

Macao Nursing Students' Perceptions about Their Nursing Skill Laboratory Examination: A Qualitative Approach

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Abstract The purpose of this study was to explore nursing students' perceptions about their skill examination in nursing laboratory. The nursing skill examination is one of the common evaluation methods that nursing schools use to evaluate the skills of nursing students. This qualitative approach allowed investigators to explore deeply the issues evolved from skill examination in nursing laboratory. Nursing students across each level (year 1 to year 4) were invited to describe their perceptions after taking their nursing skill examination in the school laboratory. Sixteen nursing students (7 males and 9 females) agreed to be interviewed to verbalise their perceptions. They were interviewed individually, and their responses were transcribed verbatim to facilitate analysis and theme identification. This study highlighted four main themes: (1) stress, (2) safety gate, (3) revision and (4) ability to express the perceptions of the 16 nursing students. The study shows that nursing students feel stress at skill examination. They preferred to practise more before skill examination and thought that skill examination is a safety gate for them to check their skill ability before starting their clinical practicum.

Keywords Nursing skill examination, Perception, Nursing students, Macao

1. Introduction

Skill practice for nursing students is definitely an essential training in nursing schools, because nursing students need to perform their nursing skills with knowledge in their clinical placement. More often, nursing students need to realise the differences between universities' nursing skill laboratories and the realism of clinical placements. To ameliorate this shock of reality, nursing schools establish nursing skill laboratories to help nursing students bridge the gap between university training and the real world (Ewertsson, Allvin, Holmstrom, & Blomberg, 2015; Houghton, Casey, Shaw, & Murphy, 2012a).

Many nursing schools around the world have already used simulators in nursing skills laboratories to train student nurses. Nursing skills laboratories can provide a venue for nursing students to practise their skills (Houghton et al., 2012b). Studies have stated that simulators can increase nursing students' self-confidence and satisfaction (Ha, 2016; Khalaila, 2014; Dearmon, Hayden, & Jones, 2013; Megel, Clark, Promes, Zander, & Goodman, 2012) and improve their critical thinking (Ewertsson et al., 2015), knowledge, and skill (Sundler, Pettersson, & Berglund, 2015). Objective

structured clinical examinations fill a need for practice in a safe environment; nursing students can practise and be evaluated in such laboratories in a safe, controlled environment by using simulation (Aronowitz, Aronowitz, Mardin-Small, & Kim, 2016; Sundler et al., 2015; Williams & West, 2011).

2. Background

This study was carried out in a nursing school of a public institute in Macao. Nursing skill examinations were still using traditional skill examinations instead of objective structured clinical examination (OSCE). Each student, from year 1 to year 3, needed to test only two nursing skills from what they had learned during their academic year. With two semesters in a year, students of year 1 to year 3 needed to test four nursing skills per year; year 4 nursing students did not need to take any skills examinations in laboratory.

Nursing students have nursing laboratory classes in which they learn different types of nursing skills. They need to pass their nursing skill examinations before starting their clinical practicums. Therefore, nursing students in Macao spend their free time after school practising skills in nursing school laboratories. However, studies are mostly interested in the values of simulators in nursing, causing a lack of studies of the perceptions of nursing students on how nursing skill laboratory examinations influence them during their undergraduate programme. Therefore, we would like to

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discover the perceptions of Macao nursing students about their skill laboratory examination in this study.

3. The Study

3.1. Aim

The aim of this study is to explore the perceptions of Macao nursing students about their nursing skill laboratory examination.

3.2. Design

Descriptive phenomenology was used as a research method to explore the nursing students' perceptions about their nursing skill laboratory examination. A qualitative approach was used through semi-structured interviews with open-ended questions related to the nursing students' perceptions about nursing skill laboratory examination. The questions were pre-set but could be reordered by the interviewer during the interview. The interview was performed in a one-on-one format. Interview subjects kept on going until data saturation. All data would be transcribed verbatim and analysed for theme identification.

