A Survey on Perception of Theory-Practice Gap among Nursing Students

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Abstract. A great combination of excellent theoretical learning session and effective practical learning experience can help close the theory-practice gap in nursing profession. It would certainly be helpful in fostering improvement in nursing education system within the organisation. The aim of this study is to determine the nursing students' perceptions towards practical learning, preferred learning strategies and theory practice gap in a selected private nursing college. This study used a cross-sectional descriptive designed and enrolled 120 participants in a selected private nursing college. The instrument had four sections, and the respondents answered 46 items with dichotomous and Likert scales. The data collected were input to SPSS software and analysed using descriptive statistics and chi-square test. The results showed that more than 80% had a positive perception towards practical learning where orientation was done prior to their placement and were supervised. No association between gender and year of study in practical learning was found. However, an association was found between gender and theory-practice gap. An association was also found between year in the nursing course and in theory-practice gap. Although the participants expressed positive perception towards their practical learning aspects, changes in the education system, especially in areas highlighted, are still needed. The nursing students relatively raised their concerns regarding insufficient provision of clinical instructors as they were not supervised at all times. In view of bridging the theory-practice gap, immediate attention should be given to the resolution of this matter as it can result in theory-practice gap in nursing education.

Key words: practical learning; theory-practice gap; nursing students; private nursing college.

Introduction

The nursing education system has focused on theoretical learning and practical learning as an essential requirement nursing practice (Chaghari et al., 2017: 26; Sloan, 1998: 42; Ajani & Moez, 2011: 3927; Cheraghi et al., 2019: 132). The context of practical learning is referred to learning while performing or during a hands-on process (Ajani & Moez, 2011: 3927). An effective combination of excellent theoretical learning session and effective practical learning experience can help close the theory-practice gap in the nursing profession. Dadgaran et al. (2012: 1713) highlighted that among the main factors that bridge the theory-practice gap is a strong link between theory and practice. Practical learning is one of the main concerns that is useful in increasing awareness among nursing students during clinical practice, and linking theoretical knowledge to practical skills (Mahmoud, 2014: 5083). A poor theoretical learning session and ineffective practical learning experience will result in a theory-practice gap. Presentation of required knowledge and skills by nurse educators and clinical preceptors can help bridge the theory-practice gap (Ajani & Moez, 2011: 3927; Mahmoud, 2014: 5083).

Theory-practice gap in nursing has been highlighted in many studies. It is the most significant issue in nursing and the concept of evidence-based practice (Ajani & Moez, 2011: 3927; Scully, 2011: 98). Greenway articulated that there are three identified theory-

practice gap attributes, namely, problems in the relation between university and clinical practice, failure of practice to reflect theory and perception of theory as irrelevant to current practice (Greenway, 2019: 1). Any issue that fits into one of the three attributes will definitely contribute to the theory-practice gap (Greenway, 2019: 1-6).

The gap between theory and practice has been addressed in the international literaturess (Ajani and Moez, 2011: 3927; Mahmoud, 2014: 5083; Scully, 2011: 98; Greenway, 2019: 6). Knowledge and practice issues have a long history in nursing education, and are the chronic sources of controversy which cannot be solved easily or perfectly) (Dadgaran et al., 2012: 1713; Hewison and Wlldman, 1996: 754). The tension among theory, practice and research can be utilized in teaching and research.

The key goal of nursing education is to develop individuals with required skills, knowledge and capability to render high quality nursing care (Rafferty et al., 1996: 685). Despite initiatives aimed at this goal have been undertaken, the theory-practice gap in nursing education remains a global issue (Rafferty et al., 1996: 685; Greenway, 2019: 1-6; Mahmoud, 2014: 5083), including in Malaysia. The theory-practice gap is the most critical issue in nursing education and should be addressed seriously (Hewison and Wlldman, 1996: 754; Shahzadi et al., 2017: 896)

