

RESEARCH ARTICLE

Association between public health nurses' involvement in local healthcare planning and the corresponding off-the-job training

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Abstract

Objective: This study investigated the association between receiving off-the-job training and the involvement of public health nurses in local healthcare planning.

Design: A nationwide, cross-sectional study design.

Methods: We sent self-report questionnaires to 2,185 public health nurses with experience in developing local healthcare plans in Japan since 2013 and collected information related to three main categories: demographic data, involvement in local healthcare planning and strategies for healthcare planning.

Results: We received 1,281 responses (return rate of 58.6%), of which 231 did not meet the inclusion criteria. Thus, we analysed 1,050 valid responses. Among the 1,050 respondents, 496 (47.2%) had received off-the-job training in healthcare planning. A subsequent logistic regression analysis revealed that the following factors were associated with this achievement: holding a managerial position, receiving healthcare planning education at the undergraduate level, having mentors regarding the promotion of it, partially conducting cross-sectional coordination and conducting groupwork with community-dwelling residents.

KEYWORDS

competency, policy, public health nursing, quantitative approaches

1 | INTRODUCTION

Local healthcare planning is crucial for improving health inequities and meeting community health needs (Marmot, 2017). Therefore, local governments need to establish fully developed local healthcare plans to promote overall community health (Japan Ministry of

Health, Labour and Welfare, 2013). In this context, public health nurses (PHNs) play a crucial role, particularly during the healthcare planning stage (American Public Health Association, Public Health Nursing Section, 2013). In fact, PHNs work as part of the public sector's front-line bureaucracy and have direct opportunities to identify community health needs through their daily practices; this allows for

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critical information to be collected when developing needs-oriented health policies (Lipsky, 2010; Yoshioka-Maeda, 2020a). Accordingly, PHNs can address the gap between local healthcare plans and actual community health needs, making them leaders of the local healthcare planning process (Yoshioka-Maeda et al., 2021). However, the association between the involvement of PHNs—as front-line staff for local governments—in local healthcare planning and their receipt of off-the-job training (Off-JT) seminars in each local government to ensure nursing quality remains unclear.

1.1 | Background

In Japan, PHNs are primarily employed in street-level bureaucratic work and public health nursing (Yoshioka-Maeda, 2020a) because most have already served in a local government capacity (Japan Ministry of Health, Labour and Welfare, 2019). Indeed, national guidelines emphasize that PHNs should be responsible for developing need-oriented local healthcare plans that are designed to promote community health (Japan Ministry of Health, Labour and Welfare, 2013). In 2008, this responsibility was also officially included in the skill achievements that were outlined for public health nursing students (Japan Ministry of Health, Labour and Welfare, 2008) and was later implemented as a component of the national PHN examination requirements in 2017 (Japan Ministry of Health, Labour and Welfare). As such, Japanese educational institutions for PHNs have recently established local healthcare planning as part of their undergraduate curricula (Japan Ministry of Health, Labour and Welfare, 2017). However, undergraduate students have faced some difficulties when attempting to acquire this skill (Suzuki et al., 2016). For example, healthcare planning is typically learned through the career development process (Saeki et al., 2020; Shariff, 2014); thus, students are unable to obtain a full understanding of this skill during their undergraduate studies. In general, relatively few opportunities exist to learn about local healthcare planning during the undergraduate courses; therefore, students lack confidence about the implementation of this skill (Shiomi, 2015). In sum, PHNs would benefit from receiving Off-JT that is specifically focused on local healthcare planning to enhance their competencies.

At present, little is known about the association between receiving Off-JT and PHNs who are engaged in local healthcare planning. Most of the previous studies have focused on certain advantages and methods related to the improvement of health programme planning (Campbell et al., 2020; Heiman et al., 2015; Shiomi, 2015; Yoshioka-Maeda et al., 2019; Yoshioka-Maeda & Murashima, 2013). In Japan, each local government conducts Off-JT programs for PHNs, which include novices, intermediaries and managers. In fact, a nationwide survey reported that 78.2% of PHNs had participated in novice-level Off-JT (Japan Nurses Association, 2018). However, this percentage decreased as the hierarchical level increased, and there was also a lack of evidence concerning Off-JT that was specifically targeted at local healthcare planning (Japan Nurses Association, 2018).

