特別報告

平成24年度保健学科国際保健学海外研修プログラム『カナダ・ショートビジット2013』学生研修レポート

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Key words：国際保健学研修，カナダ・ショートビジット，マクマスター大学

要旨　平成24年度新潟大学保健学科国際保健学海外派遣研修プログラムにおいて，新潟大学保健学科学生９人（看護学専攻３年生３人，１年生３人；検査技術科学専攻３年生１人，１年生２人；引率教員２人）が，2013年３月11日㈪～19日㈫の日程で，カナダ・オンタリオ州にあるマクマスター大学，モホークカレッジ，ミチナー研究所を訪問し，カナダの保健医療や医療専門職の状況，そして，グローバルヘルスの実践者としてのあり方を学んだ。この研修によって，学び，感じたことをまとめた学生の研修レポートを紹介する。

平成24年度新潟大学保健学科国際保健学短期派遣研修プログラム(「グローバルヘルス人材育成スタータープログラム：カナダ・ショートビジット」）は，学生が海外の保健医療に関心を持ち，国際的医療活動に視野を広げるためのスターターとして位置づけ，新潟大学グローバル人材育成事業の支援を受けて実施された。

新潟大学保健学科学生９人(看護学専攻３年生３人，１年生３人；検査技術科学専攻３年生１人，１年生２人；引率教員２人）が，2013年３月11日㈪～19日㈫の日程で，カナダ・オンタリオ州にあるマクマスター大学，モホークカレッジ，ミチナー研究所を訪問し，①Problem-Based Learning（PBL）を取り入れたグローバルヘルス教育の体験，②先進的教育をサポートする実習施設の見学，③同大学学生との学術交流を通して，カナダの保健医療や医療専門職の状況を知り，グローバルヘルスの実践者としてのあり方を学んだ。

（研修日程）
2013年３月11日㈪　日本出国
　成田空港発　トロントピアソン空港着
　（AC002便；所用時間14時間59分）
　トロントからハミルトンへ移動
３月12日㈫～15日㈮
　始業式　オリエンテーション
　・自己紹介，研修内容の説明
　・マクマスター大学キャンパスツアー
　・講義(移民専門職教育，オンタリオの医療事情，PBL教育，看護研究，保健学研究の教育，など）
　・実習室・演習室見学（看護実習室，放射線実習室）の見学，
　・PBLシミュレーション演習
　・マクマスター大学図書館見学
　・ミチナー研究所（臨床検査及び放射線診断施設見学と臨床検査実習の見学）
３月16日㈯　ナイアガラ滝等の観光
３月17日㈰　ウエストヘリテージビレッジ（オンタリオ歴史文化遺産）見学
3月18日㈪　カナダ出国
　トロントピアソン空港発
　（AC001便；所用時間13時間10分，機内泊）
３月19日㈫　日本帰国
　成田空港着　　空港にて解散

参加した学生の中には初めて海外に出る学生も多く，最初は研修プログラムにとまどいも見られたが，学生の適応は早く，マクマスター大学をはじめ研修施設の優れた教育環境に触れ，教員や学生の学びに対す

１）新潟大学医学部保健学科看護学専攻
２）新潟大学医学部保健学科検査技術科学専攻

る真摯さを学び，さらに，研修施設の教職員のホスピタリティを感じとったに違いない。

以下に，この研修によって，学生が学び，感じたことをまとめた学生の研修レポートを紹介する。学生たちが得たものが，今後の学習や学生生活の中で，また，将来の医療活動の中に活かされることを信ずるに値する内容であり，保健学科グローバルヘルス短期派遣研修プログラムの進展が期待される。

（保健学科国際交流委員会）

Fig. 1. マクマスター大学での研修修了の記念写真

Student Reports on the Canada Short Visit 2013 －Global Health Science Oversea Training Program－

1．Holistic nursing

M10B164C　Manami ABE

Through my experiences in the short visit to Canada, I felt the strong need to nurse a patient holistically. In Canada, there are many qualified and highly specialized medical staffs. Nurses in Canada are divided into registered practical nurses（RPN）and registered nurses（RN）; both obtain national certification through examination. RPNs and RN are differentiated by education and clinical practice; therefore, it is important to know their individual roles. Similar differences exist in the field of medical laboratory technology, which includes medical laboratory technologists（MLTs）and medical laboratory assistants/technicians（MLA/T）. In addition, there are many types of medical staff, including cardiovascular technologists, occupational therapist assistants, physiotherapist assistants, pharmacy technicians, and many more. Therefore, medical care has many subdivisions and is highly specialized, allowing for the provision of advanced medical services. However, nurses have a responsibility to view the patient holistically, and I think that nurses do not forget this even after sub-specialization.

