

ORIGINAL RESEARCH

Perspectives on effective educational practices regarding venepuncture

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ABSTRACT

The purpose of this study was to determine the factors that may lead to effective education. A self-administered questionnaire was distributed in a hospital, with 156 nurses of the total nursing staff in the hospital completing the questionnaire (response rate, 74.3%). This study determined the background of the nurses according to their response as either in agreement or against the concept of learning venepuncture on human subjects at nursing schools. Most factors in the agreement group were evaluated according to experience or lack of experience. This showed venepunctures “Performed while still a student” (OR = 5.56, 95% CI: 2.06-15.01) were a contributing factor in the nurses’ responses. The proportion of participants who performed their first venepuncture as a nursing student was 86.0% in the agreement group and 51.9% in the against group. The percentage of nurses who never had practical training on a simulated model was 15.4%. It may be expected that one person’s experience may be passed onto the next generation in the same way. The first venepuncture will shift from a nursing student to a novice nurse, and because this may be a late decision the safety of the peer nurse needs to be considered. It is therefore necessary to expand prior practise exercises such as with a simulator. The venepuncture learning program starts after the nursing license is obtained. The program will be called into question as to whether or not it was carried out safely in the patients.

Key Words: Clinical skills, Nursing education, Patient safety, Personal experience, Venepuncture

1. INTRODUCTION

Some nurses in Japan perform venepuncture and intravenous injections as part of their regular duties, while other nurses have never had to perform these procedures because of the policies of educational institution or facilities. Venepuncture skills can only be acquired through practical experience, including failures. Some nurses acquire experience during their nursing school days, while others only practice venepuncture once they have become a licensed nurse. The backgrounds of these nurses are therefore different.

Some nurses recommend gaining experience of venepuncture on humans in nursing school. For future nursing education, it is necessary to expand education giving priority to safety issues. The purpose of this study was to determine the factors

necessary to achieve effective education.

The teaching method of “see one, do one, and teach one”, which has been used to teach nursing skills and promote acquisition of clinical expertise, is no longer accepted as the best teaching method. A nurse’s confidence in their ability is essential for good patient care. When nursing students have confidence in their own abilities, they are able to shift their focus from their own needs to the needs of their patients. This is essential for becoming a safe and competent practitioner.^[1] The clinical skills of the nursing students is an important issue in nursing education. In Japan, hospital admissions are shorter and increased patient demands. As a consequence of continuing pressure on clinical practice in many health care disciplines, alternative methods and means

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of teaching clinical education to health care professionals have been explored. With the increasing acuity of patients, considerable effort goes into preparing students to be as ready as possible for their clinical practice rotations.^[2] Faculties in the health sector in busy clinical settings need efficient teaching skills to maximise their effectiveness during the brief period of time spent with trainees. Similarly, academic medical centers require efficient faculty development programs to maximise the time available for professional development.^[3]

Evidence-based practice requires that nurses rapidly access and appraise evidence before integrating it into clinical practice. Role modeling and integrating the skills necessary to develop evidence-based practices into clinical and nonclinical courses is an important aspect of developing positive attitudes towards evidence-based practice and is an essential first step when using evidence to make practice decisions.^[4] This understanding allows educators to modify their teaching styles to suit the learning styles of the students.^[5] The shift in nurse education from the traditional hospital to a university environment has created a new dynamic in which tension exists between the expectation of critical independence within the university setting and the expectation of compliance within a clinical setting.^[6] As educators and clinicians, it is vital that we provide students with real exercises that have personal meaning so they can adapt to their future professional careers.^[7] It is also necessary to “practice what we preach” by integrating quality and safety into nursing education. This process should start with action and a test of change.^[8]

Venepuncture is a skill where safety is required, especially in inexperienced nurses. Historically, venepuncture and cannulation have been performed predominately by nurses and doctors. However, in recent years these roles were extended to healthcare assistants in Hampshire, England. Knowledge and skills are required because both procedures involve an invasive process. Prior to attending the theoretical part of the course, a mentor was chosen to work alongside the pupil and assess their ability to implement theory into practice.^[9] A study by the Department of Health in Northern Ireland provided in-service education to registered nurses and midwives that consisted of three courses that included intravenous drug administration, venepuncture, and intravenous cannulation.^[10] Venepuncture appears to be a relatively simple task as it is performed by many health-care workers. However, complications can occur if unskilled individuals are allowed to collect blood samples. For example, undergraduate nursing students in New Zealand working in primary care clinical setting are often asked if they will collect blood from clients. There is some debate as to whether this should be permitted.^[11]

