Scientific Research Publishing

Open Journal of Nursing, 2017, 7, 419-434
http://www.scirp.org/journal/ojn
ISSN Online: 2162-5344
ISSN Print: 2162-5336

Perceived Difficulties Regarding HIV/AIDS Services among Public Health Nurses in the Kinki Region of Western Japan: Implications for Public Health Nursing Education in Japan

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How to cite this paper: Nishimura, Y.H., Iwai, M., Ozaki, A., Waki, A. and Hidaka, Y. (2017) Perceived Difficulties Regarding HIV/AIDS Services among Public Health Nurses in the Kinki Region of Western Japan: Implications for Public Health Nursing Education in Japan. *Open Journal of Nursing*, **7**, 419-434.
https://doi.org/10.4236/ojn.2017.73033

Received: February 25, 2017
Accepted: March 28, 2017
Published: March 31, 2017

Abstract

Objective: To determine the perceived difficulties in providing HIV/AIDS services among public health nurses and to identify their correlates, we carried out a cross-sectional study in the Kinki region of western Japan. **Methods:** Structured self-administered questionnaires were distributed to all public health nurses in the region, and 1535 valid questionnaires were retrieved (valid response rate 78.7%). **Results:** More than half of the participants (52.8%) reported difficulties with HIV/AIDS services. The factors associated with perceived difficulties were having a negative attitude towards consultations on sexual matters (adjusted odds ratio [AOR] 2.2, $p < 0.001$), a perceived lack of encounters with homosexual people and people with HIV/AIDS during practice (AOR 1.6, $p = 0.002$ and AOR 1.8, $p < 0.001$), poor knowledge of sexual diversity (AOR 2.0, $p < 0.001$), lack of training in sexual diversity in public health nursing education (AOR 1.4, $p = 0.016$), and low permissiveness of the diversity of sexual behavior (AOR 2.0, $p < 0.001$). **Conclusions:** Overall, our results suggest that nursing and public health nursing education in Japan should cover sexual issues and HIV/AIDS in a more systematic way.

Keywords

Perceived Difficulties, HIV/AIDS, Public Health Nursing Education, Sexual Diversity

1. Introduction

According to the Japan Ministry of Health, Labour and Welfare's HIV/AIDS Surveillance Committee, 1056 and 473 new HIV and AIDS cases were reported in 2011, respectively. The annual number of reported HIV and AIDS cases in Japan peaked in 2008, and has since stabilized at around 1500 new cases annually. HIV is primarily transmitted through male homosexual behavior—among the reported new cases of HIV and AIDS in 2011, 68% and 55% respectively were among men who had sex with men (MSM) [1]. This situation led the Japanese government to update a special guideline on HIV and AIDS in January 2012, which emphasized the need to improve counseling and testing services for these conditions by making them more accessible to those most vulnerable to HIV infection, such as MSM [2].

In Japan, free and anonymous HIV tests and counseling are provided at public health centers of all prefectures and some large cities. These counseling and testing services are fairly well known to MSM—an Internet study in 2008 indicated that more than half of MSM who ever tested for HIV had used these services [3]. One study carried out in public health centers throughout Japan indicated that public health nurses were in charge of 84.5% of pre-counseling and 61.9% of negative results notification for HIV testing [4]. Given that public health nurses play a key role in providing these services, they are expected to be crucial in implementing HIV prevention programs throughout the country.

Despite this, many public health nurses do not appear to be confident in providing HIV/AIDS services. They consider such counseling/testing services difficult to execute, and feel hesitant, unwilling, or uncomfortable in providing these services [4]. This lack of confidence and discomfort in relation to a particular subject or activity is called a "sense of nigate" in Japanese. Specifically, a sense of nigate refers to a feeling or attitude that can be expressed as "I'm not good at …"; it can apply to people (e.g., in social psychology, a sense of nigate can be defined as an awkward and uncomfortable feeling towards specific others in an interpersonal situation) [5], actions (e.g., waking up early or speaking in public), subjects (e.g., mathematics or gymnastic class), and other phenomenas that people might face in their daily lives. A sense of nigate is synonymous with low or a complete lack of self-efficacy; however, it is more commonly used in Japanese daily lives as an excuse for not doing a particular activity. To facilitate a more universal understanding, we use the English translation of "perceived difficulties" for "sense of nigate" in this article. Thus, perceived difficulties herein refer to having unfavorable and reluctant feelings and attitudes concerning a particular subject caused by a lack of experience or knowledge and emotional reactions that are discordant with one's own values.