McMaster University offers a variety of programs that teach holistic concepts and nursing skills that utilize advanced patient simulation dummies together with problem-based learning（PBL）. Teachers can use remote controls to alter the characteristics of simulated patients. For example, they can increase blood pressure, cause arrhythmias, induce cough, and simulate difficulty in breathing. Students can therefore train to cope with unexpected emergencies in a safe environment, observing the whole body rather than looking at a limited part. They can also learn to integrate a variety of information in more realistic scenarios. On the basis of my study till date, I think it is difficult to integrate information on the whole body; therefore, training with patient simulators is very helpful to students. In addition, cameras and microphones are present in the training room, allowing students to get constructive feedback from their teacher by reviewing the events. I have never looked at my attitude toward patients, so this system would be a useful addition to our university.

PBL is also helpful for integrating holistic information. In this learning method, students are presented with a scenario and are expected to gain knowledge and learn concepts. The starting point for PBL should be a problem or query that a learner wishes to explore; this drives learning activities on a need to know basis. Tutors are present as facilitators only, and the core principal is that students master their own education. This is student-centered, self-directed learning（SDL）or “learning to learn,” and provides students with lifelong learning skills. Closely related to this, I felt that research-related education is enhanced at McMaster University. For example, I learned that it is important to consider how research affects patients and how we cannot formulate good research without sound practical knowledge. It is important to always consider the interaction between research and practice. Also, I learnt that it is not only important to formulate objects for research but also identify the main problem.

I was surprised that there are professional librarians at McMaster University. I think that experienced and knowledgeable librarians can be invaluable in supporting

students in high-quality research.

In order to evaluate the possibility of providing good and effective care to patients, we must evaluate research. A good nurse must be able to consider the interaction between research and practice and implement research advances in daily practice. Continued education is essential for all nurses and medical staff, and research can be helpful by inculcating the habit of studying. This will be good for public health. Although I am in third grade and will only start research projects next year, the skills I have learnt will be very helpful.

We also attended lectures on medical laboratory technology and radiology at Mohawk College and Michener Institute. At our university, nursing students rarely study medical laboratory technology and radiology. Understanding the contents and processes of medical inspection is very helpful for good nursing. These lectures introduced many new concepts to me.

Throughout the visit, I discovered many high-quality education programs at McMaster University, all of which will be good care for patient care. Furthermore, medical care is subdivided and highly specialized in Canada, making it very different from that in Japan. Although this will undoubtedly enhance the expertise in each field, it remains very important to look at patients holistically. If any lessons are learnt and changes are implemented, we should not forget that simple benefit of our system.

I would like to extend my thanks to Professor Baumann, as well as to Dina, Alicia, and Sarah. I enjoyed the visit very much.

2. Experiences at McMaster University and the Michener Institute

M12B913J　Asako KOMATA

Canada and Japan

1) Life expectancy and increased aging

Japan is a small island with a dense population, while Canada has a significant land mass and low population density. Both countries have an increasingly aging population with more elderly individuals per capita. Life expectancy in Canada is 83.3 years for women and 78.8 years for men. Japan has the highest life expectancy in the world, but it also has a declining birthrate. What are the implications for our future then?

2) Medical and welfare system

Canada is seen positively by many in the world; why is this? The answer for some is their Medicare system, which ensures the cost of providing health services to all. Japan also has a national health insurance system, but not all citizens are free to be examined by the doctor. Furthermore, Japan offers welfare insurance for individuals aged >65 years. Because of such systems, we have sizeable levels of national debt associated with social welfare and medicine.

3) Registered nurses (RN) and medical students

A lecture by Dr. Baumann at McMaster University revealed that Canada, and Ontario in particular, has many registered nurses (RN) and care workers, accounting for 1/3 of Canada. There are also many medical and nursing students in Hamilton. In Japan, although there are approximately 990.000 nurses working in hospital or welfare settings, there are too few to provide the services required of them. Japan needs many more nurses trained in high-quality nursing techniques.

4) Social changes and medical requirements

Both Canada and Japan have been changing, not least of all, socioeconomically. Canada has many immigrants, with the wave of immigration into Hamilton giving it the third highest proportion of internationally born citizens per capita of any city in Canada.

Furthermore, people have more knowledge about diseases and their cures, and they increasingly demand excellent treatment at hospitals and are able to choose their medical facilities for treatment. Canada is multicultural, and medical workers must also consider patient diversity and cultural needs. Medical education is therefore directed by these social changes to ensure a variety in learning methods. We must study more!