In 2002, the Health Policy Bureau of the Ministry of Health, Labour and Welfare indicated that intravenous injections were an aspect of nursing, as defined by the Act on Public Health Nurses, Midwives and Nurses in Japan. In actual clinical practice, an increasing proportion of nurses are becoming responsible for venepuncture in addition to intravenous injections, with the role of nurses in administering intravenous injections and venepuncture having been demonstrated clearly. It may be said that venepuncture is a skill that is learned by “trial and error”. Experienced nurses consider venepuncture is learned from experience, and that it is important to minimize the possibility of failure for a patient. Although the learning environment may differ, experienced nurses consider it is essential that nursing education leads to a real skill being obtained.

2. METHODS

2.1 Research design

A self-administered questionnaire was distributed in a hospital located in a metropolitan area of Tokyo. We chose this hospital as it was staffed by experienced nurses from several different nursing schools. We considered the explanation from the Nursing Administrator. It was agreed the investigation would involve collection of questionnaires.

We divided the participants into two groups according to their responses to the questionnaire, as either agreement or against learning venepuncture technique on humans during their time at nursing school. We used agreement and disagreement as dependent variables. Differences in sex, mean age, and average number of years in the nursing profession were examined in the two groups. The data were collected in February 2012. The questionnaire was submitted to the ward managers and returned in sealed envelopes.

2.2 List of subjects in the questionnaire

Background: The questionnaire collected background information on sex, age, and years of nursing experience. Two groups were defined. The total number of actual venepunctures using a syringe was determined and categorised as < 10, < 100, < 500, or > 500.

First puncture experience: The participant’s first venepuncture on a patient was recorded to determine whether they were students or registered nurses at this time. The participants were asked to provide information on the number of times they had held a syringe and needle before they carried out their first venepuncture on either a dummy or an actual person.

If the first venepuncture was performed while the participants were still at nursing school, they were asked if it was

performed on a peer, a venepuncture instructor, or another person. If venepuncture was performed after they had become a registered nurse, they were asked whether it was performed on a new nurse, a senior nurse, a doctor, a patient, or another person. Participants who responded “others” were asked to provide additional details.

Learning process: With regard to the resources used to learn venepuncture skills, the participants were asked if they acquired the skills through actual clinical practice, or on a simulator. The responses were based on a four-point scale for each item as: “often”, “sometimes”, “rarely”, or “never”.

Resources: Having an instructor, and differences between instructors and resources were evaluated on a four-point scale as “often”, “sometimes”, “rarely”, or “never”.

Difficulty: With regard to venepuncture using a syringe, the process of puncture, pushing the needle after the syringe has entered the vein, switching hands from the dominant hand to the non-dominant hand whilst holding the syringe, and drawing the syringe plunger were evaluated on a four-point scale using the options: “not difficult”, “not very difficult”, “somewhat difficult”, and “difficult”.

Sensation: The subjective sensation of the needle-tip entering the vein and the needle moving in the vein were scored using a four-point scale: “I am very sure”, “I can tell”, “I cannot tell” and “I am not sure at all”.

2.3 Statistical analysis

The data were analysed using SPSS 19.0 (IBM, Japanese edition, Tokyo, Japan). Descriptive statistics were used to describe the data. Continuous data were expressed as the mean and standard deviation (SD).

Differences between the agreement and against groups were analysed using Pearson’s chi-square test or Fisher’s exact test. Unpaired *t*-tests were used to test differences between the two groups using the Student’s *t*-test when homoscedasticity was demonstrated and the Welch *t*-test when it was not. The Mann–Whitney U-test was used to analyze the results of the four-point scales. Probability values < .05 were considered significant. Multivariate logistic regression analysis was performed using the agreement and against groups as dependent variables. Variables were sequentially introduced into the model as groups of variables. The 95% confidence interval (CI) was calculated for each odds ratio (OR).

2.4 Ethics

The questionnaire survey was conducted with the approval of the ethics committee from all of the participating facilities. Ethical approval was obtained from the ethics committee of the Graduate School of Health Management, Keio University on June 23, 2010. The participants were provided with an explanation of the study objectives and advised that they would not be penalised if they withdrew from the study.

3. RESULTS

3.1 Baseline characteristics

A comparison of the baseline characteristics of the participants and data regarding their venepuncture experiences is shown in Table 1. Of all the nurses in the hospital, 156 completed the questionnaire, representing a response rate of 74.3%. The ratio of female participants was 94.9%, and the mean age was 33.3 yr (SD 8.3 yr). The mean duration of nursing experience was 10.3 yr (SD 7.5 yr). There was no significant difference in the total number of venepunctures performed using a syringe between the two groups.