As mentioned above, perceived difficulties related to HIV/AIDS services and sex-related matters may be prevailing among public health nurses, which can act as an impediment to the promotion of HIV testing services at public health centers. Despite this, no study has yet directly assessed perceived difficulties related to HIV/AIDS services among public health nurses in Japan. However, there have

been studies on other populations in Japan: one study among Japanese dental health care workers indicated that the majority of them were hesitant to perform dental treatment on HIV-positive patients because of an inadequate knowledge on HIV and AIDS [6]. In another study, primary care physicians in Japan demonstrated a negative attitude towards patients with HIV/AIDS, which was due to the complexity of treatments, prejudice, and fear [7]. Furthermore, a study on Japanese nurses working at hospitals and clinics reported that 59% of subjects reported reluctance to care for a patient with HIV or hepatitis B or C virus (HBV/HCV), which might arise from a perceived risk of infection and having a prejudicial attitude [8]. In western countries, there is a large body of research on HIV-related stigma and discrimination among health care providers, including nurses, but little work has been done specifically with public health nurses [9] [10] [11]. With regard to sex-related matters, in the U.S., Eliason reported a notable silence about lesbian, gay, bisexual, and transgender issues in nursing education [12]. Overall, there is a growing body of literature on nurses' attitude towards sexual minorities, which has clear implications and suggestions for nursing education on these issues [13] [14]. However, given the lack of studies on these issues in Japan, we thought it necessary to assess the perceived difficulties regarding HIV/AIDS services among public health nurses in the western region of Japan.

We were also interested in understanding the factors that correlate with the perceived difficulties related to HIV/AIDS services in order to identify methods of reducing these difficulties. According to the existing literature, the factors underlying perceived difficulties include individuals' experience, knowledge, and values. A qualitative study on the causes of diffidence among mid-level public health nurses who were supporting people with mental disorders identified seven categories of causes, such as a lack of experience and problems with developing a perspective regarding their particular field [15]. Additionally, old age might be a factor, as evidenced by a nationwide Internet survey on prejudice toward individuals with HIV or hepatitis B and C among the working-age population of Japan [16]. A study in Taiwan showed that nurses with longer careers, self-labels of "absolute heterosexual," and high religiousness were more likely to have negative attitudes towards homosexuality [17]. Another study of physicians and physician assistants in Southeast China found that unfavorable attitudes towards people with HIV/AIDS were reported mostly by physicians from remote areas, which the authors of the study interpreted as being influenced by their educational background [18]. Given these findings, the second objective of this study was to explore the factors that correlate with perceived difficulties regarding HIV/AIDS services among Japanese public health nurses.

The objectives of this study are (1) to assess the level of perceived difficulties regarding HIV/AIDS services and (2) to identify their correlates among public health nurses in the western region of Japan. The specific hypotheses examined are as follows: (1) public health nurses with less experience in dealing with people living with HIV/AIDS or sexual minorities will report higher perceived difficulties regarding HIV/AIDS services; (2) public health nurses with less knowledge of

sexual diversity will have higher perceived difficulties regarding HIV/AIDS services; and (3) public health nurses with low permissive attitudes towards diversity of sexual behavior will have higher perceived difficulties regarding HIV/AIDS services.

2. Method

2.1. Study Design

A cross-sectional study using a structured anonymous self-administered questionnaire was carried out in the Kinki region of western Japan between November and December 2011.

2.2. Target Population

The target group of this study was full-time public health nurses working in 6 prefectures and 12 cities of the Kinki region. This region is the second largest economic zone of Japan, and is the location of metropolitan cities such as Osaka, Kyoto, and Kobe. In terms of HIV/AIDS, the Kinki region requires attention because it has the second highest number of reported HIV cases annually, following Tokyo and its surrounding region [1]. In this study, Public health nurses who were on leave at the time of data collection were excluded from the study. No other selection criterion was adopted in recruiting participants. According to the results of a pre-survey administered to local governments in the region, the target population was 1951.

