

Impressions and Turning points of Japanese public health dietitians: a web-based cross-sectional study

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ABSTRACT: *Background/Purpose:* The purpose of this study was to clarify the impressions and turning points (hereinafter referred to as “impressions”) of each organization where public health dietitians work in Japan. *Method:* In 2021, we conducted a complete Web-survey of Japanese public health dietitians working in prefectures, special wards and cities with public health centers, and municipalities. The impressions and turning points of the participants were classified based on the basic guidelines for improving health promotion and nutrition and dietary habits by public health dietitians in the community. *Results:* The sample of responses included 425, 323, and 914 public health dietitians working in prefectures, special wards and cities with public health centers, and municipalities, respectively. The most impressionable factors for prefectural dietitians were collaborative work, work experience other than health and sanitation departments, health crisis management, self-operated and planned projects, work at the headquarter, and research activities. Public health dietitians in special wards and cities with public health centers were most impressed by work experience other than health and sanitation departments, resident support, health guidance, collaborative work, self-planned and managed projects, and maternal and child health. Municipal public health dietitians were most impressed by maternal and child health, adult health, welfare for older adults, collaborative work, changing jobs to administrative positions, and general interpersonal work. *Conclusion:* We found regardless of the organization where Japanese public health dietitians work meaningful experiences were similar. Support of these experiences may improve self-efficacy of public health dietitians.

Key Words: public health dietitians, self-efficacy, impression, turning point, duty, Japan

INTRODUCTION

Public health nutrition is the art and science of promoting population health status via sustainable improvements in the food and nutrition system. Based on public health principles, it is a set of comprehensive and collaborative activities, ecological in perspective, and intersectoral in scope; it includes environmental, educational, economic, technical, and legislative measures (1). For example, public health dietitians implement salt reduction in communities through assessing community, informing to people, and collaboration with stakeholders (2). Dietitians are specialists responsible for public health nutrition activities. The number of public health dietitians working at public health centers and health centers is smaller than that of public health nurses in Japan (3). To promote businesses with a small number of people, increasing self-efficacy is essential (4).

Self-efficacy, as proposed by Bandura, is an individual’s belief in how well they can perform the actions required to produce a certain result (4). Individuals with high self-efficacy exhibit behavioral characteristics such as willingness to make a great deal of effort, willingness to tackle challenges, and a high

degree of expectation for eventual success (4).

Extant literature has reported that professionalism and self-efficacy are associated with length of service, personal development, skill improvement, meaningful clinical experience, and participation in social and external activities (5). The Ministry of Health, Labour and Welfare presents the work of public health dietitians in prefectures, special wards and cities with health centers, and municipalities (6). Little is known about what working activities are meaningful experiences for public health dietitians.

The duties of public health dietitians working in prefectures, special wards and cities with public health centers, and municipalities vary (6). Therefore, this study aims to clarify public health dietitians’ meaningful experiences, through investigating the impressions and turning points in each type of organization where public health dietitians work. The results of this study may help improve the work of public health dietitians.

MATERIALS AND METHODS

1. Participants

We conducted a cross-sectional survey among dietitians working in prefectures, special wards and cities with public health centers, and municipalities. The inclusion criteria for the study participants were:

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(1) those who responded as public health dietitians in a survey by the Ministry of Health, Labour and Welfare; and (2) those with a full-time or part-time (at least four days a week and at least six hours a day) employment status. However, those currently working full-time in fields such as childcare, welfare for older adults, boards of education, and medical care were excluded.

Request letters were sent in January 2021 to dietitians at supervise bureaus who met the inclusion criteria. In the request letters, we specified the purpose of the survey and the URL and QR code linked to the online questionnaire. The web-survey was conducted from January 29, 2021, to March 2, 2021 (Survey Research Center Co., Ltd.). A request for cooperation was presented at the beginning of the questionnaire form. The request clearly stated the purpose of the survey and outlined that all responses and participation would be anonymous, cooperation in the survey was voluntary, responses would be regarded as consent, and that there would be no disadvantage for non-responses. Additionally, since there was a possibility that personally identifiable information may be transmitted to us when returning responses, we asked the commissioning company to create screens related to the questionnaire responses and receive all replies. This meant that the researchers would only receive simply entered databases obtained by the consignment company, and no identifiable respondent information, such as email addresses. All information was destroyed after the survey was completed and secondary use of the data for other purposes was prohibited.

