



Nursing Activities of Clinic Nurses in Remote Parts of Japan's Heavy Snowfall Areas

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ABSTRACT

Background: Heavy snowfall areas in Japan with inadequate medical care and transportation networks are referred to as remote areas. The remote-area clinics there contribute significantly to maintaining the good health of residents. However, there is a shortage of doctors and nurses. In Japan, where many deaths are expected, the role of nurses in remote-area clinics is expected to become more important than ever. **Purpose:** To clarify the nursing activities of nurses working in a remote-area clinic in Region A of N Prefecture and the challenges they face. **Methods:** Seven nurses working in a remote-area clinic underwent semi-constructive interviews and their responses were analyzed qualitatively and descriptively. **Results:** The following three categories of nursing activities in remote-area clinics were identified: “performing non-specialized tasks in parallel with nursing work,” “assessing the life and health of patients living in heavy snowfall areas,” and “exercising nursing expertise to help patients realize the life they desire. In addition, three categories of challenges perceived by nurses were extracted, such as “nurses experience a dilemma in fulfilling patients’ desired quality of life”. **Conclusions:** Nursing activities in remote-area clinics included dispensing and clerical work alongside nursing work. The nursing activities of the remote-area clinics were also performed to support each patient’s desired life until death. Our findings suggest that the shortage of physicians affects the nurses’ anxiety and dilemma.

KEYWORDS

Clinics, Heavy snowfall area, Japan, Nurses

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1. BACKGROUND

In Japan, “remote areas” are “mountainous regions, remote islands, and other areas where transportation, natural, economic, and social conditions are not favorable and it is difficult to secure medical care” (MHLW [Ministry of Health, Labour and Welfare], 2005). Primary care is the basis

for healthcare in remote areas, including islands (Okuno, 2004). In remote areas, the development of primary care and the construction of a comprehensive community care system are being promoted, and the role of nurses in remote-area clinics is expanding more than ever (Yokoi, 2021).

Region A in N Prefecture, Japan, is an area with heavy snowfall exceeding 2 meters, where the population is aging and depopulation is progressing ([Ministry of Internal Affairs and Communications](#), 2022; [Ministry of Land, Infrastructure, Transport and Tourism](#), 2012). In this region, remote medical clinics play an important role in helping residents remain healthy until the end of their lives. These clinics are publicly operated “remote-area clinics.” There are 1,126 rural clinics in Japan, employing 653 full-time physicians and 1,860 full-time nurses ([MHLW](#), 2023).

In recent years, as the number of medical personnel has been decreasing, policies have been initiated to reduce the burden on physicians. This reform of the way physicians work is aimed at reducing the long working hours of physicians and simultaneously promoting task-shifting/task-sharing among various specialists. In Japan, a training system for specific activities has been in place for the promotion of home medical care for the past decade. Specific action training is defined as “training to improve practical understanding, thinking, and judgment, as well as advanced and specialized knowledge and skills, which are necessary when nurses

perform specific actions according to procedures” ([MHLW](#), 2015).

Japanese Organization Nurse Practitioner Faculties have begun training Japanese nurse practitioners (JNPs). This certification is not an official qualification, and nurses are required to complete a graduate course in NP education ([Japan Council of Graduate Schools of NP Education](#), 2024). Currently, there are 872 certified nurses, most of whom work in hospitals ([Japanese Organization Nurse Practitioner Faculties](#), 2025). However, they are not nationally certified, and Japanese nurses cannot perform medical procedures without instructions from a doctor ([Cabinet Office](#), 1948b). Therefore, they are “different from nurse practitioners (NPs) in the United States and other countries, who are allowed certain diagnostic and prescriptive rights and work autonomously without a physician’s order” ([Mototani et al.](#), 2020; [American Association of Nurse Practitioners](#), 2018).

In Region A of Japan’s N Prefecture, in addition to the issues described in previous studies, the region may have region-specific difficulties associated with heavy snowfall. However, to the best of our knowledge, there have been no studies on nurses working in clinics in remote areas with heavy

snowfall. The remote-area clinic in a heavy snowfall area is an indispensable medical facility for the healthy living of local residents. This study aims to clarify the current status of nursing activities and the challenges faced by nurses in remote-area clinics. The study will provide suggestions for further improvement of the professionalism of nurses in remote healthcare facilities.