2.3. Questionnaire

The questionnaire was initially designed by a research team comprising public health specialists, a pedagogist, a school nurse, and a midwife specializing in nursing education. The drafted questionnaire was reviewed and revised by several public health nursing officers, and then pre-tested with 23 public health nurses outside the Kinki region. Efforts to increase face validity of the questionnaire were made in this process. Reliability of the whole questionnaire was not statistically assessed because of time constraint. Instead, the internal consistency of some constructs was assessed after data collection.

The outcome variable, perceived difficulties regarding HIV/AIDS services, was assessed by a single item, as follows: "What is the level of your perceived difficulties (sense of nigate) regarding HIV/AIDS services?" There were four response options: "a lot," "some," "little," and "not at all." Although this might be considered somewhat subjective, it is a commonly understood feeling among Japanese people; thus, there was a high likelihood that participants would understand what the question and responses meant.

The correlates of perceived difficulties were categorized into three dimensions: experience, knowledge, and values. The experience dimension included experience with an attitude towards offering consultations on sexual matters, experience with dealing with homosexual people or people with HIV during practice, and whether or not they are friends with homosexual people.

The knowledge dimension comprised knowledge of sexual diversity and educational experiences. Participants' knowledge of sexual diversity was assessed with eight items (e.g., "Homosexuality is a mental disorder"), each with the following three response options: "yes, I think so," "no, I do not think so," or "I do not know" (Figure 1). These items were originally developed for this study. A total score on knowledge of sexual diversity was calculated by counting the number of correct answers (with a perfect score being 8). Using the median split, we categorized those with 6 points or over as the "high knowledge group" and those with 5 points or less as the "low knowledge group." For educational experience, the questions centered on whether they had learned about sexual diversity and HIV/AIDS in their public health nursing education or in any on-the-job training course. Data about the specific contents of these trainings were also collected. In addition, the questionnaire asked about their future needs related to learning about sexual matters and HIV and their favored styles of training.

The values dimension included 11 items assessing individuals' attitudes towards permissiveness of diversity of sexual behavior (Figure 2). For each item, participants responded with one of four options: "acceptable," "maybe acceptable," "may not be acceptable," "not acceptable," and "I do not know." These items and responses were derived from the HIV & Sex survey in 2000 in Japan [19]. The internal consistency of the 11 items was satisfactory ($\alpha = 0.84$). The score of permissiveness of diversity of sexual behavior was then calculated by assigning points to the response options, with "I do not know" being 0 point, "acceptable" being 1 point, and "not acceptable" being 4 points; thus, lower (higher) scores would indicate greater (lower) permissiveness. Again, using a medium split, we categorized those with a score of 27 or less as the high permissiveness group and those with a score of 28 or more as the low permissiveness group.

The obtained demographic information included age, years of working as a public health nurse, and gender. We also asked participants about their current field of work to obtain some basic background information. At the end of the

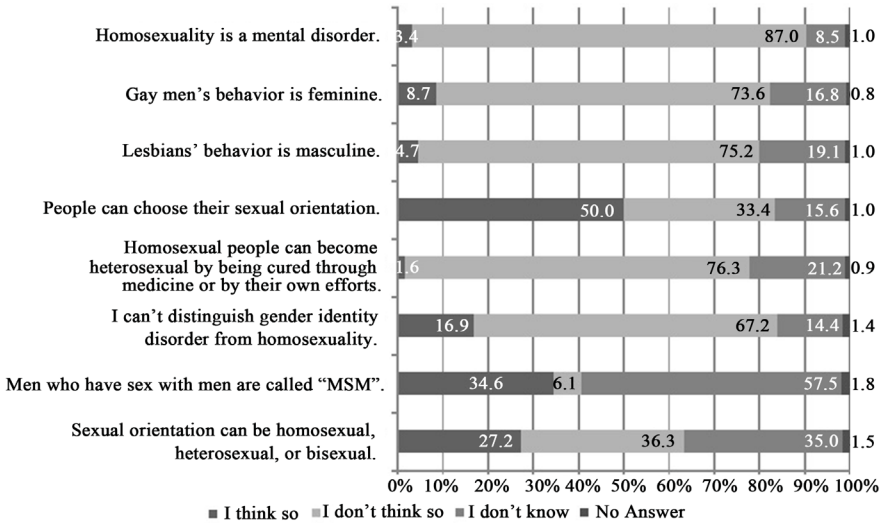

Figure 1. Knowledge on diversity of sexuality.