Examples of Educational Activities

1) Problem-Based Learning (PBL) at McMaster University: Critical Thinking, Evaluation, and Feedback

In Japan, a new curriculum was introduced for nursing students from last year. McMaster University has a marvelous educational program for all students. We thought that it would be very difficult to change or improve the nursing program that is being implemented since a long time; however, McMaster University has enforced the PBL program on its nursing students.

PBL programs support students to research information

and facilitate learning. This is difficult to achieve, but it works for them. As they share their experiences, their vision for education may spread. Critical thinking, training, and evaluation with appropriate feedback are effective and essential for advancement. PBL appears to encourage these traits.

2）Centre for Simulation-Based Learning (CSBL) at McMaster University: Training of higher skills and feedback

The center for simulation-based learning（CSBL）is used by both student nurses and experienced practitioners alike. This benefit is improved by the geographical placement of the CSBL and hospital next-door to each other! The CSBL utilized high technology models（dummies）with several preprogrammed symptoms and diseases, making students carefully consider their medical and nursing care requirements. Students also provide direct feedback themselves and get advice and tuition by a professor or tutor; there is a process of training and evaluation that is repeated until a skill is learned. In Japan, practical training starts early in our training, but we cannot inject real patients until we are in actual practice.

Both PBL and CSBL include assessment of individual learning and group's ability to work effectively toward common goals. Students are required to think in terms of evidence-based medicine（EBM）, which is recognized as essential for interdisciplinary communication.

3）Licenses for Respiratory Therapy at Michener Institute

At Michener Institute, we were introduced to new therapies that are not in place in Japan. For example, respiratory therapists train students how to manage labored breathing or other respiratory tract disorders. Respiratory therapists are specialists in the respiratory system, and they also help anesthetists. Respiratory therapy in Canada is still in its infancy, but there are over 2000 workers worldwide. The development of respiratory therapy is expected to save many lives in the near future!

Research

1）Relationship between Education and Practice

We are familiar with answering questions by identifying problems and systematically answering problems when necessary. We do this through critical thinking and accessing EBM. In order to develop those ways of thinking, we have to receive well-constructed education. Studying research in the undergraduate curriculum is therefore essential to appreciate research and recognize the importance of evidence-based practice.

2）Identifying and formulating a problem

This is perhaps the most difficult and confusing step of the research process: formulating the research problem. However, simply asking the question "why it is important to care for patients as a nurse?" can help. To do this properly, we need knowledge of specific theories, raw data, results, and valid conclusions in the context of a sound ethical basis. Furthermore, we have to disseminate the findings through publication and presentation.

3）Special librarian-supported research

At McMaster University, there is a research curriculum that helps level I to IV students learn the steps of proper research. At first, they are required to know how to use databases and develop effective search techniques. To help with this, they have access to a librarian with specialist skills who actually helps them. They are not trained nurses or doctors, but they are skilled researchers who talk to students, identify what they want to know, how to search for it, and even tell them where specific literature resources can be found. In Japan, the librarian only tells students where the book they are looking for is located. While our Professors teach us how to research, would they be able to support us like these special librarians?

4）How knowledge connects with practice: the importance of research in providing good care and improving nursing practice

The importance of research in guiding best practice is important to understand. Awareness of EBM advances may improve the level of care we offer to our patients. We also have to think definitely about individual roles in team nursing because these often overlap. An effective professional practice contributes to cost-saving by providing effective care at low cost. We have the responsibility of providing high-quality care to all patients, and this can be achieved by accessing research. As stated by Polit. D.F. and Beck. C.T, "What evidence exists to help me decide what is the most effective intervention for this problem?"

5）Continued studying is good for public health

As nurses, we must identify the relevance of research in lifelong professional practice and must continue to learn. How does knowledge translate and disseminate to actual

practice? The next great discovery could be hidden in everyday practice, so we have to keep researching!

Summary

In conclusion, the short trip to Canada will prove highly valuable during my future studies and during my nursing studies in general. I actually discovered that I could like nursing more! Before I went to Canada, I identified three purposes for the short trip. First, I wanted to know more about the nursing system in Canada. Professor Nancy taught us that there are two basic types of nurses, as in Japan, but they undertake different types of education. Furthermore, Canada has a doctor shortage and nurse practitioners are increasingly being trained to help the medical teams. Japan has also developed a nursing degree system; the lesson here is that we must continue studying as nurses for our entire life.

Second, I wanted to compare Canadian and Japanese nursing students as well as students of Health Sciences and medicine and special technologists at Michener Institute. I observed that they try to study hard. Their curriculum is highly subdivided and specialized and includes constructive details.