2. METHODS

This study was a qualitative descriptive study conducted using semi-structured interviews. Based on the Ministry of Health, Labour and Welfare's survey of the current status of remote-area medical care, all 10 remote-area clinics in Region A of N Prefecture were included in the study. Seven nurses working in these clinics were interviewed at the four facilities that agreed to participate in this study.

This study was conducted with the approval of the Research Ethics Committee of Nagaoka Sutoku University (No.018). Subjects who provided consent were informed both orally and in writing. Consent was obtained by assuring the subjects that their participation in the study was voluntary and that they could refuse to participate at any time. Once consent was given, it was

explained that it could be withdrawn without any disadvantages. Interviews were conducted individually in a private room to ensure privacy. Before the interview, the following information was explained orally to the research subjects: (1) they were not required to answer any questions they did not wish to answer, (2) the interview could be stopped or interrupted at any time, and (3) the researcher would record the interview using an IC recorder and take notes to ensure the accuracy of the data, and consent was obtained for both recording and note-taking.

Data were collected from February 2023 to May 2023. Each participant was interviewed once for an average of 60 minutes. Interviews were conducted in the participants' workplaces or conference rooms to ensure privacy. The survey included (1) attributes of the subjects (age of clinic nurses, type of nursing certification, current length of service at the clinic, type of work at the clinic, and the number of employees), and (2) questions regarding the participants' demographics and the current state of nursing activities in their remote-area clinics.

The interviews were recorded with the consent of the participants using an IC recorder. The recorded interviews were

transcribed and read carefully. After understanding the overall meaning of the interview, we coded the content and meaning of what the participants said so as not to change them. Next, multiple codes were compared and categorized in terms of differences and similarities. Then, a collection of codes was grouped into subcategories and categories to raise the level of abstraction.

To ensure reliability, we coded each participant's narrative and mailed it to them.

The participants were asked to add or revise the results of the analysis to address any discrepancies in the content of their statements. After confirmation, the participants were asked to reply to the researcher, and the interview data obtained were verified for any discrepancies in content. In addition, credibility was reinforced through repeated discussions with researchers familiar with qualitative research throughout the process.

3. RESULTS

Background of the Participants

Table 1. Attributes of the Participants

Participants	Age (Generation)	Years of service	Qualifications	Number of Nurses	Number Of Medical Staff (Position: Persons)	Number of Office Staffs
A	40	8	Nurse	6	Physician: 1	3
B	50	3	Nurse	6	Physician: 7 shifts	3
C	60	28	Nurse		Laboratory	
D	40	1	Nurse		technicians: 1	
E	30	3	Nurse	5	Physician: 6-8 shifts	3
F	60	3	Nurse		Pharmacist: 1	
G	50	9	Nurse	7	Physician: 1	3

The participants were seven nurses working at four facilities. Their ages ranged from 30 years to 60 years. They had worked at the clinics for 0.3–28 years. The number of nurses per clinic ranged from 4 to 7. Physicians, nurses, and clerical workers were employed at all the facilities. In addition,

laboratory technicians and pharmacists were employed at two of the facilities.

Nursing Activities and Perceived Challenges of Nurses in remote-area clinics

A total of 386 codes, 23 subcategories, and 6 categories were obtained in this study. The categories are denoted by [OO] and the

subcategories by “OO”. In this study, the following three categories were extracted: [Performing non-specialized tasks in parallel with nursing work], [Assessing the life and health of patients living in heavy snowfall areas], and [Demonstrating nursing expertise to help patients achieve the life they desire].

In addition, the following three categories of issues were identified by the nurses: [uneasiness in continuing to work at the clinic], [nurses experience a dilemma in fulfilling patients’ desired quality of life.], and [few opportunities for self-improvement].