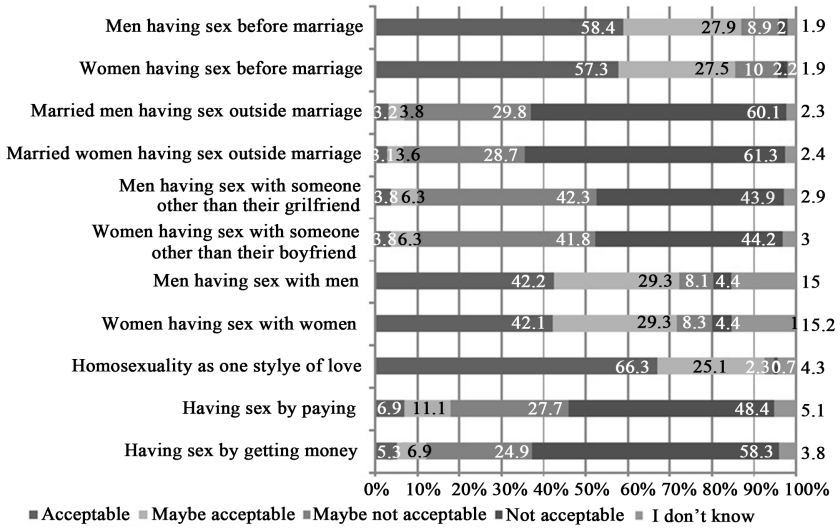

Figure 2. Attitude towards diversity of sexual behavior.

questionnaire, one open-ended question asked how they would like to interact with sexual minorities as a public health nurse.

The questionnaires were distributed and collected through local government offices in each study area. The participants completed the questionnaires on their own and then sealed the questionnaires in envelopes. They handed the envelopes to the officers in charge, who sent the envelopes to the research team by post.

2.4. Statistical Analyses

Statistical analyses were performed using IBM SPSS Statistics 20.0 (IBM Japan Corp., Tokyo, Japan). First, we calculated frequencies and descriptive statistics of all variables. Second, with perceived difficulties regarding HIV/AIDS services as the outcome variable, bivariate and multivariate associations with the dichotomous correlates were assessed using chi-square tests and logistic regression models. The threshold for significance was $p < 0.05$. Qualitative data from the open-ended question were used to complement interpretation of the numerical data.

2.5. Ethical Consideration

The study proposal was reviewed and approved by the Kansai University of Nursing and Health Sciences Research Ethics Committee (on September 29, 2011). In all research procedures, we followed the Declaration of Helsinki (amended in Seoul, 2008) of the World Medical Association and the ethical guidelines for epidemiological studies (amended on December 1, 2008) of the Japanese Ministry of Health, Labour and Welfare and Ministry of Education, Culture, Sports, Science and Technology. The purpose of this study, its procedures, the voluntary basis of participation, and the lack of any need to answer questions that they do not want to answer were written on the first page of the questionnaire. Only participants who gave their consent to participate in the study submitted their finished questionnaire. No identifying information was collected. All the administered ques-

tionnaires and memory sticks containing the study data were kept in the locked cabinet of the principal investigator.

3. Results

By the end of December 2011, 1545 questionnaires had been collected, of which 10 were incomplete and therefore omitted. As a result, we obtained 1535 valid questionnaires for further analysis (valid response rate 78.7%).

3.1. Demographic Characteristics of Participants

Participants' mean age was 40.1 years and they had worked as public health nurses for 17.0 years on average. The vast majority of participants (97.3%) were female. The fields in which they were engaged at the time of this study (multiple answers) were maternal and child health (38.0%), non-communicable diseases (25.0%), tuberculosis (23.6%), mental health (22.8%), HIV/AIDS (22.0%), cancer/lifestyle-related diseases, and other infectious diseases (20.8%).

3.2. Perceived Difficulties Regarding HIV/AIDS Services

More than half of the participants reported having perceived difficulties regarding HIV/AIDS services (with 7.4% having "a lot" and 45.4% having "some") (Table 1).

