as trust, norms of reciprocity, values, and attitudes, while structural social capital

Table 2 Characteristics of the local social capital, as identified by the public health nurses (PHNs)

Category	Subcategory	Typical code
Richness of the interactions among the residents-	Local information network, based on word-of-mouth	• When persons come in for a check-up, they bring along a local acquaintance • Information on volunteer seminars is spread by word-of-mouth, leading to increased numbers of participants
	Community openness to newcomers	• The persons in this community have a gentle temperament, which creates a welcoming atmosphere for those who come to the village from other areas • The persons in this community are hospitable
	Strong relationships among persons with a sense of shared history	• In communities' historically self-contained, detached houses, persons know their neighbors • Many persons in this community are relatives, which forms the basis for connections among persons
	Relationships form whereby the residents know each other's faces and names	• Residents know who is living in their neighborhood • Persons who are living in cities and areas with lots of apartment blocks do not know their neighbors
	Diverse ways of connecting, based on generations and values	• Adults and young persons who live in cities place more value on their workplace relationships or connections with specific groups, rather than with the local community • Importance is placed on maintaining the "right" amount of distance from persons in order to avoid interfering with their lives
	Interactions give persons peace of mind	• Persons who live in communities with vibrant neighborhood associations feel secure about their community • Participating in local activities leads to persons caring about each other's health
Community residents who showed concern for those in need	Community members consider vulnerable persons	• Persons' concern for the elderly influences others to feel the same way • Volunteers help schoolchildren cross the pedestrian crosswalks on their way to and from school
	Relationships that enable mutual support during emergencies	• A willingness to help neighbors during emergencies • In this town, persons are still willing to help each other, which is a form of communal power
Civic activities rooted in the community	Opportunities for meetings and interactions that foster connections with others	• The day care that is run by the community center provides mothers with an opportunity to interact • Participants get along with each other at PHNs' managing health classes; thus, the participants motivate each other, leading to a stronger willingness to improve their health
	Neighborhood associations are actively involved in community-building	• Residents take turns serving as neighborhood association officers and make great efforts to energize the community • The PHNs rely on the organizational power of the local elderly associations in order to attract persons to preventive care classes

Table 2 Continued

Category	Subcategory	Typical code
	Residents make efforts to support traditional events	• Residents support the community's festivals, which have fostered ties among the residents • It is customary to invite community members to celebrate when children come of age and other milestones of life
	Opportunities for using the power that all the residents possess	• Young persons join youth associations and get involved in civic activities • A local organization has emerged to replace the women's association that previously existed
Residents' willingness to contribute to the community	Volunteer groups carry out activities freely and have fun in the process	• Volunteers are increasingly planning new activities themselves • Residents are very willing to make their own efforts to improve the community
	The existence of influential key figures in the community	• Welfare commissioners who win the trust of the whole community have a strong voice and the ability to act • If the PHNs make a request in an adept manner, persons in the community will cooperate wholeheartedly
	The administrative organ provides a system to support civic activities	• Importance is placed on the mayor supporting residents' autonomous activities • The municipal hall has set up an advisory service to support civic activities
Health promotion volunteers who work alongside the PHNs to promote health	Dynamic activities occur due to the efforts of voluntary groups that were trained as part of the administrative policy	• Despite having been trained as part of administrative policy, the group of coordinators who promote improving one's diet continues to develop activities that are rooted in the community • Welfare commissioners watch over the elderly persons who are living on their own by regularly visiting their home
	Volunteers who act as a pipeline between the residents and the administration	• Information is transferred from the PHNs to health promotion coordinators, who then disseminate the information in their district • Based on the administration's plan to promote dietary education, the respective coordinators help to advance traditional recipes that use local ingredients
A community environment that enriches life	The residents feel affection and pride toward their town	• A feeling of pride in the history and tenacious community spirit of the town, which developed as a company town • Mothers who feel affection toward their community have skills for making good connections with others
	Life is convenient in the town	• Many families maintain their own vegetable garden; this gives them opportunities to interact with others, which in turn contributes to health promotion for themselves and the persons with whom they interact • Small shops went out of business and a large supermarket was built on the outskirts of town; as a result, the elderly residents who cannot travel far because they do not have a car tend to become secluded

comprises interpersonal networks, organized activities, and systems.

The PHNs identified the core attributes of social capital as the "richness of the interactions among the residents" and "persons in the community who showed concern for those in need." These categories correspond to cognitive social capital and represent the foundational character of the community members who influence the richness of structural social capital. Whenever PHNs assist individuals, they do so by positioning a given person within the context of his or her neighborhood interactions. Accordingly, the two cognitive categories closely reflect the ways in which the PHNs regularly view the persons in their district.