Highlighting the complexity of the problem, few scholars have noted that student nurses perceived the theory-practice gap differently (Ajani & Moez, 2011: 3927; Dadgaran et al., 2012: 1713; Safazadeh et al., 2018; Jamshidi, 2012: 3335). Students may be divided between the demands of their study and those of their practice (Ajani & Moez, 2011: 3927). They encounter actual clinical conditions where they are incapable of generalising what they have learned in theory (Ajani & Moez, 2011: 3927; Baraz et al., 2015; Flood and Robinia, 2014: 329). The discrepancy between nursing as taught in classroom and nursing practice by students in the clinical setting has been a concern of educators, practitioners and learners worldwide (Shahzadi et al., 2017: 896; Baraz et al., 2015). The fundamental problems found by Bendal in 1976 have continued to cause concern despite the significant efforts of professionals (Bendall, 1976: 3). Theory-practice gap in nursing is one of the greatest challenges, given the discrepancy between theory and clinical practice, particularly when theory integrated into practice (Mahmoud, 2014: 5083). The clear gap between what is taught in the classroom and student's experience in the clinical setting has been explored in the literature (Saifan et al., 2015). This discrepancy might cause confusion among students and educators. This prevent nursing students from excelling in applying theories in nursing and practicing their profession. In current study setting in Malaysia, discrepancy between what is taught in the classroom and how care provided in practice is still present. This problem affected student nurses' performance in skills as well as their theory. A lack of translation between theory and practise raises the question of whether nursing education can produce competent nurses and the value and quality of student learning experiences. Hence, the researchers have exerted considerable effort to identify the root causes of issues in practical learning and theory-practice gap. Therefore, this study is essential to the identification of issues in practical learning and theory-practice gap as perceived by nursing students in a selected private nursing college in the southern region of Malaysia.

Methodology

Study design

A cross-sectional descriptive study design was used in determining issues in practical learning and theory-practice gaps as perceived by nursing students in a selected private nursing college in the southern region of Malaysia.

Setting and sample

The target population included the second- and third-year students of the Diploma in Nursing. Raosoft sample size calculator (Raosoft, 2004) was used (5% margin error, 95% confidence interval and 50% distribution rate). The estimated sample size required was 131 after a 10% attrition rate was used. Second- and third-year nursing students (in these academic years, courses offering actual practice are included in the curricula) who volunteered to participate in this study were included. First-year nursing students were excluded because they had not gained any experience in clinical posting.

Instrument

The questionnaire was adopted from Nxumalo (2011). Permission was obtained from the author. The questionnaire consisted of four sections. Section A was used in obtaining demographic data such as age, gender, ethnic, years in nursing course, clinical placement setting experience and highest education qualification before joining nursing programme. Section B was used in obtaining responses regarding practical learning comprising information reflecting the perceptions of nursing students with regard to practical learning (items 1-10), clinical practice experience (items 11=18) and availability of sufficient resources during clinical practice (items 19-25). This section used a Likert scale with two options (yes, 1 mark; no, 0 mark); Section C was used in obtaining responses regarding preferences in learning strategies, consisting of perceptions of nursing students with regard to their preferred learning strategies. This section used a Likert scale with five options: all the time (5), half of the time (4), not sure (3), least time (2) and never (1). Section D was used in obtaining responses regarding the theory–practice gap. It covered the perceptions of nursing students as to the aspects inducing the theory–practice gap given that the teaching strategies using simulation differ from those used in actual clinical practice in wards. It used a Likert scale with two options (yes [1] and no [0]).

Validity and reliability testing

An expert panel comprising the head of academic and two senior lecturers reviewed the questionnaire and confirmed its content validity. They unanimously acknowledged the applicability of the questionnaire to the study. Thus, no modification was required. Reliability was determined Cronbach alpha values of ≥ 0.70 (Polit and Beck, 2017). The clarity of the question was tested in a pilot study for the identification of the estimated time required for each participant to complete the questionnaire.