Due to the wide inclusion criteria, the survey request was sent to an unknown number of public health dietitians in Japan, however the final sample of responses included 425, 323, and 914 public health dietitians working in prefectures, special wards and cities with public health centers, and municipalities, respectively.

Public awareness and cooperation regarding the survey was obtained from the public health department of the Japan Dietetic Association and the Japan association of public health center registered dietitians.

Procedures for this study were followed in accordance with the ethical standards of the Helsinki Declaration and were approved by the Ethical committee of Osaka City University (Institutional Review Board protocol 20-27, approval date: August 14, 2020).

2. Survey items

The survey included items regarding age, sex, and length of service for each main type of work. Additionally, dietitians working in prefectures and special wards and cities with public health centers were asked about the length of duties mainly responsible for community health promotion and improving nutrition and dietary habits at the health department (the headquarter), public health centers, and health centers, food hygiene-related departments, welfare for older adults, and boards of education. We asked dietitians working in municipalities about the length of their main duties, such as community health promotion and improving nutrition and dietary habits at health centers, welfare for older adults, child welfare, and boards of education.

Regarding impressions and turning points,

participants were asked, "What was the work that left the most impression on you, or what was the turning point for you?" The responses were categorized based on the Ministry of Health, Labour and Welfare's "basic guidelines for health promotion and improvement of nutrition and dietary habits by public health dietitians in the community" (6). The impressions and turning points of dietitians working in prefectures and special wards and cities with public health centers extracted from the survey responses included: maternal and child health projects, projects with older adults, specific health guidance, guidance to specific food service facilities, collaboration with health mates, community assessments, work experience other than health and sanitation departments, work at the headquarters, work at public health centers, changing jobs to administrative positions, planning, food environment improvements, health crisis management, research activities, self-planned and managed projects, presentations at academic conferences, people in the same workplace, general collaborative work, municipal support, duties and initiative as supervisors, human resource development, off-duty activities, participation in workshops, and food labeling work. The extracted impressions and turning points of dietitians working in municipalities included: maternal and child health projects, adult health projects, health guidance, welfare for older adults, general collaborative work, changing jobs to administrative positions, general interpersonal work, collaboration with health mates, health crisis management, work experience other than health and sanitation departments, participation in training sessions, community assessment, self-planned and managed projects, presentations at academic conferences, human resource development, off-duty activities, and people in the same workplace.

RESULTS

Table 1 shows the basic characteristics of the participants. Few dietitians working in prefectures, special wards and cities with public health centers, or municipalities had work experience outside of promoting community health and improving nutrition and dietary habits at the headquarters, public health centers, or health centers. Community health promotion and improvement of nutrition and dietary habits refer to working with food hygiene related departments, welfare for older adults, and boards of education.

The highly ranked impressions and turning points for dietitians working in prefectures included: general collaborative work, work experience other than health and sanitation departments, health crisis management, self-planned and operated projects, work at the headquarters, and research activities (Table 2). The highly ranked impression and turning points for dietitians working in special wards and cities with public health centers included: work experience other than health and sanitation departments, resident support, health guidance, general collaborative work, self-planned and operated projects, and maternal and child health. Finally, the highly ranked impressions and turning points for dietitians working in municipalities included: maternal and child health, adult health, welfare for older adults, general collaborative work, changing jobs to administrative positions, and general interpersonal work.