Table 1. Baseline characteristics and the current venepuncture situation

	Agreement	Against	Total	<i>p</i> -value
Sex	n = 86	n = 52	n = 138	
Female	81 (94.2%)	50 (96.2%)	131 (94.9%)	.710 *1
Years				
Age	33.2 (8.2)	33.3 (8.5)	33.3 (8.3)	.959 *2
Experience as a nurse	9.9 (6.8)	10.9 (8.6)	10.3 (7.5)	.464 *2
Current experience				
The total number of actual venepunctures performed using a syringe	n = 80	n = 44	n = 124	
< 10	19 (23.8%)	11 (25.0%)	30 (24.2%)	
< 100	27 (33.8%)	15 (34.1%)	42 (33.9%)	.939 *3
< 500	23 (28.8%)	11 (25.0%)	34 (27.4%)	
> 500	11 (13.8%)	7 (15.9%)	18 (14.5%)	

Note. *1: Fisher’s exact tests, number (%); *2: Student’s *t*-test, mean (standard deviation); *3: Welch *t*-test, mean (standard deviation)

3.2 First venepuncture experience

The related response regarding learning the venepuncture technique on humans was agreement 86 (62.3%) and disagreement 52 (37.7%).

The proportion of participants who performed their first venepuncture as a nursing student was 86.0% in the agreement group and 51.9% in the against group (see Table 3). Venepuncture was performed most commonly on peers (61.6%), with only 2.9% being performed on instructors. The classification “Others” included dummies (5.1%), fruit, myself, and qualified nurses. Nurses who performed their first

venepuncture after graduating most commonly used other graduate nurses (62.8%), followed by senior nurses (46.4%) and patients (15.9%). The duration between qualifying as a nurse and the first puncture ranged from 0 to 40 mth (mean, 9.3 mth; SD, 7.1).

There was no significant difference between the number of participants who performed venepuncture at nursing school in the two groups. The participants had held a needle and syringe 15.9 times (SD, 95.0) before puncturing a dummy, and 18.4 times (SD, 93.9) before puncturing an actual patient (see Table 2).

Table 2. First puncture experience

	Agreement	Against	Total	p-value
Who made their first puncture				
As students	n = 86	n = 52		
Not performed	12 (14.0%)	25 (48.1%)	101 (73.2%)	.685 ^{*1}
Performed on	74 (86.0%)	27 (51.9%)		
Peers	67 (77.9%)	18 (34.6%)	85 (61.6%)	
Venepuncture instructors	2 (2.3%)	2 (3.8%)	4 (2.9%)	
Fruits or simulators	0 (0.0%)	1 (1.9%)	1 (0.7%)	
Self	1 (1.2%)	0 (0.0%)	1 (0.7%)	
Qualified nurses	2 (2.3%)	0 (0.0%)	2 (1.4%)	
Simulator	1 (1.2%)	6 (11.5%)	7 (5.1%)	
-Peers and instructors	1 (1.2%)	0 (0.0%)	1 (0.7%)	
As after graduation				
Not performed	0	1		
Performed on				
New nurses	54 (62.8%)	34 (65.4%)	88 (63.8%)	-
Patients	15 (17.4%)	7 (13.5%)	22 (15.9%)	
Senior nurses	24 (27.9%)	40 (76.9%)	64 (46.4%)	
Doctors	1 (1.2%)	1 (1.9%)	2 (1.4%)	
Can't remember	0 (0.0%)	1 (1.9%)	1 (0.7%)	
Simulator	1 (1.2%)	0 (0.0%)	1 (0.7%)	
The duration from qualifying as a nurse until the first puncture				
Months	8.94(6.7)	10.0 (7.9)	9.3 (7.1)	.386 ^{*2}
Minimum			40.0	
Minimum			0	
The number of times from first holding a syringe and needle				
Until puncturing a dummy	n = 74	n = 38	n = 112	
	20.9 (116.6)	6.1 (11.1)	15.9 (95.0)	.440 ^{*2}
Until puncturing an actual parson	n = 77	n = 33	n = 110	
	22.5 (114.0)	10.1 (11.8)	18.4 (93.9)	.512 ^{*3}

Note. *1: Pearson's chi-square test, number (%); *2: Student's *t*-test, mean (standard deviation); *3: Welch *t*-test, mean (standard deviation)

3.3 Learning process and resources used to learn venepuncture skills

There was no significant difference in actual clinical practice between the two groups with 62.9% of all the participants answering “often” and 37.0% as “sometimes”. In contrast,

15.4% of the participants had “never” experienced practical training on a simulated model.