The previous studies have also shown that certain policy development factors should be promoted, such as the inclusion of facilitators that have experience in health policy development, to serve as mentors for PHNs (Shariff, 2014), and collaboration with external organizations (Valaitis et al., 2016). Furthermore, a review of the literature in Japan (Yoshioka-Maeda, 2020b) found that most case reports have only partially investigated the process of local healthcare plan implementation, while no studies have reported any association between receiving Off-JT and PHNs who are engaged in local healthcare planning. Moreover, while the review also showed the strategies that the PHNs used for healthcare planning, the association between the PHNs' strategies and local healthcare planning remains unclear (Yoshioka-Maeda, 2020b). Therefore, further research is needed to clarify the association between receiving Off-JT and the involvement of PHNs in local healthcare planning. This is highly important because the results can be used to enhance the development of health promotion strategies and thereby reduce the health inequities in communities through the help of PHNs. Therefore, this study investigates the following research question: Is receiving Off-JT for local healthcare planning associated with the PHNs' involvement in the process?

1.2 | Aim of the study

This study investigates the association between receiving Off-JT and the involvement of PHNs in the local healthcare planning process to promote effective needs-oriented healthcare planning.

2 | METHODS

2.1 | Design

A nationwide cross-sectional survey was conducted in Japan from October to November of 2019.

2.2 | Setting and samples

Japan has 47 prefectures with 1,634 municipalities, which comprise of administrative divisions and legislative autonomy (Local Autonomy Act, 1947). Owing to limited funding, we recruited participants with the assistance of 708 local governments, including 47 prefectural governments, 116 municipalities with public health centres and 545 randomly selected municipalities without public health centres (nearly 30% of the 1,634 total). Since the items for this survey were created initially, we could not calculate the sample size in advance. Therefore, we assumed a 40% response rate for the survey and a 30% selection rate for the municipalities that did not have public health centres in consideration of our budgetary constraints.

We sent letters to the directors of public health nursing in each prefecture/municipality, in which we asked them to identify PHNs who met the following inclusion criteria: (1) permanent staff member and (2) had experience in developing local healthcare plans since 2013 (i.e. when the national guidelines for public health nursing were published). We asked them to exclude part-time staff because they could not adequately participate in healthcare planning. With the help of the 428 directors who responded, we recruited 2,185 PHNs from a total of 230 governments (i.e. 36 prefectures and 41 municipalities with public health centres and 153 municipalities without public health centres). It should be noted that we could not send questionnaires to four areas that were affected by a typhoon in October 2019.

2.3 | Data collection

We developed a self-administered questionnaire based on the previous research in Japan (Hoshino et al., 2014; Hosoya, 2006; Saeki et al., 2006; Suzuki & Yamada, 2002; Taguchi, 2010; Tounai et al., 2003). We included items on demographic characteristics, involvement in local healthcare planning and strategies for healthcare planning; each of which were set as independent variables to answer our research question. The dependent variable was set as receiving Off-JT for local healthcare planning. To improve the questionnaire, we conducted a pre-test with 16 PHNs. We used their feedback to revise the questions and ensure their suitability for the nationwide context (Colton & Covert, 2007).

2.3.1 | Demographic data

Participants were asked for their gender, age, years of experience as a PHN, educational background (i.e. vocational training school, junior college, university or graduate school), designation (i.e. under the section chief or section chief or higher) and affiliation (i.e. prefecture or municipality) (Yoshioka-Maeda & Murashima, 2013). They also answered whether they had received education in healthcare planning in their undergraduate programme. Finally, they answered whether they had colleagues who served as mentors about the promotion of healthcare planning and also provided information on the most difficult experiences while developing local healthcare plans.

2.3.2 | Involvement in local healthcare planning

We included items on the level of involvement in the healthcare planning process for the prefectural PHNs and asked whether they outsourced any parts of this process to consulting firms (Taguchi, 2010). Regarding involvement in local healthcare planning, we included items on the collection of information about

professional organizations, community health needs, budgeting, conducting cross-sectional coordination and utilization of research evidence (Hoshino et al., 2014; Hosoya, 2006; Taguchi, 2010; Tounai et al., 2003).