3.3. Experiences as a Public Health Nurse

The vast majority of participants (87.4%) had experience in offering consultations on sexual matters. The issues raised in these consultations included sexually transmitted diseases (83.3%), HIV (78.2%), family planning (51.4%), sexual matters for young adults and adolescents (48.8%), and sexual orientations (35.9%). With regard to the item asking about their attitude towards consultations on sexual matters, 77.7% responded "I deal with sexual matters as a duty," whereas only 14.3% responded that "I deal with sexual matters in a positive manner." The reasons for responses such as "I feel hesitant to deal with sexual matters (4.8%)" and "I do not want to deal with sexual matters" were assessed using a single question with multiple answers, which revealed that a lack of knowledge of these issues (66.3%) and never having learnt how to handle these matters (42.2%) were commonly reported.

A large proportion (49.3%) of participants had encountered homosexual people during practice, but most (59.2%) did not have homosexual people as their friends. Notably, there were high rates of "do not know" responses to these questions (36.8% and 28.0%, respectively) (Table 1).

3.4. Knowledge of Sexual Diversity and Educational Experience

Participants' responses to the items assessing their knowledge on diversity of sexuality are shown in Figure 1. There were some evident misperceptions among the participants. For example, 50% responded "I think so" to the statement "People can choose their sexual orientation," despite the fact that sexual orientation is not a choice, a notion which causes distress to many sexual minorities. Additionally,

Table 1. Demographic characteristics of participants, perceived difficulties regarding HIV/AIDS services, and experiences as a public health nurse (n = 1535).

	Number	%
Demographic characteristics		
Age		
Less than 40 years	666	43.4
40 years and more	828	53.9
No answer	41	2.7
Work experience as a public health nurse		
<20 years	841	54.8
≥20 years	686	44.7
No answer	8	0.5
Gender		
Female	1493	97.3
Male	24	1.6
Other	0	0.0
No answer	18	1.2
Perceived difficulties regarding HIV/AIDS services		
A lot	114	7.4
Some	697	45.4
Little	599	39.0
Not at all	97	6.3
No answer	28	1.8
Experiences as a public health nurse		
Offered consultations on sexual matters		
Yes	1341	87.4
No	128	8.3
No answer	66	4.3
Attitude towards consultations on sexual matters		
Deal with sexual matters in a positive manner	219	14.3
Deal with sexual matters as a duty	1193	77.7
Feel hesitant in dealing with sexual matters	73	4.8
Do not want to deal with sexual matters at all	9	0.6
Other	3	0.2
No answer	38	2.5

Continued

Encounter homosexual people during practice		
Yes	757	49.3
No	207	13.5
Do not know	565	36.8
No answer	6	0.4
Friends with homosexual people		
Yes	188	12.2
No	909	59.2
Do not know	430	28.0
No answer	8	0.5
Encounter people with HIV during practice		
Yes	497	32.4
No	310	20.2
Do not know	720	46.9
No answer	8	0.5

response rates of "I do not know" were relatively high for the statements, "Men who have sex with men are called 'MSM'" and "Sexual orientation can be homosexual, heterosexual, or bisexual" (57.5% and 35.9%, respectively).

For educational experiences, very few (12.1%) had learned about homosexuality and gender dysphoria during their public health nursing education. In contrast, 41.2% had learned of these issues after being qualified as public health nurses. Most of them had learned about HIV/AIDS in their public health nursing education (51.1%) and after they had become a public health nurse (76.4%).

Regarding their needs for future training on sexual diversity, participants reported wanting to learn how to interact with clients who were sexual minorities (66.7%), the opinions and perspectives of sexual minority clients (62.3%), and the relationships of sexual minority clients with their own communities (60.6%). Regarding HIV/AIDS, they wanted to learn the latest guidelines on treatment (81.0%), social welfare for HIV-positive people (68.5%), and the practices of HIV prevention (66.0%). One-day training courses were preferred by 60.5% of participants, and preferred educational materials were handbooks (68.7%), websites (54.3%), and pamphlets (53.7%).

3.5. Values

The results regarding permissiveness towards diversity of sexual behavior are shown in Figure 2. A fairly large number of participants considered sex before marriage as "acceptable." However, more than half of the participants considered sex outside marriage and sex in exchange for money as "not acceptable."