Data Analysis

The answers in the questionnaires were coded and processed using IBM SPSS statistics version 26. The description of the demographic data and 46 items in the questionnaires were collected and subjected to descriptive statistics. The frequencies and percentages were presented in a tabulated or graphical order. To test hypotheses, we used the chi-square test (Polit and Beck, 2017), which was also used in testing the associations between demographic characteristics and practical learning and between demographic characteristics and theory–practice gap among nursing students. A probability value of <0.05 was considered statistically significant.

Ethical consideration

Ethical aspects, such as confidentiality, were ensured throughout the study. Ethical approval from the Internal Medical University Joint Committee on Research and Ethics was obtained before the study. Permission was obtained before the three selected panel members validated the tools. Permissions for the pilot study and main data collection were obtained from the principal of the selected private nursing college. Written consent

was obtained from each participant before the study, and right to voluntarily participate or to withdraw at any point of time was explained.

Results

Of the total 131 questionnaire distributed, 120 were valid for data analysis, presenting a 91.60% return rate. A total of 112 respondents were in the of 19–21 years age group (93.3%), whereas eight respondents (6.7%) were included in the 22–25 years age group. Thus, the younger age group of respondents were more than the older age group of respondents in this study. The female respondents dominated in number (100, 83.3%). Malay, Chinese and Indian respondents were 72 (60.0%), 38 (31.7%) and 10 (8.3%) in number, respectively. A total of 112 (93.3%) respondents had SPM/O-level qualification, and eight (6.7%) had STPM/A-level qualification.

Table 1. Nursing students' perception towards their practical learning (n = 120)

Item	Statements	No	Yes
B10	Gained more confidence to perform a skill.	1 (0.8%)	119 (99.2%)
B11	Orientation to the clinical practice were done prior to placement in the wards.	1 (0.8%)	119 (99.2%)
B13	Orientation by clinical instructor was done.	1 (0.8%)	119 (99.2%)
B15	Supervised by a clinical instructor.	1 (0.8%)	119 (99.2%)
B18	Clinical instructors helped me to master the skills.	1 (0.8%)	119 (99.2%)
B3	Availability of opportunity to practice skills during simulation sessions.	2 (1.7%)	118 (98.3%)
B9	Practical supervision is beneficial to my skill growth.	2 (1.7%)	118 (98.3%)
B5	Nurse educators use group discussions as teaching strategies.	3 (2.5%)	117 (97.5%)
B20	Availability of monitors	3 (2.5%)	117 (97.5%)
B12	Orientation by nursing supervisor or senior professional nurse in the ward.	4 (3.3%)	116 (96.7%)
B1	Availability of access to the simulation or skill laboratory.	6 (5.0%)	114 (95%)
B2	Nurse educators are available during practical learning.	6 (5.0%)	114 (95%)
B22	Availability of surgical and medical items.	7 (5.8%)	113 (94.2%)
B23	Availability of personal protective equipment.	7 (5.8%)	113 (94.2%)
B4	Availability of feedback on performance after the simulation sessions.	8 (6.7%)	112 (93.3%)
B19	Availability of equipment for clinical learning experiences.	9 (7.5%)	111 (92.5%)

B21	Availability of instruments or written procedures to follow during clinical sessions.	9 (7.5%)	111 (92.5%)
B8	Skill demonstration by the nurse educator took away my fear of performing myself.	10 (8.3%)	110 (91.7%)
B14	Availability of lists of planned activities on arrival in the clinical settings.	10 (8.3%)	110 (91.7%)
B16	Supervised by senior professional nurse in the ward.	12 (10.0%)	108 (90.0%)
B17	Supervision occurs at all time.	22 (18.3%)	98 81.7%)
B25	Other human resources were insufficient or absent.	35 (29.2%)	85 (70.8%)
B24	Insufficient provision of clinical instructors	42 (35.0%)	78 (65.0%)

With regard to perceptions of practical learning (Table 1), more than 90% of the respondents agreed that orientation session was performed prior to their placement in wards and were supervised by instructors and senior supervisors while in the hospital. Their instructors had further helped them to master clinical skills by giving them the opportunity to practise and simulate. The strategies used were mainly demonstrations, discussions and simulations that helped the students master clinical skills. Surgical and medical items were available during their training sessions. Moreover, they constantly received feedback on their practical learning which had resulted in gaining more confidence to carry out practical sessions on their own.

