

—Survey Report—

A Nationwide Survey on Education Programs for Drawing of Venous Blood in 4-Year Nursing Programs in Universities and 3-Year Nursing Schools in Japan

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A survey on the education programs for drawing of venous blood was conducted among professors and teachers who were in charge of basic nursing technology in 4-year nursing programs in universities and in 3-year nursing schools all over Japan. Valid replies were obtained from 177 (61.0%) of these nursing institutes.

The findings were as follows: (1) It was revealed that the most institutes adopted practice of drawing blood by the students on each other in the final stage of education program for drawing of venous blood. (2) Positions of the patient sitting on a chair and of the nurse standing while drawing of blood were adopted in the most institutes. (3) Injectors were mostly adopted as the instrument for drawing of blood. (4) Conventional box-type pillows were mostly used while drawing of blood. (5) It was suggested that the traditional way of education programs was adopted for drawing of venous blood in the most nursing institutes in Japan.

Keywords: drawing of venous blood, education program, nursing programs in university, nursing school, nationwide survey

Introduction

Education programs for drawing of venous blood (hereafter, drawing of blood) in nursing institutes are very important for proper and accurate drawing of blood from patients by nurses. However, how the education for drawing of blood is performed in the nursing institutes has not yet been reported. Relevant previous studies¹⁻⁵⁾ were on their own contents of education and no survey has been reported.

To determine how the education programs for drawing of blood were performed in nursing institutes in Japan, we conducted a nationwide survey. The subjects were professors and teachers who were in charge of basic nursing technology in 4-year nursing programs in universities (hereafter, nursing programs in universities) and 3-year nursing schools (hereafter, nursing school). "Nursing institutes" refers to both nursing programs in universities and nursing schools. Here, we report the results of the survey.

In Japan, the graduates from nursing programs in universities comprise one fourth population of new nurses and the graduates from nursing schools comprise a half of population. The remaining nurses have graduated from various courses of other kinds of schools. To include these schools in the survey was considered to be difficult. And the proportion in population of nurses graduated from nursing programs in universities is increasing as the number of nursing programs in universities is increasing

rapidly. Therefore, the survey was limited to nursing programs in universities and nursing schools.

Methods**1. Objects of the Survey**

(1) Nursing programs in universities: The survey was administered to 145 professors who were in charge of basic nursing technology in 145 nursing programs in universities which are all that had started in or before April 2006 in Japan.

(2) Nursing Schools: The survey was administered to 145 teachers who were in charge of basic nursing technology in 145 nursing schools. The surveyed schools were selected by stratified random sampling from among the nursing schools that had started in or before April 2007. The number of surveyed schools in a region was equal to the number of nursing programs in universities in each of the following administrative regions: Hokkaido, Tohoku, Kanto, Chubu, Kinki, Chugoku, Shikoku, and Kyushu.

2. Survey Method

Questionnaires were mailed to the participants with placement method, and the participants were requested to return the filled questionnaires unsigned.

3. Ethics for Research: The participants were given the following information along with the questionnaire.

(1) Filled questionnaires are to be returned unsigned; further, it is not necessary to mention the name of the respective nursing program and university or nursing school.

(2) The received answers will only be evaluated statistically.

and individual answers will not be identified.

- (3) The decision to answer is voluntary.
- (4) A reply received by mail would be taken as a sign of agreement to cooperate with the survey.
- (5) The questionnaires returned with answers will be used only for research purposes and will be scrapped after the completion of the research.

Results

1. Types of Institutes (Figure 1)

Subjects from 77 (53.1%) of the 145 nursing programs in universities answered the questionnaire. Subjects from 100 (69.0%) of the 145 nursing schools answered the questionnaire. All responses of both were valid.

The analysis included a total of 177 nursing institutes (77 nursing programs in universities and 100 nursing schools). Therefore, the analysis included 43.5% nursing programs in universities and 56.5% nursing schools.

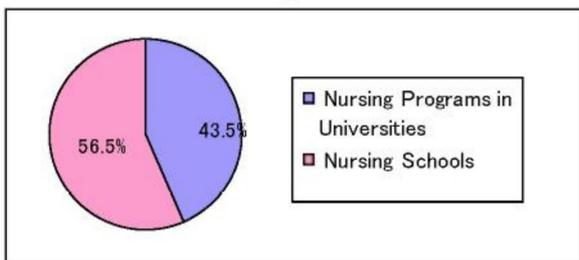


Figure 1. Types of Nursing Institutes Included in the Analysis

2. Academic Year in Which Teaching on Drawing of Blood was Carried Out (Figure 2)

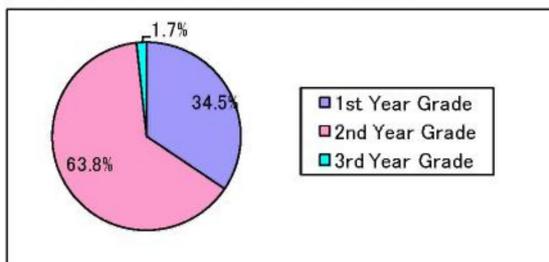


Figure 2. Academic Year in Which Teaching on Drawing of Blood is carried Out

The answers received to the question “In which year grade drawing of venous blood is taught?” were as follows: “first year” (61 [34.5%] respondents), “second year” (113 [63.8%] respondents), and “third year” (3 [1.7%] respondents). All respondents answered the question.