Table 1. Demographic Data

Participant	Gender	Age	Study Year	Number of nursing skill examinations taken
1	Female	22	Year 4	6
2	Female	20	Year 2	3
3	Female	20	Year 2	3
4	Female	21	Year 3	5
5	Female	20	Year 2	3
6	Male	21	Year 3	5
7	Female	20	Year 3	5
8	Female	21	Year 3	5
9	Male	20	Year 1	1
10	Male	19	Year 1	1
11	Female	22	Year 4	6
12	Female	23	Year 4	6
13	Male	22	Year 3	5
14	Male	21	Year 3	5
15	Male	20	Year 3	5
16	Male	21	Year 3	5

3.3. Participants

Convenience sampling was used in this study. Participants were required to have experience in nursing skill laboratory examination. An average of four participants was planned to be selected from each level of study year. However, after the recruitment, the distribution of participants is as shown in the demographic data in Table 1. Demographic data included gender, study year (year 1 to 4), and number of nursing skill examinations taken. A total of 16 nursing students (7 males and 9 females) from year 1 to year 4 were willing to join and

describe their perceptions of nursing skill examinations in this study.

3.4. Ethical Consideration

Ethical approval provided by the Internal Review Management Board of the Research Committee of the Macao Polytechnic Institute was obtained before conducting this study. All participants were voluntarily joined after they were informed about the purpose and procedure of the study. They had the right to withdraw at any time during the interview. Participants signed an informed-consent form before starting their interview. Confidentiality was guaranteed.

3.5. Data Collection

Open-ended questions regarding nursing students' perceptions about their skill laboratory examination are set by authors because there is less study of this issue globally. All audio-recorded interviews were carried out by the main author to collect data from participants until data saturation. Data analysis includes listening to the verbal description and reading and rereading verbatim transcriptions for significant essences or statements. Essence relationships among those statements were transcribed as a final description.

The questions for the interviews (see Table 2) were developed based on discovering the perceptions of nursing students during their skill laboratory examination.

Table 2. Interview Questions

1. How do you perceive the nursing skill laboratory examination?
2. Please tell us your points of view and experiences concerning your skill examination in nursing laboratory.
3. How do you feel about the nursing skill laboratory examination? Could you describe your feelings and why it makes you feel so?
4. Can you describe a situation in which you would worry in your nursing skill laboratory examination?
5. What have you learnt from your nursing skill laboratory examination?
6. Do you expect to see any improvements in your coming skill laboratory examinations, for example, the role of examiners, setting environment, material preparation, or timing, etc.?
7. Do you have any further suggestions concerning your nursing skill laboratory examination?

The interviews took place after the students had finished their nursing skill examination. All interview recordings in this study would be kept confidential. Before each interview started, each participant confirmed that the interview could be recorded. Interviews were conducted in Cantonese and were transcribed and analysed immediately to capture essential data and themes. Identities in the transcripts were masked and coded with numbers A01–A16.

3.6. Data Analysis

Strauss and Corbin (1998) emphasised that inductive theory allows the researchers to validate the emerging meaning through continuous interpretation and comparison

of the incoming data.

All interviews were transcribed verbatim to ensure that interviewees' responses were accurately recorded. After transcription, the results were examined using thematic content analysis. Themes included discovery of commonalities among participants and a search for natural variation (Polit, Beck, & Hungler, 2001). Subthemes were formed by grouping similar attributes and number of times they occurred in interviews (Strauss & Corbin, 1998; Polit, Beck, & Hungler, 2001). Subsequently, an English version of the report was prepared. To attribute and show relationship between theme and subthemes clearly, a diagram (see Figure 1) illustrated the path of data analysis (Strauss & Corbin, 1998).

4. Results

After analysing all interview data, the content analysis identified four main themes: (1) stress, (2) safety gate, (3) revision, and (4) ability. Each main theme was composed of two to four subthemes. Details of each theme are presented in Figure 1.