Table 1. Basic characteristics of participants

		Prefecture (n=452)		Special wards and cities with public health centers (n=323)		Municipalities (n=914)		
		n	(%)	n	(%)	n	(%)	
Age	20s	110	(24.3)	69	(21.4)	227	(24.8)	
	30s	79	(17.5)	87	(26.9)	284	(31.1)	
	40s	120	(26.5)	84	(26.0)	262	(28.7)	
	Over 50s	143	(31.6)	83	(25.7)	141	(15.4)	
Sex	Female	430	(95.1)	311	(96.3)	890	(97.4)	
	Male	22	(4.9)	12	(3.7)	24	(2.6)	
Work history	Local health promotion and improvement of nutrition and eating habits at the hygiene administration department (main government office)	No work experience	249	(55.1)	187	(57.9)	-	-
		<3 years	80	(17.7)	53	(16.4)	-	-
		3-5 years	73	(16.2)	31	(9.6)	-	-
		5-10 years	31	(6.9)	34	(10.5)	-	-
		10-20 years	15	(3.3)	14	(4.3)	-	-
		20-30 years	3	(0.7)	3	(0.9)	-	-
		>30 years	1	(0.2)	1	(0.3)	-	-
	Community health promotion and improvement of nutrition and dietary habits at public health centers and health centers	No work experience	11	(2.4)	13	(4.0)	11	(1.2)
		<3 years	93	(20.6)	81	(25.1)	281	(30.7)
		3-5 years	54	(11.9)	44	(13.6)	133	(14.6)
		5-10 years	75	(16.6)	76	(23.5)	189	(20.7)
		10-20 years	132	(29.2)	69	(21.4)	183	(20.0)
		20-30 years	73	(16.2)	32	(9.9)	107	(11.7)
	Departments related to food hygiene	>30 years	14	(3.1)	8	(2.5)	10	(1.1)
		No work experience	406	(89.8)	293	(90.7)	-	-
		<3 years	22	(4.9)	15	(4.6)	-	-
		3-5 years	10	(2.2)	4	(1.2)	-	-
		5-10 years	11	(2.4)	9	(2.8)	-	-
		10-20 years	3	(0.7)	2	(0.6)	-	-
	Departments related to older adults/Welfare for older adults	20-30 years	0	(0.0)	0	(0.0)	-	-
>30 years		0	(0.0)	0	(0.0)	-	-	
No work experience		435	(96.2)	291	(90.1)	706	(77.2)	
<3 years		8	(1.8)	18	(5.6)	98	(10.7)	
3-5 years		6	(1.3)	7	(2.2)	37	(4.0)	
5-10 years		2	(0.4)	4	(1.2)	36	(3.9)	
Child welfare	10-20 years	1	(0.2)	3	(0.9)	23	(2.5)	
	20-30 years	0	(0.0)	0	(0.0)	12	(1.3)	
	>30 years	0	(0.0)	0	(0.0)	2	(0.2)	
	No work experience	-	-	-	-	730	(79.9)	
	<3 years	-	-	-	-	49	(5.4)	
	3-5 years	-	-	-	-	47	(5.1)	
Board of education	5-10 years	-	-	-	-	51	(5.6)	
	10-20 years	-	-	-	-	28	(3.1)	
	20-30 years	-	-	-	-	8	(0.9)	
	>30 years	-	-	-	-	1	(0.1)	
	No work experience	421	(93.1)	258	(79.9)	796	(87.0)	
	<3 years	8	(1.8)	17	(5.3)	47	(5.1)	
3-5 years	15	(3.3)	15	(4.6)	22	(2.4)		
5-10 years	5	(1.1)	19	(5.9)	32	(3.5)		
10-20 years	3	(0.7)	11	(3.4)	12	(1.3)		
20-30 years	0	(0.0)	3	(0.9)	4	(0.4)		
>30 years	0	(0.0)	0	(0.0)	1	(0.1)		

Table 2. Factors that left an impression on or were a turning point for administrative dietitians