Finally, although my stay in Canada was short, it was evident that Canadians have a good standard of living, particularly in Hamilton, Ontario! Because of the universal social medical system, large universities such as the McMaster group provide medical facilities and training that directly benefit the local population. I am sure that McMaster University will continue to make continued developments with a worldwide impact. In the future, I aim to earn a Master's degree, and I would like to study at McMaster University. I would like to thank everyone involved for looking after us so well.

3. Learning on the short visit to Canada －From the viewpoint of nursing －

M12B915E　Hitomi SEKIKAWA

I would like to report my experience of nursing education during the short visit to Canada.

I found that the McMaster University's education system has three key points:

1. Self-motivated study
2. Critical thinking
3. Patient benefit

Unlike Japanese university students who receive tuition from professors, students at McMaster University receive a problem-based learning（PBL）education program. This system enables students to identify problems themselves and facilitates self-motivated study. Here I will try to report using the PBL map, which provides guidance on PBL to students（please refer to the map below）.

Explanation of the map

- Nursing students are at the core of the map.
- The left side of the map provides an example of the Japan learning experience
  - Here, students are usually provided with exercises.
  - Occasionally, Japanese students may engage in conferences for discussion; however, students only report their learning to each other in turn, which is not true discussion.
  - There are insufficient environments for self-motivated study in Japan.
- The right side of the map summarizes the system at McMaster University.
  - At McMaster, there are many excellent environments for students, including simulation systems, special librarians, online systems, and so on.
  - The most important tool is PBL, which is supported by a tutor. This helps students to identify their own problems and engage in self-motivated study.
  - Through continued study, students accumulate knowledge and skills; critical thinking is essential.

Critical thinking is defined as the ability to solve problems and think creatively or have decision-making capacity. It is a core outcome of the PBL system, and it helps students in discussion and research.

- These processes ultimately provide benefits for patients, which is the purpose of actual practice and research.
- It important to evaluate and provide feedback of learning.

McMaster University has many international students, so we can think about other countries' health and medical systems. Although we tend to be interested in only our own country's problems, different problems exist worldwide.

Understanding this in our short visit is important: we must have knowledge of health and medical systems and associated problems in other countries.

On the last day of the program, Sarah and Johan talked about their experiences. Sarah said that she decided to be a nurse when she experienced dirty environments in Africa (Cameroon). Johan also came from Africa (Kenya) and described the miserable situation in her country. This was the first time I had heard about HIV and other infectious diseases from a person from an affected country. I found those stories shocking, but necessary for health professionals to hear. Johan also said that political change is necessary in their home countries. Because Japan is a developed country, we do not have to consider radical change.

This program helps us to develop knowledge of other political and health situations around the world, including those in developing countries; we can use this to look back on the political and health situations of our own country, use our learning experiences in our own country, and spread our experiences elsewhere. Our future study and clinical work can be based on the positive experience of this program.

4. Comparing Medical Education between Japan and Canada

M12B141C　Aoi NIWANO

The short visit to Canada in 2013 has provided me with a lot of new knowledge and motivation. I took a diverse selection of lessons and observed the facilities. In this report, I will compare the medical systems in Japan and Canada; I will compare the system at McMaster University with the one I have experienced in Japan and provide my opinion.

Canada has many medical job roles and classifications, divided according to profession. For example, they have respiratory therapists that are not present in Japan. These roles help to decrease waiting time and solve the doctor shortage problem. However, it may cause narrowness of knowledge; it means that although they have advanced and specific technical knowledge, they may lack a wide base of general knowledge. I think that students should learn each job.

Second, I compared the educational content at McMaster University with that of Japan. At Niigata University, we learn through lectures and some practical lessons. We initially receive general education and go on to learn a few