The prevalence of “often” not having had an instructor was 2.2% (see Table 3).

Table 3. Learning process and resources used to learn venepuncture skills

	Agreement	Against	Total	p-value
Learning process				
Through actual clinical practice				
	n = 86	n = 52	n = 138	
Often	55 (64.0%)	31 (59.6%)	86 (62.3%)	.651*
Sometimes	30 (34.9%)	21 (40.4%)	51 (37.0%)	
Rarely	1 (1.2%)	0 (0.0%)	1 (0.7%)	
Never	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Through practical training on a simulator				
	n = 85	n = 51	n = 136	
Often	24 (28.2%)	9 (17.6%)	33 (24.3%)	.575*
Sometimes	36 (42.4%)	29 (56.9%)	65 (47.8%)	
Rarely	12 (14.1%)	5 (9.8%)	17 (12.5%)	
Never	13 (15.3%)	8 (15.7%)	21 (15.4%)	
Resources				
Not having an instructor				
	n = 84	n = 52	n = 136	
Often	2 (2.4%)	1 (1.9%)	3 (2.2%)	.313*
Sometimes	13 (15.5%)	9 (17.3%)	22 (16.2%)	
Rarely	46 (54.8%)	33 (63.5%)	79 (58.1%)	
Never	23 (27.4%)	9 (17.3%)	32 (23.5%)	
Differences between instructors				
Often	3 (3.6%)	2 (3.8%)	5 (3.7%)	.883*
Sometimes	33 (39.3%)	18 (34.6%)	51 (37.5%)	
Rarely	36 (42.9%)	29 (55.8%)	65 (47.8%)	
Never	12 (14.3%)	3 (5.8%)	15 (11.0%)	

*Welch *t*-test, mean (standard deviation)

3.4 Difficulty and sensation of the skill

Our data show there were statistically significant differences between the two groups. Compared with the agreement group, the against group had a higher proportion of participants who reported difficulties whilst puncturing ($p = .048$), or inserting the needle ($p = .028$). The against group also responded that venepunctures were generally more difficult.

Of the participants, 91.9% in the agreement group and 86.5% in the against group were either “very sure” or “could tell” when the needle-tip had entered a vein. However, this difference in response between the two groups was not statistically significant. In addition, 73.3% of the participants in the agreement group and 88.6% in the against group were either “very sure” or “could tell” when the needle-tip had entered the vessel ($p = .040$) (see Table 4).

3.5 Coefficients in the logistic regression model for the agreement group

Logistic regression analysis showed the independent risk factors in the agreement group included “Performed while still a

student” (OR= 5.56, 95% CI: 2.06-15.01) and “Sensation of the needle-tip moving along the vein” (OR = 5.27, 95% CI: 1.33-20.95). The “Sensation of the needle-tip entering the vein” (OR = 0.22, 95% CI: 0.05-0.96) was also a contributing factor (see Table 5).

4. DISCUSSION

4.1 Opinions expressed by the study participants

Only a small number of subjects were evaluated in this study, and the results were limited to a particular geographical region. Despite these limitations, it was apparent that educators and clinicians have an important role in introducing changes in nursing education.

No significant differences were observed for current age, experience, or current experience using a syringe between the two study groups. Logistic regression analysis of the data of participants who agreed with learning venepuncture in nursing schools had an odds ratio of 5.56. Personal experience is believed to have a significant impact on whether

or not nurses agree or disagree with the concept of learning venepuncture techniques at nursing school. It may become difficult for nurses to learn without a change in attitude.

Because skilled nursing practice requires thinking skills for clinical reasoning and decision making, it is logical that development of these skills is an essential aspect of nursing

education.^[12] These new responsibilities are challenging the education of both pre- and post-licensed nurses in order to provide them with skills needed in health care settings that have been redesigned around quality and safety. To prepare the next generation of nurses, educators are being asked to examine current content and pedagogies.^[13]