3.6. Correlates of Perceived Difficulties Regarding HIV/AIDS Services

The correlates of perceived difficulties towards HIV/AIDS services were identi-

fied by chi-square tests and logistic regression analysis (adjusted odds ratios [AORs]) (Table 2). In the multivariate analysis, we found that age and work experiences as a public health nurse were not associated with the outcome variable.

Regarding experience, we found that having a negative attitude towards consultations on sexual matters (i.e., treating it as a duty, feeling hesitant, and not wanting to consult at all) (AOR 2.2 [1.6 - 3.1], $p < 0.001$), lack of encountering

Table 2. Dichotomous correlates of perceived difficulties (a sense of nigate) regarding HIV/AIDS services among public health nurses (n = 1535).

		HIV/AIDS services		Odd ratio	p^a	AOR	p^b
		High perceived difficulties	Low perceived difficulties	(95% CI)		(95% CI)	
		Number (%)	Number (%)				
Demographic							
Age	<40 years old	396 (59.9%)	265 (40.1%)	1.6 (1.3 - 2.0)	<0.001	1.2 (0.8 - 1.6)	0.366
	≥40 years old	392 (48.4%)	418 (51.6%)	1		1	
Work experience as PHN[c]	<20 years	427 (58.9%)	298 (41.1%)	1.5 (1.2 - 1.8)	<0.001	1.3 (1.0 - 1.8)	0.089
	≥20 years	384 (49.0%)	399 (51.0%)	1		1	
Experience							
Offered consultations on sexual matters	No	90 (70.9%)	37 (29.1%)	2.2 (1.5 - 3.3)	<0.001	1.0 (0.6 - 1.6)	0.973
	Yes	689 (52.2%)	630 (47.8%)	1		1	
Attitude towards consultations on sexual matters	Negative (As duty/feel hesitant/do not want to)	719 (57.3%)	536 (42.7%)	2.6 (1.9 - 3.5)	<0.001	2.2 (1.6 - 3.1)	<0.001
	Positive	74 (34.1%)	143 (65.9%)	1		1	
Encounter homosexual people during practice	No/do not know	520 (68.3%)	241 (31.7%)	3.4 (2.7 - 4.1)	<0.001	1.6 (1.2 - 2.1)	0.002
	Yes	290 (38.9%)	455 (61.1%)	1		1	
Friends with homosexual people	No/do not know	731 (55.3%)	590 (44.7%)	1.7 (1.3 - 2.4)	0.001	1.2 (0.8 - 1.7)	0.452
	Yes	77 (41.8%)	107 (58.2%)	1		1	
Encounter people with HIV during practice	No/do not know	635 (62.7%)	377 (37.3%)	3.1 (2.5 - 3.9)	<0.001	1.8 (1.4 - 2.4)	<0.001
	Yes	174 (35.3%)	319 (64.7%)	1		1	
Knowledge							
Knowledge of sexual diversity	Low	584 (64.8%)	317 (35.2%)	3.1 (2.5 - 3.9)	<0.001	2.0 (1.5 - 2.5)	<0.001
	High	222 (37.1%)	377 (62.9%)	1		1	
Learned about sexuality in PHN education	No/do not remember	556 (63.3%)	322 (36.7%)	2.6 (2.1 - 3.2)	<0.001	1.4 (1.1 - 1.8)	0.016
	Yes	246 (39.7%)	374 (60.3%)	1		1	
Learned about HIV/AIDS in PHN education	No/do not know	307 (69.9%)	132 (30.1%)	2.8 (2.1 - 3.6)	<0.001	1.3 (0.9 - 1.9)	0.178
	Yes	500 (47.3%)	557 (52.7%)	1		1	
Values							
Permissiveness of sexual behavior diversity	Low	423 (59.7%)	285 (40.3%)	1.6 (1.3 - 2.0)	<0.001	1.5 (1.2 - 2.0)	<0.001
	High	383 (48.3%)	410 (51.7%)	1		1	

a. Chi-square test, b. Logistic regression, c. Public health nurse.

homosexual people during practice (AOR 1.6 [1.2 - 2.1], $p = 0.002$), and lack of encountering people with HIV during practice (AOR 1.8 [1.4 - 2.4], $p < 0.001$), were associated with greater odds of having high perceived difficulties regarding HIV/AIDS. However, the experiences of offering consultations on sexual matters or being friends with homosexual people were not significantly associated with perceived difficulties regarding HIV/AIDS services. Thus, Hypothesis 1 (public health nurses with less experience with people living with HIV/AIDS or sexual minorities will have high perceived difficulties regarding HIV/AIDS) was only partially supported.