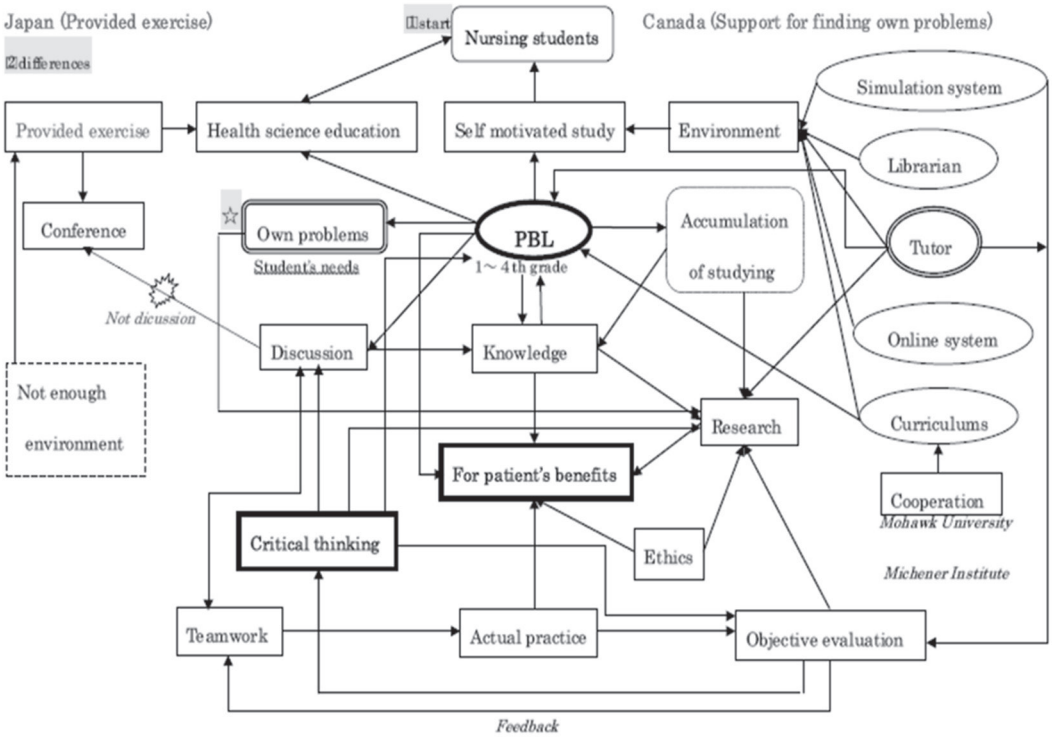

Fig. 2.　A PBL map which provides guidance on PBL to students.

specialist subjects in the first grade. However, it does have positives; for example, we acquire a wide knowledge base and a solid learning foundation.

On the other hand, students at McMaster University begin to learn specialist subjects from the first grade via problem-based learning（PBL）. When I first encountered PBL, it felt amazing because they could explore patient symptoms and diagnoses through the scenarios. PBL develops student initiative. In sessions, they raise their hand to write on a blackboard and express themselves, with a sense of responsibility to contribute.

The third and final point is that McMaster University has many facilities. Students have greater access to practical learning. For example, the simulation rooms, library, and laboratories. The simulation rooms benefit from a two-way mirror that separates student and tutor, allowing students to focus on how to deal with the situation by . If they come across the same case in the future, they have the skills to cope effectively with it.

Moreover, the university's library has many web resources to facilitate studies and provide information about their classes. Furthermore, the library employs specialists of librarian.

In conclusion, I think there are many differences between the Canadian and Japanese systems. However, I felt that Canadian students' attitudes toward learning were not that different. I want to be able to take the lessons I learned from McMaster University to benefit my future medical studies.

5. Differences in the curriculum, facilities, and study environment between McMaster and Niigata Universities

M12B155C　Sakura MIKI

During the short visit to Canada, there were five main contents and methods. I was most impressed when I encountered the education environments provided to the students of McMaster University. Although I am a first year student and do not know a lot about nursing, I learnt a lot during this visit. Here I will report the differences in the curriculum, facilities, and study environments between McMaster and Niigata Universities. I will focus on the benefits of the system at McMaster University.

Facilities and environments

1. System of the library

The Faculty of Health Sciences at McMaster University has a good librarian. Following are the details about the librarian:

- knows where to direct students for the appropriate books.
- can answer questions and advise nursing students about the contents of textbooks.
- doesn't have a nursing license but has studied since becoming a librarian.

2. E-support

McMaster students can learn independently through "e-support."

- The librarian teaches students how to use "e-support."
- Many subjects have web sites, and they help students to better understand the topics.

3. Nursing skills practice room

The practical room at McMaster University is smaller than that at Niigata University.

- Many instruments used by medical staff are available.
- Students can practice safely in this room, and a teacher can record their progress.
- Before practice, the students do not know about the model patient's health problem.
- Following practice, students view a video of the session with a tutor and reflect on what they did in practice.

Curriculum

The problem-based learning approach impressed me the most at McMaster University.

1. About PBL

- Problem scenarios that become progressively difficult are given by tutors.
- Before class, the tutor gives students a problem scenario.
- Students have to study independently before the PBL session.
- Each session takes at least two hours, wherein students discuss the problem. The tutor sometimes guides students to important issues.
- The tutor evaluates students as individuals and as a group; both in terms of preparation for sessions and discussion during class.

The tutor wants students to explore different ideas and views through PBL. Some students identify areas that they want to work on during PBL sessions.

2．Comparison with Niigata University

At Niigata University, nursing students study systematically through directed learning and do not use PBL.