1) Nursing activities of nurses in remote-area clinics

Table 2. Nurses’ Nursing Activities in Clinics in Different Areas of the World

Category	Sub Category
Perform non-specialized tasks alongside nursing duties	Assist in outpatient and online medical services Accompanying home visits Consultation duties Drug dispensing and drug administration duties Coordination of appointments for outpatient, home visit, bus, etc. Responding to emergencies at night and on days when the clinic is closed
Assess the life and health of patients living in areas with heavy snowfall	Observe patients during consultations and detect slight changes Understand the fragile transportation network and life in a snowy area Anticipate difficulties in the patient's life in the future
Demonstrate nursing expertise to help patients achieve the life they desire	Be close to patients, for better or worse Understand the relationship between patients and their families and residents Feel a sense of fulfillment Support the patient to continue living in this community Consider the place where the patient will spend the last days of his/her life Request cooperation from the family on behalf of the patient

(1) The category [Non-specialized work concurrently with nursing work] consisted of six subcategories including 60 codes “Assisting in outpatient and online medical care,” “Accompanying home visits,” “Consultation,” “Dispensing and drug management,” “Coordinating appointments for

outpatient, home visits, bus, etc.,” and “Emergency response during the nighttime and holidays.”

(2) The category [Assessing the life and health of patients living in areas with heavy snowfall] consists of three subcategories including 42 codes “Observing patients during

consultations and detecting slight changes,” “Understanding vulnerable transportation networks and life in areas with heavy snowfall,” and “Predicting difficulties in patients’ lives in the future.”

(3) The category [Exercise nursing expertise to realize the life the patient desires] consists of six subcategories

including 92 codes “Close to the patient for better or worse,” “Understand the relationship between the patient and family/residents,” “Feel satisfaction,” “Support the patient to continue living in this community,” “Consider where the patient will spend the final days 2,” “The following were identified as challenges perceived by the nurses.”

2) Issues perceived by nurses

Table 3. Challenges perceived by nurses

Category	Sub Category
There are concerns about continuing to work in the clinic	Concerns about home nursing Concerns about the burden of dispensing and misprescribing medications Concerns about the introduction of ICT Concerns about the future of the clinic
Nurses experience a dilemma in fulfilling patients' desired quality of life	Lack of knowledge of support information for patients/families Difficulties in end-of-life care at home and during emergencies due to the absence of a physician Difficulty in providing patient guidance
Few opportunities for self-improvement	Opportunities for learning that do not match the desire to learn Absence of role models in nursing management

(1) The category [I have concerns about continuing to work at the clinic] consisted of four subcategories including 70 codes “concerns about home nursing skills,” “burden and concerns about dispensing medicine,” “concerns about the introduction of ICT,” and “concerns about the clinic’s future.”

(2) The category [nurses experience a dilemma in fulfilling patients' desired quality of life] consisted of three subcategories, including 87 codes “Insufficient knowledge of support information for patients and families,” “Difficulties in at home end-of-life care and emergency care due to the absence of a physician,” and “Difficulty in providing patient guidance.”

(3) The category [Few opportunities for self-improvement] consisted of two subcategories including 35 codes “Opportunities for learning that do not match the desire to learn” and “Existence of role models in nursing management.”

4. DISCUSSION

Nursing activities of nurses at clinics in remote areas

In this study, they were found to be performing non-specialized tasks concurrently with their nursing duties. The duties of nurses in Japan are defined as “medical care” and “assistance in medical treatment” (Cabinet Office, 1948a). Sekiyama et al. (2015) found that the majority of clinics in remote areas are staffed by nurses who mainly assist in medical care. Medical care mainly refers to assistance with daily living, such as eating and defecation. Therefore, it can be inferred that outpatients at remote-area clinics are less likely to receive medical care such as changing diapers and bedclothes, since many of them are able to come to the clinic by themselves. Other factors, such as a shortage of medical personnel, contribute to the non-nursing work.

Haruyama (2009) reported that more than 80% of the outpatient clinics in remote areas in Japan do not have medical personnel other than doctors and nurses. In this study, there were also some rural clinics that fell into this category. It has been reported (Toda et al., 2012; Sekiyama et al., 2015) that many tasks are performed by a few people at remote-area clinics. In Japan, these clinics are usually run by a few people. The days of operation differ from facility to facility, and some remote-area clinics do not provide medical services on a daily basis. In addition to assisting physicians, the nurses at the remote-area clinics also dispense medicines under the direction of the physicians on the days when the physicians provide medical care. Other duties included providing bus reservations, clerical work, and liaison with caregivers and welfare.