Concerning knowledge, having low knowledge of sexual diversity was associated having high perceived difficulties regarding HIV/AIDS services (AOR 2.0 [1.5 - 2.5], $p < 0.001$). Thus, Hypothesis 2 (public health nurses with less knowledge on sexual diversity will have high perceived difficulties regarding HIV/AIDS services) was supported. With regard to educational experiences, not learning about sexual diversity in public health nursing education was associated with having high perceived difficulties regarding HIV/AIDS services (AOR 1.4 [1.1 - 1.8], $p = 0.016$). In contrast, not having learned about HIV/AIDS in public health nursing education was not significantly associated with the outcome variable.

Finally, low permissiveness of diversity of sexual behavior was found to be significantly associated with having high perceived difficulties regarding HIV/AIDS services (AOR 1.5 [1.2 - 2.0], $p < 0.001$). Thus, Hypothesis 3 (public health nurses with low permissive attitudes towards diversity of sexual behavior will have high perceived difficulties regarding HIV/AIDS services) was supported.

4. Discussion

4.1. Perceived Difficulties and Correlates

In this cross-sectional study, we assessed the perceived difficulties regarding HIV/AIDS services among public health nurses working for the local governments of the Kinki region of western Japan, and identified their correlating factors. As expected, more than half of the participants (52.8%) reported some or many perceived difficulties regarding HIV/AIDS services. This prevailing perception has likely hindered the execution of HIV/AIDS-related services, including counseling and testing, at the public health centers in this region. Therefore, it is necessary to determine the means of reducing these perceived difficulties so that public health nurses feel more confident and comfortable in providing HIV/AIDS-related services. The other findings of this study have much to contribute in this regard.

First, a complete lack of experience of encountering homosexual people and people with HIV during practice was associated with greater odds of having high perceived difficulties (AOR 1.6 and 1.8, respectively) compared to those who have had such experiences. Furthermore, although there is a study suggesting that being friends with sexual minorities would have a positive impact on nurses' attitudes towards such minorities, our findings suggest that this has no real im-

pact on perceived difficulties regarding HIV/AIDS services [20]. Thus, as a first step to facilitate provision of HIV/AIDS services among public health nurses, a future training and education session might incorporate opportunities for public health nurses who have encountered sexual minorities and HIV-positive people during practice to share their experiences with those who have not encountered these groups.

Interestingly, attitudes towards offering consultations on sexual matters, rather than actual experience, were significantly associated with having high perceived difficulties regarding HIV/AIDS services. As noted above, most participants (87.4%) had experience in offering consultations on sexual matters, which suggests that knowledge and techniques related to dealing with sexual matters and sexuality are fundamental for public health nurses. However, very few nurses (only 12.1%) had actually learned about sexual diversity in their formal training; this was reflected in the low number of correct answers for certain items regarding knowledge of sexual diversity. These findings suggest that the gap should be filled by including sexual matters in the public health nursing education curriculum.

With regard to knowledge, public health nurses with less knowledge on sexual diversity had greater odds of having high perceived difficulties regarding HIV/AIDS services (AOR 2.0) compared to those with high knowledge, as expected. Relatedly, those who did not have a chance to learn about sexuality in their public health nursing education had greater odds of having high perceived difficulties regarding HIV/AIDS services. Interestingly, however, learning about HIV/AIDS in their formal education was not significantly associated with perceived difficulties, which implies that the content in public health nursing education does not match nurses' needs for their practical work. The in-depth questions revealed that content on HIV/AIDS in their formal education was mostly limited to biomedical knowledge (84.6%), modes of transmission (91.5%), and ways of prevention (86.4%). For their future educational needs, we noted that nurses desired to listen to the voices and understand the lives of sexual minorities and people living with HIV/AIDS, suggesting that such information should be included in public health nursing curriculum. This would ensure that, by the time that nursing students become qualified public health nurses, they feel sufficiently confident to interact with sexual minorities and people with HIV/AIDS as their clients.