Conclusion

The environment at McMaster University is well designed to facilitate independent student learning. If given the opportunity, I would like to participate in more independent learning.

6．Learning from the short visit to Canada

M12B172C　Megumi TAKAHASHI

I participated in this short visit because I wanted to broaden my horizons and learn many new things. For example, the difference in education patterns between McMaster and Niigata Universities was interesting. I'd like to write about three things: the problem-based learning (PBL) system, the study environment, and the change I experienced in the way I approach leaning.

1．PBL

First, I would like to detail the PBL program. In Japan, nursing students study using material provided by professors. Although occasional conferences allow for discussion, this tends to be a one-way process, with students only reporting their learning to each other; it is not discussion. Conversely, at McMaster University, education is student-centered with an emphasis on self-directed learning. McMaster University utilizes a PBL-based system to facilitate this process.

The PBL system is designed to help students identify learning needs as they attempt to understand a given scenario. They learn to access and apply knowledge and begin to work together to learn with other group members; a tutor is present to offer guidance only. This system plays an important role in improving learning, and, more importantly, it provides students with the skills necessary for life-long learning and self-development. Independent study and research encourages critical thinking.

The PBL system is good because it improves the care provided to patients by giving them the skills necessary for continued learning. Currently, there is an emphasis on developing medical practitioners capable of continued professional development（both knowledge and skill）who can communicate effectively with both patients and the wider multidisciplinary team. This is necessary in Japan too, and I think that Japanese universities should incorporate a system like PBL.

2．Environment for study

McMaster University has many facilities that promote independent study.

Library

There are five libraries that are open 24 h each day. Students come for study, group discussion, and question the librarian. I was surprised that the environment for study was well regulated. In particular, I found it useful to research and study independently, while also being able to discuss issues with a group.

Simulation system

In Japan, teachers assess student's strengths and weaknesses and learn through simulation. They can even watch themselves objectively and identify problems, following which they can exchange their thoughts on effective patient care.

Anatomy laboratory

Here you can learn about organs by bar codes, even without tutors.

3．The change in my attitude toward learning

Finally, after meeting undergraduate and graduate students, I have discovered a new ways of thinking and learning. If things do not interest you directly, you can look at things more holistically and generate interest. It is important to develop an enquiring mind, identify questions, and develop a wide information base. Also, I was impressed that students enjoyed their leaning and volunteer activities. By going to nursing training, you can consider about a place of work to commit in the future. I can change the attitude toward nursing practice.

We also learnt that medical practice in Kenya is very different from that in Japan and Canada; this was shocking and educational. I think that it was good to participate in this short visit. I learnt many things and identified many problems. The visit also provided an opportunity to look at Japan from a different perspective. I can expand my thinking after this experience. I look forward to taking up many more pressurizing challenges.

Fig. 3. At the entrance of Westfield Heritage Village in Ontario.

7. Learned through participation

M10D308F Mika KONISHI

There were two main purposes for my participation in the short visit to Canada. One was to know the current state of health science education at a Canadian university. Before the visit, I researched on the internet about the health status in the Canadian society, and I was both shocked and interested that the differences with Japan are so great. How can education mitigate these differences in nations providing advanced medical care?

I was surprised at the adequacy of education facilities at McMaster University. For example, in the library, professional librarians specialized in each field are employed. In addition, problem-based learning (PBL) is a feature of nursing education at McMaster University. These are features that are difficult to imitate. PBL encourages students to study spontaneously, view things critically, and increase the reliability of information. The goal of learning is to help students identify their learning needs rather than simply solving the problem; the former gives the skills for the latter and provides lifelong skills. Moreover, when we visited the anatomy laboratory, all specimens were provided with data so that the students could learn spontaneously as necessary. This is not available at Niigata University, and I was impressed by it. I could view organs from any direction by looking at the reference books, and I found this more effective than just reading from a book.

In Japan, an engineer functions as a medical laboratory technologist and performs multiple procedures such as laboratory testing, electrocardiogram (ECG), ultrasound testing, respiratory testing, and pathological examination. On the other hand, in Canada, they subdivide medical laboratory technologists, cardiovascular technologists, ultrasound technologists, and respiratory technologists. Since I major in medical laboratory technology I was very surprised and questioned the system. In terms of improvement of investigation technology, the fragmentation offered in Canada is beneficial, so I examined why roles were being grouped in Japan. However, I found that in Japan, qualifications are increasingly taken by specialists in ultrasonography, electrocardiology, and cytology. Although it has taken longer compared with Canada, Japan now has many more professional technologists. However, I also identified inefficiencies in the training of professional technologists in Japan. From another perspective, it is good that medical laboratory technologists can cultivate some knowledge of all areas and have a broad knowledge base in the Japanese system. From this, I have found that health and welfare in Canada is based on advanced education. There are certainly inherent benefits in terms of producing good health care workers at universities like McMaster.