	Prefecture (n=452)		Special wards and cities with public health centers (n=323)		Municipalities (n=914)	
	n	(%)	n	(%)	n	(%)
Maternal and child health	2	(0.4)	16	(5.0)	109	(12.1)
Adult health	0	(0.0)	0	(0.0)	40	(4.4)
Welfare for older adults	12	(2.7)	2	(0.6)	35	(3.9)
Health guidance	12	(2.7)	28	(8.8)	121	(13.4)
Resident support	21	(4.7)	36	(11.3)	0	(0.0)
General interpersonal work	0	(0.0)	0	(0.0)	129	(14.3)
Guidance to specific food service facilities	16	(3.6)	14	(4.4)	0	(0.0)
Collaboration with health mates	7	(1.6)	8	(2.5)	34	(3.8)
General collaborative work	59	(13.1)	26	(8.1)	61	(6.8)
Community assessments	15	(3.3)	4	(1.3)	14	(1.6)
Work experience other than health and sanitation departments	46	(10.2)	39	(12.2)	106	(11.7)
Working at the headquarter	30	(6.7)	8	(2.5)	0	(0.0)
Working at the public health center	3	(0.7)	6	(1.9)	0	(0.0)
Changing jobs to administrative position	13	(2.9)	14	(4.4)	27	(3.0)
Planning	15	(3.3)	15	(4.7)	50	(5.5)
Food environment improvements	11	(2.4)	0	(0.0)	0	(0.0)
Health crisis management	46	(10.2)	11	(3.4)	11	(1.2)
Research activities	27	(6.0)	10	(3.1)	0	(0.0)
Self-planned and managed projects	36	(8.0)	21	(6.6)	17	(1.9)
Presentation at academic conferences	6	(1.3)	4	(1.3)	5	(0.6)
Work behavior of people in the same workplace	13	(2.9)	6	(1.9)	16	(1.8)
Municipal support	6	(1.3)	0	(0.0)	0	(0.0)
Duties and initiative as supervisors	1	(0.2)	0	(0.0)	2	(0.2)
Human resource development	9	(2.0)	0	(0.0)	4	(0.4)
Off-duty activities	4	(0.9)	1	(0.3)	4	(0.4)
Participation in training sessions	6	(1.3)	1	(0.3)	0	(0.0)
Business on food labeling	12	(2.7)	6	(1.9)	0	(0.0)
None	75	(16.7)	55	(17.2)	191	(21.2)

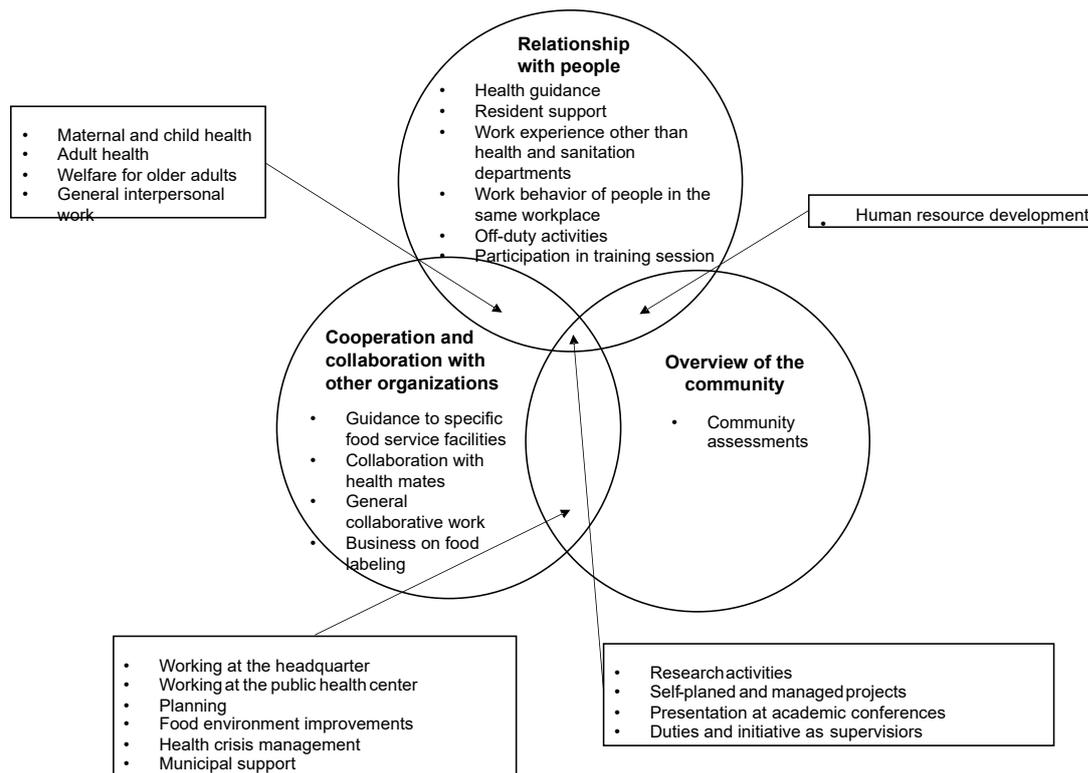


Figure. 1 Three elements that left an impression on or were turning point for public health dietitians.