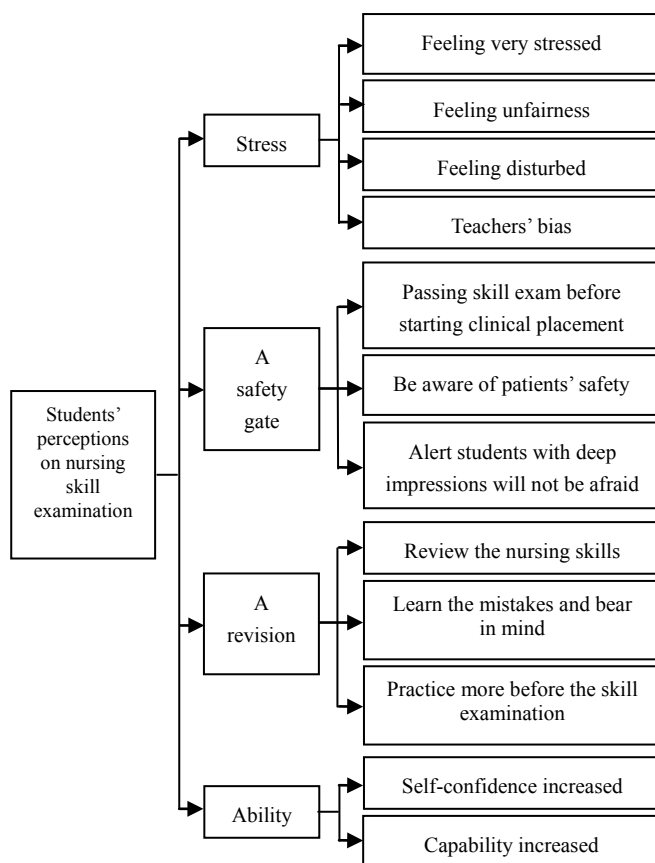


Figure 1. Four main themes of nursing students' perceptions on nursing skill examination

4.1. Theme 1: Stress

Participants felt that nursing skill laboratory examinations were too demanding and made them feel stressed, especially those who experienced failure in a

previous skill laboratory examination. Some participants also mentioned unfair scoring between different teachers.

4.1.1. Feeling Very Stressed

“When you hear that there is 5 minutes left, you must feel stress.” (Year 1 participant)

“The skill examination is set with a horrible feeling; all setting is not allowed to open to students.” (Year 3 participant)

“I think teachers should not show up their face, because when students see teacher's face, in fact, students feel stress. If separate teacher and student (in skill examination), then students do what they do, students can display their proper level of ability, and won't be interfered.” (Year 2 participant)

4.1.2. Feeling Unfairness

“It seems unfair, because students draw skill, one student may draw bed bathing, and the other one may draw enema . . . there is more procedure in the enema skill than bed bathing . . . it really tests your luck.” (Year 1 participant)

“I think it is a little bit unfair in scoring, because there are different teachers assigned for one skill . . . and different teachers have different standards in giving score . . . so I think that one teacher should be assigned for one skill only.” (Year 3 participant)

4.1.3. Feeling Disturbed

“My hand is shaking when teacher asks me question during my skill examination . . . I think: Had I done something wrong?” (Year 2 participant)

“I think it seems much better that teacher asks me questions after I have finished my skill examination, I can concentrate in performing my skill, after that, focus in replying teacher's questions.” (Year 3 participant)

“Teacher asks me questions, I need to think how to answer, it really disturbs my next step to perform my skill examination . . . then I need to jump back and focus in my skill performance . . . You know, you may be put too much attention in the question, and forget the next step you need to do in the skill examination.” (Year 4 participant)

4.1.4. Teachers' Bias

“I know different teachers come from different backgrounds, some may need you to do this in examination, yet some may not need you to do so, really confused.” (Year 2 participant)

“One teacher may ask you question in skill exam, yet another teacher may not” (Year 3 participant)

“I think teachers should have a meeting before skill examination, so that teachers could have a standard scoring protocol.” (Year 4 participant)

4.2. Theme 2: A Safety Gate

Participants thought that nursing skill laboratory

examinations should be included in the nursing programme because they believed that it acted as a safety gate to test and explore whether students had adequate skill for their clinical practicum. Participants also felt that nursing is a profession of caring for real persons and real life; as a result, they should take responsibility for carrying out their nursing skill safely to protect patients.