I also wished to improve my English language skills. I have visited European and Asian countries that speak English and recognize that it is one of the common languages of the world. I have learnt a lot of English through books, but the Canada visit provided an opportunity to learn more practically at the university. I had expected that I could improve my English proficiency, but at first I was unable to keep up with the speed of native speakers. The language was hard to grasp and confusing at times, although I was able to gradually get used to it. In addition, I was nervous about interacting in English when visiting supermarkets and bars. This made me nervous but was rewarding when I was successful. I also had a chance to speak with students and had many awkward conversations. It was a lot of fun for me!

During the short visit, my department of medical laboratory technology also had its first contact with the department of nursing. This made me aware of the various differences between our groups. I had thought that it was "to find the roles for each" in medical laboratory science and that results were important. On the other hand, I learned that study results are not necessarily important in nursing－what is most important is the process. I will be in fourth

grade this year, and I will undertake research for the first time. This idea had a big impact on me, and I decided to study pathology. Through research, I can see things from a number of different perspectives.

In addition, I liked the city of Hamilton because I am from a countryside region in Japan (Toyama). I was able to spend a comfortable eight days and found it pleasing that everyone greeted me with a smile and friendship; this differs significantly from the Japanese experience. I now realize that there are many possibilities after graduation, and that there are many additions that can be made to medical practice in Japan. It is also true that I want to learn cytology and become an international cytotechnologist.

Last but not the least, I am very grateful to the teachers at McMaster University who helped me during the short visit to Canada. In particular, I would also like to thank Dr. Ariga for his support. I also thank the teachers of Niigata University and the students who accompanied me. Thank you.

8. My thoughts on the Short Visit to Canada

M12D314K　Rina SHIRAI

The McMaster University educational system

I found the lectures on the educational system for health science at McMaster University very impressive. In particular, problem-based learning (PBL) impressed me. In PBL, students discuss topics (a problem-based scenario) in small groups and decide on what they need to study to solve the problem before independently learning, and evaluating the results. Students should be able to identify their own knowledge gaps and study only what they need to know. They can discuss with other individuals and think critically and actively. PBL encourages active study, not rote learning, empowering students with both knowledge and active study skills. Furthermore, they can improve their ability to judge the relevance of information by taking advice from teachers.

In addition, I was interested in the nursing research conducted at McMaster University; even first year students participate in research. At Niigata University, students only do this from year four at the earliest. By studying research techniques, students can also evaluate other researcher's work and refer to the literature. I therefore believe that it is beneficial for first year students to engage in research.

The library system was also impressive. McMaster University's library employs librarians to support students, each with specialist subject knowledge. They can direct students to the most suitable books and material for their learning. I was surprised that the class and library merges in this way. McMaster University also has excellent practice equipment. For example, they have an advanced dummy that produces different cardiac sounds corresponding to various heart diseases. Furthermore, in the autopsy room, all samples are given unique numbers that allow students to study anatomy on computers. This looked very useful.

Overall, I recognized that McMaster University has a curriculum designed to improve a student's ability to learn effectively, while providing the system and equipment necessary to support this learning.

Visit to McMaster University, Mohawk College, and Michener Institute

We visited Mohawk College and Michener Institute and experienced many amazing devices. At McMaster University, there are practice rooms for nursing, the latest practice (robotic) dummies, and an outstanding autopsy environment. At the Mohawk College, students can practice ultrasound in small groups, enabling them to learn from a model of the unborn baby. Doing this, students can directly compare the ultrasound scan image with the actual physical presentation of the baby in the mother. This is a very helpful study aid. At the Michener Institute, there are many training devices for chemical laboratory technology, radiotherapy, and three-dimensional X-ray imaging. We found this exciting.

Because health care staff treat people, it is very important to study well and practice with technologies. I think a suitable environment for study is beneficial for this preparation. As a first year student, I have not started medical laboratory technology and cannot compare this with that at Niigata University.

Culture

During the short visit, I met many people. Compared with the Japanese, I felt that people in Canada spoke actively. In Japan, I rarely see foreign people, so I was surprised at the differences. It was unfortunate that I had no chance to eat a

traditional Canadian home-cooked meal, but I was able to see foreign food at least. I experienced the foreign culture, and my interest to learn was strong. Through this short visit, I was able to broaden my horizons. I want to remember what I studied, make an effort to acquire an international way of thinking, and learn to be an efficient medical laboratory technologist.