On the other hand, items with relatively low scores (65%–80% agreement) clearly showed that the students were not supervised at all times and received insufficient resources and clinical instructors were insufficient during their practical training. Hence, this study shows that nursing students had a positive perception towards clinical practice where orientation was performed prior to their placement and were supervised. Clinical instructors used demonstrations, discussions and simulations to enabled the students to master clinical skills, and feedback provided by instructors and supervisors made them more confident when carrying out practical sessions. However, their perception was relatively low as they were not supervised at all times, and they had insufficient resources and clinical instructors during their practical training.

Table 2. Nursing students' perception towards preferred learning strategies (n = 120)

Item	Statements	1	2	3	4	5	Total4&5
C7	I prefer hands on experience	0	0	10 (8.3%)	54 (45.0%)	56 (46.7%)	110 (91.7%)
C2	I want the clinical instructor to give examples of practice	0	0	10 (8.3%)	59 (49.2%)	51 (42.5%)	110 (91.7%)
C1	I like to carry out plans and new experiences.	0	0	15 (12.5%)	67 (55.8%)	38 (31.7%)	105 (87.5%)
C6	I like to formulate different ideas on how things should work.	0	1 (0.8%)	19 (15.8%)	64 (53.3%)	36 (30.0%)	100 (83.3%)

C4	I like testing the relevance of theory to practice	0	0	24 (20.0%)	60 (50.0%)	36 (30.0%)	96 (80.0%)
C5	I like to think scientifically to explain things	0	2 (1.7%)	26 (21.7%)	59 (49.2%)	33 (27.5%)	92 (76.7%)
C3	I prefer brainstorming techniques to solve problems	0	2 (1.7%)	30 (25.o%)	57 (47.5%)	31 (25.8%)	89 (73.3%)

Based on the analysis of data in Table 2 above on nursing students' perception towards preferred learning strategies, it is very evident that more than 80% respondents preferred instructors to give hands on experiences, to give examples of practice, to carry out plans and new experiences, formulate different ideas on how things should work and like testing the relevance of theory to practice. 110 students equal to 91.7% noted that they highest preference was hands on experience and clinical instructor to give examples of practice. On the other hand, items that had scored relatively low with 70%-79% clearly shows that the nursing students preferred brainstorming techniques to solve problems, to think scientifically to explain things and testing the relevance of theory to practice.

Table 3. Nursing students' perception towards Theory Practice Gap (n = 120)

Item	Statements	No	Yes
D4	Discussions on the subjects by nurse educators periodically.	15 (12.5%)	105 (87.5%)
D5	Demonstrations are used as a teaching strategy in theory by the nurse educators.	15 (12.5%)	105 (87.5%)
D7	Lecture techniques used as teaching strategies in theory by nurse educators.	15 (12.5%)	105 (87.5%)
D10	Able to apply the nursing processes more comprehensively.	15 (12.5%)	105 (87.5%)
D1	Encourage to discuss aspects of practical experience in class with the nurse educator.	16 (13.3%)	104 (86.7%)
D3	Able to compare my clinical experience with what I learned in theory.	16 (13.3%)	104 (86.7%)
D6	Group discussions used as a teaching strategy in theory by nurse educators.	17 (14.2%)	103 (85.8%)
D8	Able to compare theoretical knowledge and practical skills.	17 (14.2%)	103 (85.8%)
D9	Able to clarify difficult concepts.	17 (14.2%)	103 (85.8%)
D2	Aspects learned through discussion with my nurse educator helps me to link connections to my previous experiences.	18 (15.0%)	102 (85.0%)
D13	During simulation one uses imagination and in the real practical setting it becomes clear.	20 (16.7%)	100 (83.3%)
D11	There is a gap between theoretical knowledge and practical skills.	30 (25.0%)	90 (75.0%)
D14	Not all theoretical knowledge can be applied into skills.	31 (89.0%)	89 (74.2%)