2.3.3 | Strategies implemented by PHNs in the context of local healthcare planning

We also asked participants to choose from 22 strategies that they implemented for local healthcare planning (Hosoya, 2006; Saeki et al., 2006; Suzuki & Yamada, 2002; Tounai et al., 2003).

2.3.4 | Experience with receiving Off-JT for local healthcare planning

For the questionnaire's final component, we asked participants whether they had received Off-JT for local healthcare planning.

2.4 | Analysis

Of the 2,185 recruited participants, 1,281 answered the questionnaire (response rate of 58.6%). However, the data of 231 respondents were excluded from the analysis owing to their lack of experience in health programme planning since 2013 ($n = 203$), incomplete questionnaires ($n = 26$) and part-time PHNs ($n = 2$). Therefore, we analysed responses from a total of 1,050 questionnaires (effective response rate of 48.1%).

After collecting the data, we divided the participants into two groups based on whether they had received Off-JT for local healthcare planning, and categorized them as the "education group" or "non-education group." We then used a chi-squared test, Fisher's exact test, Welch's *t*-test and Mann-Whitney *U*-test to assess intergroup differences. Multicollinearity was assessed between the independent variables via the variance inflation factor (<2.0). Next, we examined the association between receiving Off-JT for healthcare planning and other independent variables according to the odds ratios (ORs) and 95% confidence intervals (CIs). The stepwise-forward method with the likelihood ratio test was used to select the independent variables to maximize Nagelkerke's R^2 . All analyses were conducted using IBM SPSS for Windows (version 25; IBM Corp, Armonk, NY, USA), with *p*-values of <0.05 indicating statistically significant intergroup differences.

2.5 | Ethics

This study received institutional review board approval in September 2019 (no: NIPH-IBRA#12252). We ensured participants' privacy by not collecting personal information or data that identified their respective public sectors. All participants were given written

explanations of the study aims and privacy assurances prior to completing the questionnaire. All participants provided informed written consent by completing a form that was returned alongside their questionnaire.

3 | RESULTS

3.1 | Participants' demographics and involvement in local healthcare planning

Table 1 shows the participants' demographic characteristics. As indicated, 496 (47.2%) were in the education group and 554 (52.8%) were in the non-education group. In general, the participants in the education group had significantly more than one year of experience working as a PHN ($p = .002$) or were in managerial positions ($p = .043$). They were also more probably to have received education in local healthcare planning at the undergraduate level ($p < .001$) and worked with colleagues who served as mentors about the promotion of healthcare planning when compared to those in the non-education group ($p < .001$). The participants in the two groups demonstrated no significant differences in their educational background, affiliation and difficult experiences while developing local healthcare plans.

Next, the non-education group reported involvement with prefectural PHNs about the healthcare planning process ($p = .018$) and utilization of public comment systems ($p = .024$) when compared to the education group. The education group reported groupwork with community-dwelling residents ($p < .001$), serving on a municipal healthcare planning committee ($p = .04$) and conducting partial cross-sectional coordination ($p = .001$) when compared to the non-education group. The two participant groups reported no significant differences about outsourcing any part of the healthcare planning process to consulting firms, the collection of information about professional organizations, conducting a questionnaire survey, budgeting and using research evidence when developing local healthcare plans.

3.2 | Strategies implemented by PHNs in the context of local healthcare planning

Table 2 shows the strategies that the participants used in the context of local healthcare planning. The four strategies of "arranging meetings for local healthcare planning" ($p = .033$), "identifying disparities between regions (or districts) within the jurisdiction" ($p = .032$), "considering the overall planning schedule" ($p = .028$) and "collaborating with community-dwelling residents to implement the local health plans" ($p < .001$) were significantly associated with receiving Off-JT for local healthcare planning. There were no significant differences between the groups in implementing the remaining 18 strategies in the local healthcare planning context.