The impressions and turning points of dietitians are categorized into (1) relationships with people, (2) collaboration and cooperation with other organizations, and (3) overview of the community (Figure 1). However, the three categories are not independent of each other and all have something in common. Put differently, what left an impression or was a turning point for dietitians may be only one category, but it may be related to two or more categories. Additionally, the particulars of the impression and turning points in each category differ from person to person, as identified in their responses. For example, regarding the impression of the “research activities,” one participant described them as “a tough job, but I felt a great sense of accomplishment when I got their cooperation”; therefore, this response was categorized as (1) relationships with people, and (2) collaboration and cooperation with other organizations. Another participant described this impression as “through being involved in a large-scale nutritional survey, the reality of the community has come into view before my eyes,” and this response was categorized as (3) overview of the community. Categories (1) to (3) in Figure 1 are only classified according to the descriptions of the participants of this study, and the content of the duties were not necessarily limited to those categories.

Regarding category (1) relationships with people, some participants described experiences of providing health guidance to individuals and seeing their improved health checkup results in the following year. Additionally, the gratitude expressed by the people involved was described as one that left a lasting impression on dietitians. Residents, health mates, and

dietitians working for other organizations and institutions were described as cooperative organizations. Participants categorized into (2) collaboration and cooperation in other organizations described the difficulty of conveying their thoughts as a public health dietitian to other organizations, being able to carry out projects in collaboration with other organizations, and broadening their perspectives in their responses. The region to be overlooked differs depending on the participants’ organization and may be a prefecture, a municipality under the jurisdiction of the public health center to which the dietitian belongs, or a municipality to which the dietitian belongs. While formulating plans, such as health promotion plans and shokuiku (food and nutrition education) promotion plans, and conducting community assessments, project planning, budget acquisition, and surveys, the respondents described being able to grasp the region from a bird’s-eye view, which left an impression on them. This was also described as having led to a turning point for some respondents.

DISCUSSION

In a previous survey of public health dietitians working in municipalities, project management, establishing a cooperative system, and general education and support were extracted as factors that constituted confidence in duties (7). These three factors correspond, respectively, to the categories used in this study: overview of the community, cooperation and collaboration with other organizations, and relationships with people. The previous survey has also reported the positive experience of the educational effect, as the experience of independent

project management was associated with project management self-efficacy (7). This further corresponds with factors described as leaving an impression or being a turning point in the present study.

Bandura states that self-efficacy is acquired through four sources: performance achievement, vicarious experience, verbal persuasion, and emotional arousal (8). In this study, the best impression or turning point tended to be the achievement of executive behavior and verbal persuasion. The few descriptions of vicarious experiences may be explained by the fact that few public health dietitians share the same workplace.

Public health dietitians' interactions with people depend on their duties. In general, the health statuses of patients in hospitals are more variable than that of community-dwelling residents. Therefore, it is thought that work experience other than health and sanitation departments are more frequently described as leaving an impression or being a turning point.

Nutrition is the foundation for people to live well throughout their lives and is an essential element for realizing a vibrant and sustainable society. Nutrition is relevant at all life stages: pregnancy, infancy, childhood, adolescence, adulthood, and old age. Shokuiku (food and nutrition education) initiatives are developed through collaboration and cooperation among a variety of stakeholders, including nursery schools, schools, governments, food-related groups and organizations, and so on (9). For public health dietitians to respond to such wide-ranging and challenging issues, they must not only work with other occupations within the organization to which they belong but also with various relationships, including dietitians of organizations that they do not belong to and local residents. It is, therefore, necessary to steadily promote measures and obtain results while cooperating with other parties.

Furthermore, it is important for public health nutrition activities to follow the plan-do-check-act cycle based on community assessments (10). Moreover, it is necessary to consider the entire community when formulating budgets and various plans. In the course of community assessments, whose aims are to understand the actual and potential health issues of individuals, families, and the entire community, and consider solutions while clarifying the causes and backgrounds, evaluation and improvement of implemented measures was described as the event that led to obtaining an overview of the community. Additionally, it was noted that people working at the headquarters tended to work at the prefectural level rather than those working at the public health centers, which left a fresh impression on them.