Table 4. Difficulty and sensation

	Agreement	Against	Total	p-value
Difficulty: Venepuncture technique using a syringe				
Puncture	n = 81	n = 49	n = 130	
Not difficult	4 (4.9%)	3 (6.1%)	7 (5.1%)	
Not very difficult	27 (33.3%)	5 (10.2%)	32 (23.5%)	.048*
Somewhat difficult	32 (39.5%)	27 (55.1%)	59 (43.4%)	
Difficult	18 (22.2%)	14 (28.6%)	32 (23.5%)	
<hr/>				
The needle into the vein	n = 84	n = 49	n = 133	
Not difficult	4 (4.8%)	3 (6.1%)	7 (5.2%)	
Not very difficult	32 (38.1%)	7 (14.3%)	39 (29.1%)	.028*
Somewhat difficult	35 (41.7%)	28 (57.1%)	63 (47.0%)	
Difficult	13 (15.5%)	11 (22.4%)	24 (17.9%)	
<hr/>				
Switching hands	n = 82	n = 46	n = 128	
Not difficult	3 (3.7%)	2 (4.3%)	5 (3.7%)	
Not very difficult	26 (31.7%)	13 (28.3%)	39 (28.9%)	.913*
Somewhat difficult	36 (43.9%)	22 (47.8%)	58 (43.0%)	
Difficult	17 (20.7%)	9 (19.6%)	26 (19.3%)	
<hr/>				
Drawing the syringe plunger	n = 84	n = 49	n = 133	
Not difficult	4 (4.8%)	4 (8.2%)	8 (5.9%)	
Not very difficult	34 (40.5%)	16 (32.7%)	50 (37.0%)	.915*
Somewhat difficult	36 (42.9%)	26 (53.1%)	62 (45.9%)	
Difficult	10 (11.9%)	3 (6.1%)	13 (9.6%)	
<hr/>				
Sensation				
The needle tip entering the vein				
	n = 80	n = 44	n = 124	
I am very sure	19 (22.1%)	15 (28.8%)	34 (24.6%)	
I can tell	60 (69.8%)	30 (57.7%)	90 (65.2%)	.824*
I cannot tell	7 (8.1%)	6 (11.5%)	13 (9.4%)	
I am not sure at all	0 (0.0%)	1 (1.9%)	1 (0.7%)	
<hr/>				
The needle tip entering along the vein				
	n = 86	n = 52	n = 138	
I am very sure	12 (14.0%)	12 (23.1%)	24 (17.4%)	
I can tell	51 (59.3%)	33 (63.5%)	84 (60.9%)	.040*
I cannot tell	22 (25.6%)	7 (13.5%)	29 (21.0%)	
I am not sure at all	1 (1.2%)	0 (0.0%)	1 (0.7%)	

* Mann-Whitney U-test, number (%)

4.2 Safety of patients and peers

Clinical laboratory skills have been developed to ensure that student nurses are receiving adequate education for these skills, and also to address the potential reduction in expo-

sure of nurses to clinical skills due to changes in nursing education worldwide.^[14] Every year, new nurses and students in training enter the clinical field, and it is likely there will always be a generation gap. The factors that influence

individual differences in professional achievement are only partially understood. Nobody becomes an outstanding professional without experience, but extensive experience does not invariably lead people to become experts.^[15]

Table 5. Coefficients of the logistic regression analysis model for the Agreement group regarding learning venepuncture at nursing school

Variable	B	Standard error of B	p-value	Odds ratio	95% CI for odds ratio	
					Lower	Upper
Performed as a student	1.72	0.51	.001	5.56	2.06	15.01
Through actual clinical practice	-0.41	0.45	.361	0.66	0.27	1.61
Through practical training on a simulator	0.03	0.24	.890	1.03	0.64	1.66
Difficulties: Puncture	-0.52	0.39	.187	0.60	0.28	1.29
Difficulties: Inserting the needle into the vein	-0.10	0.40	.804	0.91	0.42	1.98
Difficulties: Switching hands	0.11	0.35	.746	1.12	0.56	2.23
Difficulties: Drawing the syringe plunger	0.33	0.34	.332	1.39	0.72	2.70
Sensation of the needle tip entering the vein	-1.52	0.75	.044	0.22	0.05	0.96
Sensation of the needle tip entering along the vein	1.66	0.70	.018	5.27	1.33	20.95
Constant	-0.02	1.46	.990	0.98		
Cox-Snell R ²	0.23					
Nagelkerke R ²	0.31					
Percentage correctly predicted	75.20%					

Venepuncture was performed whilst they were a nursing student by 86.0% of the agreement group and 51.9% of the against group. This first venepuncture was performed on a peer in 77.9% of the agreement group and 34.6% of the against group. The percentage of the against group who had practised on a model was 11.5%.