4.2.1. Passing Skill Examination before Starting Clinical Placement

“One nurse asked me: Have you passed your skill examination before this clinical practicum?” (Year 4 participant)

“You study nursing, skill is very important, but if there is not skill examination, it seems to fight on paper only, it is strange.” (Year 3 participant)

“Skill examination is to check if the student can go to clinical practice or not . . . it is a test to let students know how much they are familiar with their skills.” (Year 3 participant)

“I think students need to pass all skill examination before clinical practicum . . . if not, the school hasn't taken the responsibility for the students.” (Year 2 participant)

4.2.2. Being Aware of Patients' Safety

“I prefer teacher to fail me in skill examination . . . it is better . . . instead of failing in caring with real person, a real life.” (Year 3 participant)

“You need to pass the skill examination; in another words, it means to protect the patients' safety.” (Year 4 participant)

4.2.3. Alert Students with Deep Impressions will not be Afraid in Clinical Placement

“In nursing skill examination, you can evaluate and enhance your nursing skills, since you can realize which part you need to improve.” (Year 3 participant)

“You learnt your mistakes in skill examination, you will remember it in your clinical practicum, you won't be afraid.” (Year 4 participant)

“You feel more stable in clinical practicum because you have done the skill before in the skill examination.” (Year 4 participant)

4.3. Theme 3: A Revision

Participants recognised that passing the nursing skill laboratory examination is important, so they needed to practise more before taking the examination. They also noticed that skill examinations can help them discover their weak points and the nursing skills they need to improve.

4.3.1. Review the Nursing Skills

“It is better to teach all nursing skills in year one, then, in each year, have skill examination as revision before starting clinical practicum.” (Year 4 participant)

“Though I feel upset when I have done wrong in skill examination, I will remember it, and bear in mind.” (Year 3 participant)

4.3.2. Learn the Mistake and Bear in Mind

“If you have done the skill in skill examination, you are deeply impressed by it.” (Year 3 participant)

“In fact, I really hope that teacher can tell me which parts have been deducted, why deducted, and which parts need to improve.” (Year 4 participant)

4.3.3. Practice More before the Skill Examination

“Due to skill examination, I practice nursing skills more than before.” (Year 3 participant)

“Really need to practice more for skill examination, since the atmosphere in skill examination is different from practice.” (Year 1 participant)

“Skill examination will force you to practice more in nursing laboratory.” (Year 1 participant)

4.4. Theme 4: Ability

Some participants have the feeling of increasing skill capability after nursing skill laboratory examination. Through nursing skill examinations, students can present and certify their ability to perform their skills in the nursing laboratory and even in the clinical practicum.

4.4.1. Self-Confidence Increased

“In nursing skill examination, you can increase your self-confidence to say that, ‘I have passed this skill in my skill examination’ to nurses in wards.” (Year 2 participant)

“I feel good, because I performed well in the past skill examination . . . really have confidences for the next skill examination.” (Year 1 participant)

“After the skill examination, you will feel much better; if you pass, you will have confidence since you had passed it in the skill examination.” (Year 3 participant)

“I think skill examination is important, because I won't feel panic in the clinical placement because I had passed my skill examination.” (Year 3 participant)

4.4.2. Capability Increased

“In fact, nursing skill examination is a test to prove that you can.” (Year 1 participant)

“Skill examination can let you know your level of skill ability.” (Year 2 participant)

“I feel panic because I failed in my first skill examination, and it seriously influenced my feeling for the next examination . . . I promise to practice more for the next time.” (Year 1 participant)

5. Discussion

This study has provided an understanding of the perceptions of the Macao public institute's nursing students concerning their nursing skill examination in laboratory. Four main themes were explored in this study: stress, safety gate, revision, and ability.