In the A region of N Prefecture, public transportation is infrequent throughout the year, and it is inconvenient for patients to live without a car. In particular, during the winter months, the residents are forced to use their own transportation. This causes some patients to give up the use of nursing care services or to not be able to receive medical examinations during the winter months. The reason for this is that many elderly households have difficulty in

removing snow, and the ability of the community to provide mutual support for households in need of assistance is declining. Therefore, nurses at remote-area clinics coordinate outpatient visits and bus appointments, taking into consideration the public transportation services and their hours. The nurses in remote areas need to control the outpatient clinic so that patients can catch the bus on time after their visit. In this study, clinics have a small number of staff, and it is thought that they can only be run smoothly by having nurses perform tasks other than nursing work.

In terms of the expertise of the nurses, those at the remote-area clinic observed patients when they came to the clinic and detected slight changes. This may be because in areas with heavy snowfall, it is difficult for patients to move around during the winter, and they spend more time at home, which may negatively affect their mental health. Also, the nurses at the remote-area clinics were concerned about the impact on the mental health of the patients. The nurses at the remote-area clinic assessed patients not only based on their physical conditions but also on a wide range of parameters, such as their living conditions, family structure, community ties, and social resources. They also assessed

whether there were any challenges to living a healthy life in an environment with heavy snowfall and whether any difficulties were anticipated in the patients' future lives.

We believe that these abilities correspond to comprehensive health assessment skills and the utilization of medical health and welfare system utilization and development skills (Kusama and Ono, 2020), which are among the competencies required of NPs in NP education in Japan. It is conceivable that nurses in remote-area clinics who do not have NPs have already acquired this competency.

Sakai (2022) found that "usual life" for elderly patients with cancer living in snowy areas means "protecting the house," "living with nature," and "protecting the body" with the family doctor. In remote areas of Japan, where senescence and depopulation occur, the inconvenience caused by heavy snowfall is a part of daily life for residents. Thus, as nurses in remote-area clinics are the closest professionals to patients, they tend to always consider "living with nature," to realize their desired lives. On the other hand, when the environment does not allow this nursing activity to be achieved, it could be a factor in the dilemma of the remote-area clinic nurse.

Issues perceived by nurses

It has been reported that the shortage of physicians and nurses in remote clinics forces nurses to perform various tasks other than their specialized duties (Haruyama, 2011). Studies have been conducted on hospital and home care nurses in areas with heavy snowfall. However, there are no reports on the nursing activities of nurses in remote-area clinics with heavy snowfall. Previous studies conducted in Japan have reported that nursing activities in remote areas involve other duties in addition to nursing duties and that there are difficulties, worries, and anxieties in nursing activities (Ministry of Health, Labour and Welfare, 2023; Haruyama, 2009; Toda et al., 2012; Sekiyama et al., 2015; Tateishi & Yamauchi, 2021). This study revealed concerns about online medical care. In most online medical care, a nurse is present between the patient and the medical care provider. Because physicians do not examine patients face-to-face, nurses felt anxious about whether they could accurately communicate the patient's condition to physicians. This anxiety, which has not been reported before, can be said to have been caused by the fact that physicians did not meet patients face-to-face during consultations. We also believe that this is a result of the nurses feeling the need for their

own observation and assessment skills in online medical care. In addition, the nurses were anxious about the unskilled dispensing work at the remote-area clinic according to a report by Toda et al. (2012). However, the current situation has not been resolved even though it has been more than a decade since the report was published. These findings indicate that no pharmacist is assigned to remote-area clinics and that there is no change in the nature of their work.

Although the Japanese government aims for patients to be able to end their lives in their own familiar places, the reality is that this has not been achieved in remote areas. Nursing and medical care are sometimes required when patients are recuperating at home after completing treatment at a hospital. However, in remote areas with heavy snowfall, emergency transportation and visits by nursing and welfare services take time. Therefore, it is considered difficult to continue medical treatment at home, and the patient may go to a facility other than his or her home. In addition, even if a patient wish to die at home, there is no medical system in place to enable end-of-life care at home due to the absence of physicians at clinics in remote areas. In this study, nurses at a rural clinic experienced a dilemma in achieving patients' desired quality of life.

Regarding nurses at remote-area clinics, Toda et al. (2012) reported that because of the proximity of work and residence, it is easy to feel the anxieties of local residents from their perspective. It can be said that nurses in remote-area clinics were faced with the dilemma of not being able to respect the patient's desire to return home. We believe that educating nurses at remote-area clinics and establishing a medical system will help to resolve this issue.