3.3 | Variables associated with receiving Off-JT for healthcare planning among PHNs

Table 3 shows the results of the logistic regression analysis that was conducted to identify, which variables that were related to receiving Off-JT for local healthcare planning. First, a previous study showed that age and years of experience as a PHN are synonymous with a job title (Yoshioka-Maeda et al., 2021). For this reason, it was selected as the independent variable. There was no multicollinearity between the independent variables, which showed significant associations in the univariate analysis. The results also showed that several factors were strongly associated with receiving Off-JT for local healthcare planning among PHNs, including holding a position above the section chief (OR = 1.67, 95% CI = 1.22–2.28, $p = .002$), having experience with healthcare planning education at the undergraduate level (OR = 3.13, 95% CI = 2.17–4.50, $p < .001$), working with colleagues who have served as mentors about the promotion of healthcare planning (OR = 2.14, 95% CI = 1.58–2.91, $p < .001$), conducting partial cross-sectional coordination (OR = 1.47, 95% CI = 1.10–1.96, $p = .009$) and conducting groupwork with community-dwelling residents (OR = 3.08, 95% CI = 1.90–4.98, $p < .001$). Conversely, lacking involvement of PHNs from prefectural and public health centres throughout the healthcare planning process (OR = .67, 95% CI = 0.49–0.93, $p = .016$) was negatively associated with non-receiving Off-JT for local healthcare planning. Additionally, the use of a public comment system to collect information on community health needs (OR = .64, 95% CI = 0.46–0.87, $p = .005$) was negatively associated with receiving Off-JT for local healthcare planning.

4 | DISCUSSION

This Japanese nationwide cross-sectional survey revealed that only 47.2% of the PHNs had received Off-JT for local healthcare planning. One of the influencing factors was having a managerial position, receiving undergraduate education and having mentors about the promotion of healthcare planning. Indeed, the previous research has shown that it is difficult for undergraduate nursing students to gain policy development/programme planning competency (Larsen & Reif, 2019; Suzuki et al., 2016), whereas those in higher job positions contribute more to the policy development process (Castrucci et al., 2015). However, our results suggest the importance of undergraduate-level education in local healthcare planning. Additionally, PHNs may acquire competency through both career development and daily practice (Saeki et al., 2020). Colleagues play an essential role in planning process (Yoshioka-Maeda et al., 2021). Our results suggest that receiving Off-JT in local healthcare planning should also be used to complement PHNs' on-the-job training.

We found that lacking involvement of prefectural PHNs in the healthcare planning process was associated with non-receiving Off-JT for healthcare planning. In contrast, cross-sectional coordination practice was associated with receiving it. Following the Community Health Act, prefectural PHNs support and advise

TABLE 1 Participant demographics and their involvement in local healthcare planning.

Variables	Non-education group		Education group		p-value
	(n = 554)		(n = 496)		
	n	%	n	%	
Demographic data					
Gender					
Male	16	2.9	11	2.2	.560
Female	534	96.4	484	97.6	
Age (years) ^a					
20s	22	4.0	14	2.8	<.001
30s	70	12.6	40	8.1	
40s	168	30.3	143	28.8	
50s and 60s	294	53.1	299	60.3	
Years of experience as a PHN ^b					
Mean (SD)	24.4	9.3	26.0	8.4	.002
Educational background					
Vocational training school	312	56.3	293	59.1	.772
Junior college	72	13.0	60	12.1	
University	137	24.7	111	22.4	
Graduate school	31	5.6	28	5.6	
Designation					
Under the section chief	186	33.6	136	27.4	.043
Above the section chief	360	65.0	347	70.0	
Affiliation					
Prefecture	218	39.4	188	37.9	.657
Municipality	335	60.5	307	61.9	
Previous experience with healthcare planning education at the undergraduate level					
Yes	488	88.1	329	66.3	<.001
No	63	11.4	160	32.3	
Working with colleagues who have served as mentors about the promotion of healthcare planning					
Yes	240	43.3	119	24.0	<.001
No	311	56.1	374	75.4	
The most difficult experiences when developing local health plans					
Health promotion plan	148	26.7	146	29.4	.051
Data health plan	51	9.2	68	13.7	
Medical care plan	79	14.3	66	13.3	
Community suicide prevention plan	82	14.8	59	11.9	
Maternal and child health plan	27	4.9	16	3.2	
Disability welfare plan	19	3.4	14	2.8	
Food education promotion plan	18	3.2	4	0.8	
Long-term care insurance business support plan	8	1.4	12	2.4	
Basic plan to promote cancer control programmes	10	1.8	4	0.8	
Expenditure regulation plan	5	0.9	4	0.8	
Specific health check-up implementation plan	4	0.7	4	0.8	
Others	35	6.3	39	7.9	