The free responses of participants from some institutes revealed that practice exercises involving drawing of blood using a simulator were adopted in the first or the second year, and then drawing of blood by the students on each other was

adopted in the third or the fourth year just before the start of practical training in hospitals.

3. The Final Stage of Acquiring the Skill Required for Drawing of Blood (Figure 3)

Figure 3 shows the answers received to the question “Which is the final stage of acquiring skill for drawing of blood?” Multiple answers could be selected for this question. The answer of largest number received to this question was “Practice of drawing blood by the students on each other” (111 [62.7%] respondents), followed by “Simulating by using drawing blood simulator” (73 [41.2%] respondents). Seven (4.0%) respondents gave other answers, and all respondents answered the question. The other answers were “the practice of tourniquet use by students on each other to learn the engorgement of the vein” and “to see and to listen only by videos or DVD of teaching materials”.

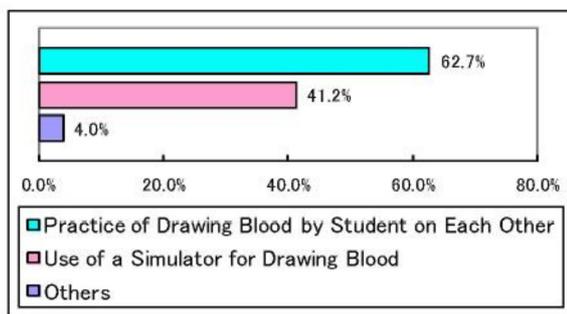


Figure 3. Final Stage of Acquiring the Skill Required for Drawing of Blood (Multiple Answers)

4. Position of the Patient (Figure 4)

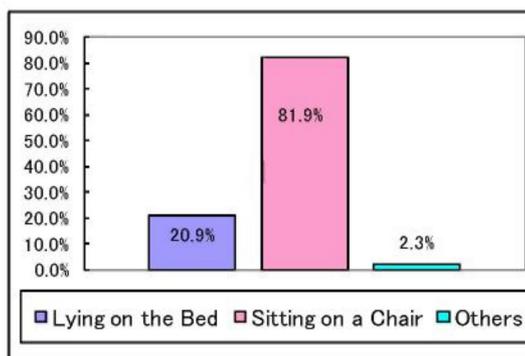


Figure 4. Position of the Patient (Multiple Answers)

Figure 4 shows the answers received to the question “Which is the position of the patient?” Multiple answers could be selected for this question. 145 respondents (81.9%) answered the question as “Sitting on the chair”, 37 (20.9%) respondents answered as “Lying on the bed”, and 4 (2.8%) respondents gave other answers. All respondents answered.

The other answers received to this question were “no practice of drawing blood with seeing and listening only by video or DVD of teaching materials”, etc.

5. Position of the Nurse (Figure 5)

Figure 5 shows the answers received to the question “Which is the position of nurse?” Multiple answers could be selected for this question. The answer of the largest number received to this question was “Standing position” (144 [81.4%] respondents), followed by “Sitting on chair” (46 [26.0%] respondents). Three (1.7%) respondents gave other answers. All respondents answered the question. The other answers were “no practice of drawing blood with seeing and listening only by video or DVD of teaching materials”, etc. similarly as question 4.

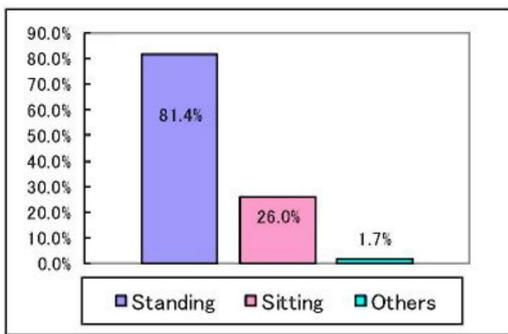


Figure 5. Position of the Nurse (Multiple Answers)

6. Instrument for Drawing of Blood (Figure 6)

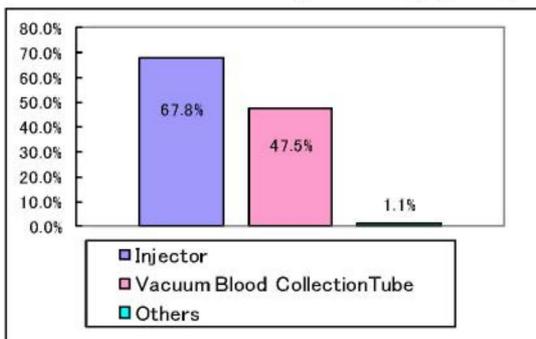


Figure 6. Instrument for Drawing of Blood (Multiple Answers)

Figure 6 shows the answers received to the question “Which instrument is used for drawing blood?” Multiple answers could be selected for this question. The answer of the largest number was “Injector” [120 (67.8%) respondents], followed by “Vacuum blood collection Tube” [84 (47.5%) respondents]. Two (1.1%) respondents gave other answers, and all respondents answered. The other answers were “no practice of drawing blood with seeing and listening only by video or DVD of teaching materials”, etc., similarly as to questions 4 and 5.