D12	Aseptic technique is maintained during simulation and not done in real practice setting.	50 (41.7%)	70 (58.3%)

Based on the analysis of data in Table 3 above on students' perception towards aspects inducing theory-practice gap, it is very evident that more than 80% respondents had agreed they preferred discussion, lectures, demonstration and simulation strategies used by instructors to master clinical skills. As for the discussion strategy, they perceived it is done periodically in groups and to link it with their previous experiences. For lectures, they perceived it to be done with demonstrations. For simulation strategy, they used their imagination of practical settings. Lastly, they preferred to compare clinical experience with theory and be able to apply those processes at work. However, items that relatively scored less than 80 % of agreement for maintaining aseptic technique during simulation and not done in real practice setting, theoretical knowledge cannot be applied into skills and there is a gap between theoretical knowledge and practical skills.

Table 4. Chi-square test for practical learning with demographic characteristics (n =120)

Variable	Demography	N	Chi-square value	df	p
Gender	Male = 20	120	21.04	9	0.01
	Female = 100				
Level in nursing course	Year 2 = 53	120	11.09	9	0.27
	Year 3 = 67				
Highest Qualification	SPM/O-level = 112	120	17.60	9	0.04
	STPM/A-level = 8				
**p= <0.05*					

Table 4 shows the results of chi-square analysis for the association of practical learning with gender, level of nursing course and highest qualification. The respondents comprised 20 males and 100 females (x^2 = 21.04; df = 9; and p = 0.01). This result clearly indicated that with a confidence level of 95%, no association was present between gender and practical learning. That is, no association between male and female nursing students was observed with regard to practical learning.

As for the association of practical learning with year in nursing course, 53 respondents were in the second year, and 67 were in the third year (x^2 = 11.09; df = 9; and p = 0.27). This result clearly indicated that at a confidence limit of 95%, year in the nursing course is associated with practical learning. Thus, we concluded that year in the nursing course is associated with practical learning and rejected the null hypothesis.

Finally, in the association between practical learning and highest qualification, 112 respondents had SPM/O-level qualification, and eight had STPM/A-level qualification (x^2 = 17.59; df = 9; and p = 0.04). This result clearly indicated that at a confidence limit of 95%, highest qualification was not associated with practical learning. Thus, the highest qualifications of nursing students had no association with practical learning, and the alternative hypothesis was rejected. Overall, this study showed that gender is not associated with practical learning at the selected private nursing college (x^2 [9, N = 120] = 21.04; p = 0.01). An association was found between year in the nursing course and

practical learning (x^2 [9, N = 120) = 11.09; p = 0.27). No association was found between the highest qualifications of nursing students and practical learning (x^2 [9, N=120] = 17.59; p = 0.04).

Table 5. Chi-square test for theory-practice gap with demographic characteristics (n = 120)

Variable	Demography	N	Chi-square value	df	p
Gender	Male = 20	120	8.53	10	0.577
	Female = 100				
Year in nursing course	Year 2 = 53	120	22.32	10	0.014
	Year 3 = 67				
Highest Qualification	SPM = 112	120	31.22	10	0.001
	STPM = 8				
p= <0.05					

Table 5 above shows the results of chi-square analysis for association between theory–practice gap and demographic characteristics of gender, year in nursing course and highest qualification among respondents. It can be noted that that for gender, there were 20 male and 100 females; x^2 = 8.53, df = 10 and p value = 0.577. This result clearly indicated that at a confidence limit of 95%, an association was found between gender and theory–practice gap. Thus, there is an association between gender and theory–practice gap, and the null hypothesis was rejected.

As for the association between theory–practice gap and demographic characteristics of year in nursing course it can be noted that that there were 53 in year 2 and 67 in year 3 (x^2 = 22.23; df = 10; and p = 0.014). This result clearly indicated that at a confidence limit of 95%, no association was found between year in the nursing course and theory–practice gap. Thus, year in the nursing course was not associated with theory–practice gap, and the alternative hypothesis was rejected.