TABLE 1 (Continued)

Variables	Non-education group		Education group		p-value
	(n = 554)		(n = 496)		
	n	%	n	%	
PHN involvement in local healthcare planning					
Involvement of PHNs from prefectural and public health centres through the healthcare planning process					
No	360	65.0	361	72.8	.018
Yes	157	28.3	112	22.6	
Outsourcing any portion of the healthcare planning process to consulting firms					
None	347	62.6	305	61.5	.142
Outsourcing survey for community-dwelling people	71	12.8	52	10.5	
Outsourcing basic documentation	56	10.1	44	8.9	
Almost all outsourced	35	6.3	45	9.1	
Collection of information about professional organizations					
No	137	24.7	141	28.4	.282
Yes	343	61.9	301	60.7	
Collecting information on community healthcare needs					
Using public comment systems					
No	143	25.8	160	32.3	.024
Yes	402	72.6	328	66.1	
Conducting a questionnaire survey					
No	300	54.2	257	51.8	.454
Yes	245	44.2	231	46.6	
Conducting groupwork with community-dwelling residents					
No	506	91.3	410	82.7	<.001
Yes	39	7.0	78	15.7	
Serving on a municipal healthcare planning committee with community-dwelling residents					
No	354	63.9	286	57.7	.040
Yes	191	34.5	202	40.7	
Budgeting					
Not at all	39	7.0	39	7.9	.939
The prospect to secure a budget	186	33.6	189	38.1	
Obtained a budget	208	37.5	201	40.5	
Conducting cross-sectional coordination					
Not at all	170	30.7	103	20.8	.001
Partially conducted	279	50.4	299	60.3	
Almost all conducted	100	18.1	88	17.7	
Using research evidence ^a					
Not at all	48	8.7	48	9.7	.161
A little	133	24.0	95	19.2	
Quite a lot	223	40.3	226	45.6	
Very much	87	15.7	88	17.7	

Note: N = 1,050. PHNs = public health nurses.

^aMann-Whitney U-test.

^bWelch's t-test Other: chi-squared test or Fisher's exact test.

municipal PHNs to enhance policies, develop community healthcare systems and implement human resources (Japan Ministry of Health, Labour and Welfare, 1994). The national government has specifically

emphasized that prefectural and municipal PHNs should collaborate during the policy development process while engaging in cross-sectional coordination at the local level (Japan Ministry of Health,

TABLE 2 Strategies implemented by PHNs in the context of local healthcare planning.

Strategies	Non-education group (n = 554)		Education group (n = 496)		p
	n	%	n	%	
1. Arranging meetings for local healthcare planning					
Used	423	76.4	414	83.5	.033
Not used	91	16.4	60	12.1	
2. Coordinating with related departments in the local government					
Used	477	86.1	455	91.7	.090
Not used	45	8.1	28	5.6	
3. Coordinating with related organizations and residents outside the local government					
Used	443	80.0	427	86.1	.115
Not used	79	14.3	56	11.3	
4. Sharing objectives and issues with relevant people inside and outside the local government					
Used	473	85.4	445	89.7	.433
Not used	49	8.8	38	7.7	
5. Obtaining professional advice and cooperation from a university					
Used	295	53.2	302	60.9	.054
Not used	227	41.0	181	36.5	
6. Health issue analysis using existing data					
Used	500	90.3	471	95.0	.162
Not used	22	4.0	12	2.4	
7. Identifying disparities between regions (or districts) in the jurisdiction					
Used	369	66.6	371	74.8	.032
Not used	153	27.6	112	22.6	
8. Listing the existing projects and relevant sections					
Used	400	72.2	391	78.8	.105
Not used	122	22.0	92	18.5	
9. Conducting questionnaires and hearing surveys to identify health issues					
Used	389	70.2	376	75.8	.236
Not used	133	24.0	107	21.6	
10. Reflecting the health issues identified through daily practice in the plan					
Used	479	86.5	458	92.3	.060
Not used	43	7.8	25	5.0	
11. Selecting priority issues					
Used	492	88.8	466	94.0	.102
Not used	30	5.4	17	3.4	
12. Setting the target population					
Used	405	73.1	387	78.0	.354
Not used	117	21.1	96	19.4	
13. Representing the community vision					
Used	468	84.5	438	88.3	.598
Not used	54	9.7	45	9.1	