The three categories in this study are included in the career note of lifelong education system for career advancement shown by the Japanese Dietetic Association (11). Katz has shown that effective administration depends on three basic personal skills, which have been called technical, human, and conceptual (12). The three skills correspond to the categories in this study. By developing the three skills through helping experience and train the three categories it may prove useful in improving self-efficacy of Japanese public health dietitians.

The impressions and turning points are divided into three categories in this study, however, as

mentioned in the results, there are many overlapping factors. Furthermore, classifications were made based on the descriptions provided by the participants of this study. Therefore, there is a possibility that certain work contents are related to categories that were not shown in the results of this study.

In this study, more than 10% of public health dietitians described not experiencing any impressions or turning points in their careers. Successful experiences are important factors in enhancing self-efficacy as they tend to leave an impression or become a turning point. Therefore, there is a need for a support program that allows public health dietitians to experience success and increase their self-efficacy.

This study has two limitations. First, to increase the response rate of this survey, we obtained the cooperation of the Japan Dietetic Association and the Japanese association of public health center registered dietitians. The recovery rate was not high; however, the exact recovery rate was unknown because the exact number of public health dietitians in Japan is unknown. There is a possibility that the proportion of respondents in this study does not represent the actual administrative dietitians in Japan. Second, because this survey was conducted during the COVID-19 pandemic, there was a high percentage of respondents who said that health crisis management such as infectious disease countermeasures left an impression on them or served as a turning point.

CONCLUSION

We conducted a survey of public health dietitians working in prefectures, special wards and cities with public health centers, and municipalities. Regardless of the organization they worked for, the factors found to have left an impression on or be considered as turning points for public health dietitians were classified into (1) relationships with people, (2) collaboration with other organizations, and (3) overview of the community. These results suggest that it is important to support these experiences to raise the self-efficacy of public health dietitians.

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REFERENCES

1. Hughes R, Somerset S. Definitions and conceptual frameworks for public health and community nutrition: A discussion paper. *Aust J Nutr Diet* 54: 40–45. 1997.
2. Kojima M, Ogawa Y, Nakagawa K, Kusano A, Seki Y, Hatano C, Isobe S, Tochikura E, Ishida E, Yamazaki O, Hori J, Inoue Y, Suzuki K, Yanabe N, Murakami N. Positive outcomes of salt reduction measures in Niigata prefecture: examining ten years of the “Niigata Gen-en (Salt Reduction) Renaissance Movement” and its results. *Jpn J Nutr Diet.*, 78: 232-242. 2020.
3. Ministry of Health, Labour and Welfare. Overview of regional health and health promotion project reports in 2019. <https://www.mhlw.go.jp/toukei/saikin/hw/c-hoken/19/dl/R01gaikyo.pdf>
4. Bandura A. Self-efficacy: Toward a unifying theory of behavioral change. *Psychol Rev* 84: 191–215. 1977.

5. Koyano Y. The characteristics and related factors of self-efficacy in nurses. *J St Lukes Soc Nurs Res* 3: 78–84. 1999.
6. Ministry of Health, Labour and Welfare. Basic guideline for health promotion and improvements of nutrition and dietary habits by public health dietitians in the community. <https://www.mhlw.go.jp/content/10900000/000637215.pdf>
7. Igarashi M, Yoshida T. Project management self-efficacy and related factors in municipal dietitian. *Jpn J Nutr Diet* 69: 148–159. 2011.
8. Bandura A. *Self-efficacy: The exercise of control*. 1997. W H Freeman and Company, New York.
9. Ministry of Agriculture, Forestry, and Fisheries. The fourth basic plan for the promotion of shokuiku. https://www.maff.go.jp/e/policies/tech_res/attach/pdf/shokuiku-18.pdf
10. El-Kour TY, Kelley K, Bruening M, Robson S, Vogelzang J, Yang J, Jimenez EY. Dietetic workforce capacity assessment for public health nutrition and community nutrition. *J Acad Nutr Diet* 121: 1379–1391. 2021.
11. The Japan Dietetic Association. Career note third version. <https://www.dietitian.or.jp/career/note/documents/>
12. Katz, Robert L. Skills of an effective administrator. 2009. Harvard Business Review Pre