7. Pillows Adopted for Drawing of Blood (Figure 7)

Figure 7 shows the answers received to the question “Which pillows among below are adopted?” This was a multiple-choice question, and multiple answers were allowed. The answer of largest number received to this question was “Conventional box-type pillow for drawing blood” (161 [91.0%] respondents), followed by “Stand type” (7 [4%] respondents). Eighteen (10.2%) respondents gave other answers, and 1 respondent (0.6%) did not answer this question.

The other answers were “Using towel or bath towel with some idea” (reply given by many subjects), “Not using. only video or DVD”, etc.

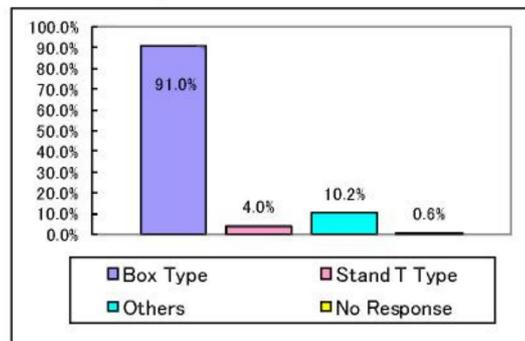


Figure 7. Pillows Adopted for Drawing of Blood (Multiple Answers)

Considerations

1. Methodology of Research

With regard to the response rate for mailed questionnaires, a value of about 20% is considered common in social research. In this study, to obtain more accurate survey results with a higher return rate and fewer invalid replies and blank answers, we promised all the participants that the report of the survey results would be sent back to them. Many participants made inquiries to confirm that the results would certainly be sent back. As a result, we considered the survey data extremely accurate. The survey was completed with a response rate as high as 61%. There were no invalid replies and very few blank answers. The report⁶⁾ on the survey results was sent to all 290 institutes, including those who did not reply.

2. Results

The findings by nationwide survey on the actual education programs for drawing of blood in the nursing institutes in Japan are as follows.

(1) The answer of largest number to the question on the final stage of education programs on drawing was “Practical drawing of blood by students on each other”, which means

that most of students experience practice of drawing blood before graduation.

(2) On the positions of the nurse and the patient while drawing of blood, "Standing" and "Sitting on Chair", respectively were the largest number of answers. In the practical training, the case that standing drawerer draws the blood of a person sitting on a chair, is in the most institutes.

(3) On the instrument used for drawing of blood, the answer of largest number was "Injector" followed by "Vaccum Blood Collection Tube". It is considered that many institutes execute trainings with both injector and vaccum blood collecting tube. On the type of pillow used while drawing of blood, the conventional box-type pillow was mostly used. This suggested that traditional way of education tend to be adopted.

3. Importance of This Research and Suggestions for the Future

Only 1 previous paper⁷⁾ has described results of a survey on the education programs for both injection of medicine by using a shlinge and drawing of blood. However, the emphasis of the survey was on the injection and with regard to drawing of blood, only the achievable level of skill was surveyed. While the objective of the survey on drawing of blood was similar to that of ours, any other items were not surveyed. Moreover, target of the survey was nursing programs in universities with only 51 respondents out of 120 surveyed and nursing schools were not targetted.

As stated in the Introduction, nurses in population of one-fourth had graduated from nursing programs in universities and a half had from nursing schools. The aforementioned papers¹⁻⁵⁾ were on their own programs on drawing of blood in nursing programs in universities and no study on drawing of blood has been reported on that in nursing school.

The findings of our survey are of immense importance since this is the first survey on the education programs on drawing of blood in the nursing institutes. Valid replies were obtained from 177 nursing institutes across Japan.

Contents of Education of importance for safe and comfortabale drawing of blood in nursing programs in universities and nursing schools will be the subject of our next report.

Conclusion

The survey was conducted on education programs on drawing of venous blood, with targetting total of 290 4-year nursing programs in universities and in 3-year nursing schools. This was the first survey of its kind in Japan. The

findings as follows;

(1) At the final stage of training programs for drawing of venous blood, most institutes conducted practical exercises of drawing of blood by students on each other. (2) The most cases of positions of the nurse and patient while drawing of blood were standing and sitting on a chair, respectively. (3) Injectors were used in the most cases as instruments for drawing of blood, and conventional box-type pillow was mostly used in the process.

Acknowledgement

We would like to express our gratitude to all the professors and teachers in charge of basic nursing technology who cooperated with our nationwide survey.

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