TABLE 2 (Continued)

Strategies	Non-education group (n = 554)		Education group (n = 496)		p
	n	%	n	%	
14. Examining specific intervention methods					
Used	460	83.0	439	88.5	.181
Not used	62	11.2	44	8.9	
15. Considering the level of consistency with related plans					
Used	495	89.4	455	91.7	.679
Not used	27	4.9	28	5.6	
16. Systematizing policies, programmes, and projects					
Used	483	87.2	456	91.9	.253
Not used	39	7.0	27	5.4	
17. Considering the overall planning schedule					
Used	484	87.4	464	93.5	.028
Not used	38	6.9	19	3.8	
18. Setting goals and objectives for each programme and project					
Used	504	91.0	470	94.8	.585
Not used	18	3.2	13	2.6	
19. Establishing evaluation indicators and methods for each programme and project					
Used	502	90.6	467	94.2	.735
Not used	20	3.6	16	3.2	
20. Managing implementational progress for the local health plan					
Used	474	85.6	444	89.5	.575
Not used	48	8.7	39	7.9	
21. Collaborating with community-dwelling residents to implement local health plans					
Used	345	62.3	366	73.8	<.001
Not used	177	31.9	117	23.6	
22. Handing over related data from predecessors					
Used	430	77.6	413	83.3	.198
Not used	92	16.6	70	14.1	

Note: N = 1,050. PHNs = public health nurses.

Chi-squared test or Fisher's exact test.

Labour and Welfare, 2013). Multi-sector and multi-level coordination are also important factors for resolving the social determinants of health issues, which are complicated by disadvantages, differentiations and gradients (Baker et al., 2018). In this context, prefectural-municipal collaboration and cross-sectional coordination are crucial for resolving complicated community health needs throughout the local healthcare planning process and require the assistance of qualified PHNs. Therefore, it is important for these professionals to receive ongoing education in healthcare planning. Such additional training will provide innovative opportunities for PHNs to address community health needs in general.

The results showed that conducting groupwork was significantly associated with receiving Off-JT for healthcare planning. In fact, the previous research has shown that better needs-oriented policies are produced when considering narratives and ideas that are presented

TABLE 3 Variables associated with continuing education for healthcare planning among PHNs.

Variable	B	SE	OR	95% C.I.		p-value
				Lower	Upper	
Demographic data						
Designation						
Under the section chief	(Ref)					
Above the section chief	.51	.16	1.67	1.22	2.28	0.002
Previous experience with healthcare planning education at the undergraduate level						
No	(Ref)					
Yes	1.14	.19	3.13	2.17	4.50	<0.001
Working with colleagues who have served as mentors about the promotion of healthcare planning						
No	(Ref)					
Yes	.76	.16	2.14	1.58	2.91	<0.001
PHN involvement in local healthcare planning						
Involvement of PHNs from prefectural and public health centres through the healthcare planning process						
Yes	(Ref)					
No	-.40	.16	.67	.49	.93	0.016
Conducting cross-sectional coordination						
Not at all	(Ref)					
Partially conducted	.39	.15	1.47	1.10	1.96	0.009
Using public comment systems						
No	(Ref)					
Yes	-.46	.16	.64	.46	.87	0.005
Conducting groupwork with community-dwelling residents						
No	(Ref)					
Yes	1.12	.25	3.08	1.90	4.98	<0.001

Note: N = 890. PHNs = public health nurses; SE = standard error; OR = odds ratio; C.I. = confidence interval.

Nagelkerke $R^2 = 0.185$.

Hosmer & Lemeshow test = 0.480 ($\chi^2 = 7.541$).

by community-dwelling residents (Fadlallah et al., 2019; Farmer et al., 2018), and these types of narratives have also been used to improve the effectiveness of healthcare systems (Brunton et al., 2017). Since PHNs have responsibilities for improving community health inequities through an upstream approach to policy (Mabhala, 2015), they should work as mediators to bridge the gap between community needs and health policy development. Furthermore, community members can offer empirical knowledge about and perspectives on community health, so their involvement is crucial for proper health policy implementation (Sacks et al., 2017). A previous research has also shown that community involvement and collaboration are essential factors for achieving intended goals and positively impacting community health outcomes (Haldane et al., 2019; Weiss et al., 2016). Therefore, receiving Off-JT for local healthcare planning can help PHNs to further promote the concept of collaboration with community-dwelling residents when implementing local healthcare plans, especially the plans that target community health equity.