More than half a century has already passed since Japan's nurse practitioner (NP) system was established. With various social changes, we believe that NPs like those in other countries are needed in Japan. However, it is not realistic for nurses in remote-area clinics to spend at least two years attending graduate school and obtaining NP certification. In contrast, specific action training is a one-year program, which we believe is more feasible for nurses in remote-area clinics. Murakami et al. (2021) found that doctors at clinics expect nurses who have completed specific training to be capable of providing medical and nursing care at home and in emergencies. We believe that independent nursing activities are indispensable in assisting medical treatment, especially in clinics in remote areas.

Currently, nurses in remote-area clinics must respond to inquiries and consultations in the absence of a physician, using their limited nursing skills. JNPs are able to perform specific medical procedures under the supervision of a physician. Therefore, nursing activities by JNPs are desirable in remote-area clinics where there are not many new patients and it is difficult to secure doctors. However, as mentioned earlier, it is difficult to quickly expand nursing practice by spreading the use of JNPs in Japan because the law needs to be revised.

Ideally, JNPs and nurses who have completed their training should be placed in remote-area clinics to address the shortage of doctors and regional disparities in medical care. However, first, it is necessary to promote the training of nurses in clinics in specific activities. Especially in remote areas with heavy snowfall, nursing activities should be expanded through the implementation of specific actions by nurses at remote clinics to assist in medical treatment.

McElroy (2022) clarifies that the stress factors associated with working in rural and remote nursing environments include access to education, isolation, and role perception. Given differences in Japan's nursing

education system and geography and climate, it is not appropriate to compare Japan's heavy snowfall areas with those in other countries. However, it is possible that similar stress factors exist in remote areas of Japan. This study also revealed that nurses in remote-area clinics are eager to learn but have few learning opportunities. Nakagawa et al. (2016) reported that nurses in remote areas have limited opportunities to acquire new medical and nursing knowledge even if they want to learn. In recent years, training programs have been conducted to train visiting nurses to support the remote diagnosis of death by physicians. However, the target audience is visiting nurses. This lack of learning opportunities has been reported in another study (Tsukamoto et al., 2010), and we believe that it is linked to anxiety in performing their duties. This issue has been pointed out before. However, we believe that it is an issue that has been identified because no improvements have been made to date. In particular, in remote areas with heavy snowfall, it is necessary to expand nursing care at remote-area clinics as an auxiliary to medical treatment. To achieve this, we believe that a system allows clinic nurses who are motivated to learn to easily land learning opportunities such as training in specific procedures. First of all,

we believe that a learning system is needed that allows nurses to continue learning anytime, anywhere, regardless of how many years have passed since graduation, by utilizing the educational institution they graduated from and ICT. In the future, to build this learning system, it will be necessary to clarify the learning needs of nurses at remote-area clinics around the country, including those in heavy snowfall areas. This approach will also help resolve the dilemma of nurses' insecurity in their work and their inability to meet the life goals of patients. Furthermore, it will address issues such as the shortage of physicians and regional disparities in medical care in remote areas.

5. CONCLUSION

Although there are only a few staff members at remote-area clinics, nurses demonstrate their expertise to help patients realize the lifestyle they desire while also performing tasks outside their specialty. The issues identified by nurses at remote-area clinics stem from a lack of training opportunities and can be resolved by expanding nursing practice through education. It is necessary to understand the learning needs of remote-area clinics to establish an educational system for nurses

to continue providing medical care in remote areas centered on educational institutions and to allow patients to continue living in their familiar communities.

A limitation of this study is that Japan's snowy regions are among the worst hit in the world, making it not possible to make general comparisons with remote areas in other countries.

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AUTHOR CONTRIBUTIONS

Substantial contributions to conception, data collection, analysis, writing, and manuscript revisions: Tomoko Hayashi and Noriko Hirasawa.

CONFLICT OF INTEREST

There are no potential conflicts of interest to declare.

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DATA AVAILABILITY

The data obtained in this study have not been disclosed to the public for privacy protection and ethical reasons.

PRESENTATION

A part of this study was presented at the 18th Annual Meeting of the Japanese Society of Rural Nursing (2023).

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