According to Szreter and Woolcock (2004), structural social capital can be further divided into "horizontal" and "vertical" social capital (this latter type is also referred to as "linking" social capital). Horizontal social capital refers to egalitarian relationships among individuals and groups, whereas vertical social capital refers to hierarchical relationships. "civic activities that are rooted in the community" and "opportunities to use the residents' willingness to contribute to the community" probably refer to the horizontal activities of social capital, while "volunteers who work alongside the PHNs in health promotion" most likely describes vertical social capital. Over time, the PHNs have cultivated many community self-help groups (Kageyama, Nakamura, Kobayashi, & Yokoyama, 2015) for dealing with a myriad of health problems. These groups conduct autonomous activities to facilitate peer support and have helped to foster horizontal social capital. The PHNs also have trained and aided the activities of various voluntary groups that help to advance administrative policies; for example, health promotion volunteers (Murayama, Taguchi, & Murashima, 2012), those who improve food and nutrition issues (Ishikawa, Kusama, & Shikanai, 2015), and commissioned child welfare volunteers (Sato & Fukahara, 2015). These groups are all headed by a chairperson and are stratified and organized into their respective district blocks. Moreover, in their role as the facilitators of public health policy, these volunteers work together with the PHNs. This civic activity helps to further vertical social capital. Thus, the results highlighted how the PHNs focus on both the horizontal and the vertical social capital in their communities.

However, in this study, the authors were unable to collect enough narrative data to verify the vertical (linking) social capital that was related to hierarchical or unequal relations resulting from differences in power or resource bases and status. The authors believe the reason is that stratified social status is not conspicuous in Japanese communities. Yet nowadays, social disparity gradually has become a serious problem in Japan. Insight from the PHNs on vertical social capital might become increasingly important in modern Japan.

According to Szreter and Woolcock (2004), social capital can be categorized into "bonding" and "bridging" social capital. The former is described as "inward-looking" networks among individuals with similar sociodemographic and social characteristics. Conversely, the latter is described as "outward-looking" networks that include individuals of various social classes and age groups, which provide connections to diverse social resources. These two types of social capital are reflected in the present study's categories. For example, the category "richness of the interactions among the residents" describes bonding social capital and the category "volunteers who work alongside the PHNs in health promotion" describes activities that help to foster bridging social capital. Thus, the PHNs were aware of both bonding and bridging social capital.

However, according to Moore, Daniel, Gauvin, and Dubé (2009), a high level of social capital does not necessarily lead to a positive outcome. In order to access the necessary resources, networks (which can be weak) must be sufficiently broad. The PHNs have trained and aided various kinds of community groups, which might be why their communities have developed well-balanced social capital.

Payet *et al.* (2005) introduced community pride as something that advances social capital by developing partnerships and increasing cohesiveness among individuals; it energizes the local community and contributes to sustainable health promotion. Here, the category "community environment that enriches life" describes such community pride.

Implications for public health nursing

Cognitive and structural social capital mutually complement each other (Uphoff, 2000). The PHNs' constant efforts to construct a system of mutual care in their community are arguably helping to promote structural social capital. Although cognitive social capital is harder to see, examples of it include the Orange Ribbon campaign (Japan Network for Prevention of Child Abuse and Neglect, 2010), which the present Japanese Government is advancing to spread awareness about preventing child abuse. Another example is the dementia support caravan (Ministry of Health, Labour and

Welfare, 2006) that encourages a correct understanding of dementia and mutual support; dementia is an increasingly important issue, given Japan's aging society. By facilitating such national policies at the district level, the PHNs can make cognitive and structural approaches, thus advancing social capital in a synergistic manner.

The characteristics of social capital that were obtained in the present study also represent the PHNs' assessments of their respective community. A core competency of the PHNs is to treat the community as a target of nursing care (Reckinger, Cross, Block, Josten, & Savik, 2013). Conducting a community assessment as a step in such nursing care is another key skill for PHNs (De Marco & Segraves, 2012; Maurer & Smith, 2009). This study's results contribute to an understanding of social capital in the context of public health nursing activities. Moreover, the six categories that the results yielded have the potential to serve as a framework for assessing communities from the angle of social capital.

Strengths and limitations of the study

One limitation of this study is that only a small number of communities was investigated. Over the years, public health policy in Japan has become standardized throughout the country. However, because Japan has a wide range of latitudes, both the climate and historical contexts can vary considerably across regions. Accordingly, diversity will appear in the way that policies are tailored to various cultural backgrounds. There is also likely to be a discrepancy between the public health nursing activities in densely populated cities and those in rural villages, which are becoming increasingly sparsely populated. In order to mitigate such disparities, the authors recruited PHNs from a broad spectrum of different-sized municipalities throughout the Japanese archipelago.

In addition, during the field selection, municipalities were targeted that had dynamic civic activities. However, if one was to include apparent counter-cases in which social capital was not adequately fostered, this would enable researchers to illustrate what issues and problems would arise when there is only a weak level of social capital; this might yield fresh insights into social capital. When interpreting the results of this study, one must exercise caution in generalizing the results.

CONCLUSION

This study clarified the characteristics of local communities' social capital, as recognized by Japan's PHNs. It revealed that the PHNs have a multifaceted view of social capital, based on their experiences in providing assistance to individuals and working with voluntary groups. The study also has given meaning to social capital in the context of public health nursing activities. In so doing, suggestions have been offered as to how social capital can be incorporated into public health nursing activities in the future.

ACKNOWLEDGMENT

This work was supported by Japan Society for the Promotion of Science KAKENHI Grant No. JP25463608.

CONFLICT OF INTEREST

No conflict of interest has been declared by the authors.

AUTHOR CONTRIBUTIONS

M. K., H. H., Y. S., and R. T. contributed to the conception and design of this study; M. K., H. H., Y. S., R. T., A. N., and Y. N carried out the data collection and analysis; H. H. drafted the manuscript; M. K. critically reviewed the manuscript and supervised the whole study process. All the authors approved the final version of the manuscript.

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