Finally, in the association between theory–practice gap and highest qualification, 112 had SPM/O-level qualification and only eight had STPM/A-level qualification (x^2 = 31.22; df = 10; and p = 0.001). This result clearly indicated that at a confidence limit of 95%, no association was found between highest qualification and theory–practice gap. Thus, we concluded that the highest qualification was not associated with the theory–practice gap and rejected the alternative hypothesis.

Moreover, an association between gender and theory-practice gap was found (x^2 [10, N = 120] = 8.53, N = 120; p = 0.577), but an association between year in the nursing course and theory-practice gap (x^2 [10, N = 120] = 22.32, = 0.014). No association was found between the highest qualification of nursing students and theory-practice gap (x^2 [10, N = 120] = 31.22, p = 0.04).

Discussion

More than 80% of the nursing students had a positive perception towards practical learning when orientation was done prior to their placement and when they were supervised. Their instructors had used demonstrations, discussions and simulations to enable them to master clinical skills, surgical and medical items were available, and

feedback was provided by instructors and supervisors. Thus, the students were confident that they can carry out practical sessions. However, their perception was relatively low as they were not supervised at all times, and they had insufficient resources and clinical instructors during their practical training. A study on nursing students' perception regarding practical learning and theory–practice gap in a nursing college in Saudi Arabia concluded that practical skill training in nursing education should be further examined (Elhanafy and Moustafa, 2016: 41199). More than half of the students mentioned that clinical supervision was actually beneficial for them. These findings were inconsistent with the results from the study conducted in Jordon nursing college (Saifan et al., 2015).

The findings were nearly consistent with those of Nxumalo (2011), who reported that 90% of students had clinical supervision, the majority of students reported that the nurse educator provided discussions on clinical experience in the classroom during theoretical session and half of the students claimed that these discussions helped them find a link between theory and practice. Aiery et al. (2018: 75) supported this finding where the perception of nursing students towards the practical learning and strategies to bridge the theory-practice gap had recommended continuous communication between the education and clinical practice.

More than 80% of nursing students preferred discussions, lectures, demonstrations and simulation strategies and preferred to compare clinical experience with theory and apply these processes. However, they disagreed with the conduct of the aseptic technique during simulation rather than in a real practice setting. Theoretical knowledge cannot be applied to skills, and a gap exists between theoretical knowledge and practical skills. This study was in line with another study conducted by Abu Salah et al. (2018: 17), who showed that despite efforts undertaken to close the gap, the inconsistency between theory and practice has remained the concern of educators, nursing students and practitioners.

This study suggested that the respondents or students agreed that clinical instructors or human resources are insufficient and pointed out that they were not supervised at all times. This issue should be examined as it contributes to the gap between theory and practice. Further research is needed to address this issue and certainly has positive implications for nursing education.

Limitations

This study was conducted to determine how practical learning and theory–practice gap are perceived by nursing students in a selected private nursing college in the southern region of Malaysia. Moreover, the cross-sectional design might have limited the generalisability of the findings. The use of self-reported might result in response bias. Thus, the findings of this study cannot be generalised to other private or public nursing colleges. Some researchers recommended studies in several settings and the use of a high number of participants to facilitate comparison[6]. Second- and third-year students were selected in this study as they already had gained experience in the clinical setting.

Conclusion

Although the participants expressed positive perceptions towards their practical learning aspects, changes in the education system, especially in the areas highlighted, are needed. The nursing students relatively raised their concerns regarding the insufficient provision of clinical instructors as they were not supervised at all times. Moreover, immediate attention should be given to the bridging of the theory–practice gap, which can result in a theory–practice gap in nursing education. In line with the technology

advancement era, the nursing education team should update and reconsider the learning strategies preferred by the nursing students to achieve a conducive and positive learning environment in practical area and classroom teaching.

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