Conversely, our results showed that the use of public comment systems to collect information on community health needs

was negatively associated with receiving Off-JT for local healthcare planning. The public comment system was first implemented in Japan in 2005 and has since become the most common strategy for both collecting opinions from community-dwelling residents and promoting transparency in policy development (Oyabu, 2018). However, the system can only collect superficial opinions and shows low participation rates (Ogawa, 2017; Tanaka, 2016). The latter issue is probably affected by the Japanese culture of shame, which may influence individuals to withhold their views from local government entities. In sum, the public comment system is flawed and may not be able to achieve substantive progress. Therefore, it is important to ensure that PHNs can collect community narratives through their daily practice, so as to reflect real issues in local healthcare plans.

4.1 | Limitations

This study has the following limitations. First, the 58.6% response rate was relatively low. This was partially because some local governments

had dispatched PHNs to support the communities that were hit by a typhoon; thus, the natural disaster impacted the response rate. Second, there was the potential for both selection and recall bias. The participants solely included PHNs who had experience in local healthcare planning and who were interested in this study's aims, which limited the study's overall generalizability. Third, the questionnaire asked for information concerning a limited number of variables and was developed using a standard pre-test in collaboration with 16 PHNs. Therefore, the psychometric validation of the instrument was inadequate. Future studies should include additional relevant factors to assess how organizational characteristics affect healthcare planning.

4.2 | Implications for nursing policy, leadership and practice, and recommendations for future research

PHNs play a leading role in the development of needs-oriented health policies (American Public Health Association, Public Health Nursing Section, 2013) as they can identify the community health needs to be addressed by local governments through policy development (Yoshioka-Maeda, 2020a). Local health planning is a measure that effectively resolves community health needs and promote health equities in the community, and is an upstream intervention by PHNs (Yoshioka-Maeda et al., 2021). However, our nationwide survey revealed that less than half of the PHNs had received Off-JT for local healthcare planning. Therefore, for effective needs-oriented local healthcare planning development, PHNs need to receive Off-JT to learn strategies. Future research should develop educational modules to enhance PHNs' knowledge and skills about the development of local healthcare plans and should examine its effect through randomized control trials.

5 | CONCLUSION

This study conducted the first nationwide cross-sectional survey to illustrate the association between the receipt of Off-JT for local healthcare planning and the PHNs' experience in local healthcare planning. Our results indicated that PHNs who received Off-JT for local healthcare planning tend to be more deeply involved throughout the process. Moreover, our findings show that PHNs are crucial for bridging the gap between community health needs and health policies, particularly the policies that target the reduction in health inequities. As front-line agents of change, PHNs should have opportunities to receive Off-JT for local healthcare planning to ensure the development of needs-oriented local healthcare plans based on community collaboration.

AUTHOR CONTRIBUTIONS

KYM, MS, TK, NH, HF and MT contributed to the study design. KYM, MS, TK, NH, HF and MT were responsible for the data collection. KYM and HF conducted data acquisition and analysis. KYM, MS, TK, NH, HF and MT contributed to the interpretation of data. KYM contributed to the drafting of the manuscript. KYM, MS, TK,

NH, HF and MT revised the manuscript and approved the final version of the manuscript.

All authors have agreed on the final version and meet at least one of the following criteria [recommended by the ICMJE (<http://www.icmje.org/recommendations/>)]:

- substantial contributions to conception and design, acquisition of data or analysis and interpretation of data;
- drafting the article or revising it critically for important intellectual content.

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to disclose.

DATA AVAILABILITY STATEMENT

The data of this study are not publicly available because permission of the participants has not been obtained.

ETHICAL APPROVAL

Ethical approval for this study was obtained from the institutional review board in September 2019 (no: NIPH-IBRA#12252). All participants were given written explanations of the study aims and privacy assurances prior to completing the questionnaire. All participants provided informed written consent by completing a form that was returned along side their questionnaire.

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