9. Medical system differences between Japan and Canada: is it possible to subspecialize medical laboratory science in Japan?

M12D321B Ryu NAKANO

During the visit to McMaster University, Mohawk College, and Michener Institute, I have seen the current state of health care in Canada. There are many differences between these and the systems in Japan and Niigata University. In terms of equipment, there are many more opportunities at McMaster University, including ultrasound diagnostic practice with a fetal model. There is also a device that allows students to listen to abnormal heart sounds corresponding to a variety of heart diseases.

Teachers can observe students' care of model patients from another room via a two-way mirror and provide feedback through a microphone. This increases proficiency in the skills necessary for a caregiver.

There was also a three-dimensional computed tomography device that enabled easy imaging of lesions in any part of the body; furthermore, a music player was placed in the CT room to ease a patient's anxiety and facilitate easy imaging. In the practice of dissection, a code is assigned to each sample, and more information is obtained if you input the code in the computer during independent study. Systems such as these have enhanced student learning. Other support is also provided by specialist librarians who are able to provide essential information and guidance to students. These librarians have a wealth of knowledge.

In terms of education, research is introduced from year one, and this helps students to determine the reliability of information and how to research it. Facilities and equipment are also fairly complete. For example, equipment to prepare a specimen is assigned to all students in inspection technology class; this is not followed for a single student at Niigata University.

Problem-based learning (PBL) is also used, and this is uncommon in Japan. Learners develop the ability to discover and solve their own problems. This ability is useful when you work in a hospital environment. This learning method would be worth following by both students and tutors in Japan.

The flow of PBL is as follows:

- Learning task → hypothesis → extraction of facts
- Self-learning
- Integration of knowledge, discussion, feedback, and problem solving
- Students cooperate with others and do not simply cram knowledge.
- Students develop critical thinking skills.
- This can be stressful for the student because preparation for PBL requires a lot of resources. However, the knowledge remains long-term because it is self-identified and self-learnt.

In addition, cardiovascular technologists and ultrasonologists have also been subdivided into their own investigation specialties. In terms of quality, this is superior because it is better to thoroughly specialize in one area.

So, can we apply these methods in Japan?

Take the example of Japan's doctor shortage. This is happening because few doctors can see patients in a comprehensive manner. Medical subspecialties have arisen with the progress of medicine, and doctors see only a narrow range of conditions but have a deeper knowledge of that specialty. For example, Gastroenterology, Internal Medicine, Cardiology, Respiratory Medicine, Allergy Medicine, Endocrinology, and Psychosomatic Medicine. Subdivided in this way, it is impossible to view a patient holistically. Medical institutions responsible for the training of primary care physicians have found the concept of providing holistic care to be a challenge. It would be necessary to solve these problems for this method to succeed in Japan.

In both Canadian and Japanese health care systems, medical expenses are covered by public funds. However, a noteworthy difference is the length of hospital stay. The average length of hospital stay in Japan is 19 days, while in Canada, it is approximately 6 days. To achieve this in Japan, more than double the manpower is necessary, and the role business is further needed. According to the graphs below,

medical safety and quality can be ensured with greater numbers. The number of nurses per 100 beds in Japan is much lower than that elsewhere (2003). Pharmacists are available for less than 4.9 and 2.5 individuals per 100 beds in America.

If we solve the problem of numbers, can Canada's method succeed in Japan? Unfortunately, I think we must improve not only quantity but also quality. The patient mortality rate is decreased by 5% and nursing graduates have increased by 10%. There is a statistically significant relationship between the ratio of nurses with a Bachelor's or Master's degree and patient mortality. The impact of nurse education on medical safety is stronger than that of experience in the United States, according to the AHRQ report. I think it is possible to create subspecialized areas of medical laboratory science in Japan, similar to that in Canada.

To do this, we must increase the number of health care workers and improve the quality of education.

Fig. 4.　Campus of McMaster University.

Student Reports on the Canada Short Visit 2013
－Global Health Science Oversea Training Program －

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Key words：Training program on global health, Short visit to Canada, McMaster University

Abstract Nine students of School of Health Sciences, Faculty of Medicine, Niigata University visited McMaster University, Mohawk College and Michener Institute to learn health sciences and culture in Canada from 11th to 19th of March 2013. In this short visit training program on global health sciences they were trained by taking lectures on current status of health care and medical systems in Canada, and taking a close look at educational scenes and workplaces of each professional field. They also observed the tri-field linkage and association of health services, medical services and welfare services. In social programs, the students well communicated with Canadian people in English and made effort to understand the culture of Canada. Student reports of what they have learned and felt in the short visit to Canada are shown.