An adequate staffing level for nurses is a matter of major international concern because of its effect on patient safety and quality of care.^[16] Shortening the length of hospital stays for patients and emphasising safety is also important in Japan. A total of 15.9% of the participants in our study had directly punctured patients. However, when considering patient safety, the question arises as to how to train students before providing actual experience. Some patients may not agree to have venepuncture carried out by a nurse who is performing the procedure for the first time. This may result in the nurse practising on one of her peers.

Nursing students may be at even greater risk of needle-stick and sharps injuries due to their limited clinical experience.^[17-19] It is also important to minimise the risks to student during puncture and to establish conditions where an incident will not occur. The first venepuncture will shift from a nursing student to a novice nurse, and as this may be a late decision, the safety of the peer nurse needs to be considered. The mean duration between qualification as a nurse and the first venepuncture was approximately nine months. There is a question as to whether the experience of learning venepuncture is retained over time. After having learned the

technique at nursing school, this may be lost after a period of time and need to be relearned for later venepunctures.

The number of times the syringe was held before puncturing a dummy or an actual individual was < 20. The minimum duration of the first puncture as a nurse was one day.

However, nurses who have graduated for more than six months can communicate with patients and carry out venepunctures. These nurses are also likely to have other opportunities to handle needles, such as mixing infusion fluids, which can be a risky procedure when not performed carefully.

In this way, there is an appropriate period of time until the nurse performs venepuncture on a human. It is therefore important to become familiar with needles and syringes at nursing school, and this can be accomplished through substitution techniques. There has been a shift in the education of health professionals. Rather than acting as passive recipients of teacher-guided learning, students are now expected to become more capable of and accountable for acquiring knowledge according to a self-directed model. Educators need to apply learner-centered education models,^[20] and a program with meaningful experience is necessary.

4.3 Effective simulation training

Over the last decade, undergraduate training in clinical procedures has moved from “learning on patients” toward simulation-based training. However, simulation was intended to be an adjunct rather than a replacement for learning by ex-

perience, and several initiatives have been required to redress this imbalance. With these initiatives in mind, we evaluated the impact of our undergraduate skill training program and considered the need to change our teaching and learning strategies.^[21] This has necessitated new approaches when teaching clinical skills.

There has been a shift to using simulators and measuring competence prior to carrying out venepunctures on patients.

Skills are often learned during practice on a patient from the reaction of the patient. Because simulators do not show reactions, judging failure is often difficult. The against group experienced greater difficulty with punctures and moving the needle into a vein. It is therefore necessary to clarify these points of difficult and develop a training method using a simulator.

4.4 Future learning processes

Competent practitioners, regardless of the skill being practiced, must keep their knowledge and skills up-to-date. For venepuncture, this means regular practice and being able to work without direct supervision. Practitioners who indicate that they lack the appropriate knowledge and/or skill and competence must acknowledge this through exposure to learning and training.^[22] There may also be differences between instructors, with venepuncture involving minute details. Given these personal differences it is necessary to establish a better teaching method.

Comparing differences in personal skills with those of others and using different teaching methods to foster an attitude of looking for evidence related to techniques is important for all nurses. It is also important to consider how to train students based on personal experience, and how to assist them in the transition from nursing school to the clinical field.

The current learning environment requires change, and it is

only possible to make these changes for the next generation by analysing the learning process.

5. CONCLUSION

This study examined the background of nurses who agreed or disagreed with the concept of learning venepuncture on humans at nursing school. The majority of factors studied had been experienced to varying degrees, or alternatively had not been experienced.

Venepuncture has traditionally been learned through actual practice on patients and by experiencing failure. Patient and student safety during this learning process is a priority.

A person's experience is usually considered to pass onto the next generation in the same way. The first venepuncture will shift from a nursing student to a novice nurse, and because this may be a late decision, the safety of the peer nurse needs to be considered. The objectives of nursing schools and actually practicing nursing are different. This is the reason why a learning program is started after the nursing license is obtained. The program will be also, called into question as to whether or not it was carried out safely in the patient.

It is necessary to determine the learning process of experienced nurses in order to establish future educational programs. The question on how to develop this effective education will become a shared problem of clinical nurses and educators. The venepuncture learning program starts after the nursing license is obtained. The program will be called into question as to whether or not it was carried out safely in the patients. It is appropriate to cope with a new demand while making use of experience. Mutual understanding promotes practical skills and for this reason, it is important that we recognise differences in the learning process.

CONFLICTS OF INTEREST DISCLOSURE

The authors state that they have no conflict of interest.

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