Finally, the multivariate analysis indicated that low permissiveness towards diversity of sexual behavior was associated with having high perceived difficulties. In the in-depth open-ended question on this topic, we also found that nurses reported having to continuously struggle to handle concerns of sex and HIV/AIDS without prejudice or bias; indeed several nurses reported "Sex was taboo when I was trained as a public health nurse" or "Sexuality was not as diverse as it is now, when I was young." However, participants said that in working with clients and obtaining knowledge through on-the-job training, they were able to broaden their perspective and change their own perceptions. Given that the clients of public health nurses are becoming increasingly diverse in terms of back-

ground—not only in terms of sexuality, but also in many other aspects of life—training to obtain cultural humility might be included in public health nurses' education. This would enable greater self-reflection before they begin interacting with clients and will help them reconcile their own values with those of their clients [21]. In this way, students might feel more comfortable in executing their health education, which is a required skill for public health nurses [22].

4.2. Implications for Public Health Nursing Education

To reduce the prevailing perceived difficulties regarding HIV/AIDS services among Japanese public health nurses, systematic efforts should be integrated into public health nursing education. Currently, there is an opportunity for implementation of such efforts, as nursing and public health nursing education in Japan are currently undergoing reform and growth, with the rapid proliferation of nursing schools at the undergraduate university level and an amendment to the Act on Public Health Nurses, Midwives, and Nurses in 2009.

It is important to ensure that opportunities to learn about sexuality are given in undergraduate nursing education, which precedes formal public health nursing education. According to Kayashima's report on teaching sexual health in nursing education in Japan, the importance of supporting the understanding of sexuality in nursing practice was recognized by many parties, but so far there has been no concerted effort to actually teach nurses practical skills for use in consultations on sexual matters [23]. Additionally, Mizuno reviewed the syllabi of 80 (out of the 140) schools of nursing at the undergraduate level to identify the status of sexuality education. Finding it largely wanting, she proposed that a course on sexual diversity and its related issues be provided to freshman nursing students [24]. In practice, it might be helpful to adapt a fully developed curriculum created in western countries, such as the Mims-Swenson sexual health model, into the Japanese context [13].

In public health nursing education, providing students with opportunities to listen to the real voices of sexual minorities or people with HIV/AIDS would likely help students better understand these clients. Students might be able to visualize the lives of these people even by reading their accounts or blogs on the Internet. As noted by Carabez, a course assignment to conduct structured interviews with nurses on care of sexual minorities might also help Japanese public health nursing students recognize these issues [25].

Currently working public health nurses also require basic knowledge of sexual diversity and a fuller understanding of the lives of sexual minorities and people with HIV/AIDS. On-the-job training courses may be organized for working public health nurses. This would likely help to reduce prevailing perceived difficulties regarding HIV/AIDS among public health nurses, and hence improve the quality of HIV counseling and testing services at public health centers.

4.3. Limitations

Since this study is cross-sectional, we cannot make inferences on the direction of

the causal relationships for any of the correlations observed. Another possible limitation is the lack of consideration of certain other covariates that might underlie the association found. Furthermore, regarding the items assessing participants' attitudes, we could not eliminate the possible influence of social desirability bias. Finally, this study explanatorily assessed perceived difficulties regarding HIV/AIDS services using a single question; the development and validation of a scale to assess this construct in more detail would be needed, especially in light of the global movement to develop standardized measures of HIV-related stigma and discrimination [26] [27]. By overcoming these limitations, future studies could develop and test the effectiveness of actual interventions that seek to reduce these perceived difficulties by increasing Japanese public health nurses' confidence in dealing with HIV/AIDS and sexual matters.

5. Conclusion

This cross-sectional study revealed that 52.8% of public health nurses in western Japan had perceived difficulties regarding HIV/AIDS services. Considering the factors correlated with these prevailing perceived difficulties in HIV/AIDS, public health nursing education in Japan should focus on sexual issues and HIV/AIDS in a more systematic way.

Acknowledgements

We are grateful to all of the participants who kindly responded to our lengthy questionnaire, as well as the officers who were in charge of distribution and collection of the questionnaires. This study was funded by the Health and Labour Science Research Grant 2011 of the Ministry of Health, Labour and Welfare of Japan.

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