Studies showed that nursing students felt stress during

their nursing skill examinations (Muldoon, Biesty, & Smith, 2014; Stunden, Halcomb, & Jefferies, 2015). This study also presented the similar finding. One possible reason may be that there was no briefing conducted by teachers for nursing students before their skill laboratory examination. As a result, students did not know well enough concerning the requirement of their skill examination. Teachers could arrange a briefing for students in order to give a clear dimension of requirements that students should be aware during their skill laboratory examination. This study also presented a finding that nursing students felt pleasure and understood that they should practise more to perfect their skills. One possible interpretation may be that nursing students realised their responsibilities and knew that nurses need to deal with real life and care for real people with real feelings. As a result, they were willing to stay after school for practising their skills in nursing laboratory. For nursing institution, educators should be aware of student's tensions during their skill examination, and provide proper guidance and encouragement after examination, which could be a supportive action to alleviate student's stress.

This study found that nursing teacher was one of the main influencing factors to nursing students during their skill examination. This finding is similar to the study of Alos, Caanto, and David in 2015. Alos *et al.* discovered that nursing teachers had a great impact on students' academic performance. In this study, students reported that there was bias among teachers during the skill examination. One possible interpretation may be that there was not meeting conducted by teachers to conclude a final marking scheme and examination format before starting the skill examination.

Moreover, nursing students mostly agreed that one teacher for one skill is better than two or more teachers to reduce teachers' bias in scoring different students. In order to provide "one teacher one skill", nursing program coordinators should arrange more hours for teachers to prepare such nursing skill examination. This could be a challenging management for coordinators. Nevertheless, according to the feedbacks in this study, promoting "one teacher one skill" would be a fair arrangement for nursing students in their skill examination.

This study reported that nursing skill laboratory examination is a safety gate for students since students can learn from their mistakes during their skill examination; and at the same time teachers can determine whether students are ready for the clinical practicum. It also showed a message of responsibility for students to alert for patients safety. These findings are similar with previous studies which stated that skill examination could identify the strengths and weaknesses of nursing students, and could improve their clinical skills (Beckham, 2013 and Sundler *et al.*, 2015); besides, they saw their responsibility to learn and gain skills, be professional, and care for patients (Gidman *et al.*, 2011). As a result, debriefing with students after skill examination is recommended. Teachers should provide informative guidance or comments to students concerning their weakness parts in skill examination, so that students could remember

and bear in mind.

Researchers found that nursing skill examinations can increase students' knowledge and confidence (Ha, 2016; Preston-Safarz, & Bolick, 2015; Barry, Noonan, Bradshaw, & Murphy-Tighe, 2014). Similar outcome also found in this study. Students experienced an enhancement of their capability and an increase in their confidence in performing their nursing skills, since skill examinations provide an opportunity for nursing students to practise more and review their knowledge and skills (Barry *et al.*, 2012, Muldoon *et al.*, 2014, and Yoon, Kim, & Choi, 2013). Practices make perfect, that is why students practised more in order to pass their skill examination, especially year 1 nursing student in this study. Peer group learning after school among students in the nursing skill laboratory may be one possible interpretation for this finding. Students are willing to come back to nursing skill laboratory for more practices in order to be more familiar with their nursing skills before starting skill examination and clinical practicum. That is why students experienced enhancement of ability and confidence in their skill performance.

6. Limitations

This study shows some valuable insights into the way nursing students perceive their skill examinations in laboratory. The study design of focused ethnography, however, is useful for gaining insight into a localised culture group but may have limitations when generalised to other locations or culture groups.

7. Conclusions

Although nursing skill examination is a stressor for nursing students, they still found that nursing skill examination is a gate and checkpoint to alert them on their strengths and weaknesses in their nursing skills and knowledge. Nursing students can benefit through skill examination to review their technique and improve their skill and knowledge. They also claimed that they need to take responsibility to take care of patients' safety and agreed that skill examination is necessary in students' lives, especially for nursing students, because being a nurse or even a nursing student requires them to be responsible for patients' lives.

Although most nursing students in this study were concerned about teachers' bias and scoring in nursing skill examinations, they still noted that their self-confidence and capability to perform nursing skills could be enhanced through skill examination, in both the clinical skill laboratory and clinical placement. Feedback from nursing students concerning teachers' bias in skill examination stated a desire for a mostly silent examiner when they were performing their skill during examination. This could be regarded as a recommendation for nursing educators while planning a nursing skill laboratory examination.

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