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FEATURE

**The Importance of Theoretical Comprehension
for Nursing Students' Clinical Competence**

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***Abstract:** In nursing education, theory and practice are always linked because, in clinical practice, students have to apply the theory that they learn in the classroom. Students make clinical judgments based on scientific knowledge, theory, laws, principles, and some intuition. To ensure that the students are able to apply the theory learned in the classroom, support from clinical instructors, staff nurses, and fellow learners is also essential. Results show that the respondents perceived peer support as the strongest support they received in their clinical practice, compared with the support from their clinical instructors and staff nurses. The strongest predictor of clinical competence was theoretical comprehension, which predicted 25% of the variance.*

In the clinical area, nursing students have to apply the theory they learn in the classroom in practice, in direct care of patients. Sufficient theoretical knowledge, according to Gaberson and Oermann (1999) helps students to face varied clinical conditions. They assert that nursing education should teach and prepare students with adequate theory in nursing before they enter the clinical area. The students who have adequate theory are prepared for clinical situations, and make critical judgment properly. They are able to deliver quality nursing care to patients by working effectively and efficiently in clinical practices. In short, theoretical knowledge leads students to be competent nurses (Gaberson & Oermann, 1999).

In preparing students with adequate theory, three dimensions of learning—cognitive, psychomotor, and affective—are needed. The cognitive domain of learning is related to knowledge. It is the content comprehension to perform the skill. The aim of preparing students cognitively is to enable them to deal with various complex patient conditions and problems. The psychomotor domain of learning is related with practical skills that require neuromuscular coordination

that enables students to take action efficiently. The affective domain of learning is related to ethical and moral reasoning of the nursing professionals that is evidenced in their attitudes and practices. The aim of teaching students in the affective domain of learning is to help them to be able to deal professionally with the moral and ethical dilemmas of the profession. In nursing education, students have to learn about “caring” as one of the prominent values. Caring is based on the concept of helping others and keeping patients’ dignity, as well as improving their health condition and welfare (Reilly & Oermann, 1992).

Clinical Competence

In today’s setting, the demand for competent nurses is high. Many factors compel health care services to provide quality service. According to Lenburg (1999) new knowledge, new sicknesses and diseases, the increasing size of the aging population, advanced technology, the desire of clients to have fast, quality service, the complexity of the health care system, and unstable sociopolitical conditions are a few things that demand competent nurses who can work productively and efficiently in this changing era.

Health care and service institutions are required by governments, organizations, and professional groups to “promote health care that is safe, effective, client centered, timely, efficient, and equitable” (American Association of Colleges of Nursing, 2007b, Background section, para. 3). These institutions are those who employ the majority of the graduates from nursing schools, and they realize that their success and accreditation heavily depends on the quality of their staff (Molly, 1998). These institutions compel nursing education to ensure that competency is an outcome of their educational efforts (Cook, 1999) and that their students and new graduates have at least the initial competencies according to appropriate standards (Lenburg, 1999).

In response to the demand, nursing education institutions have to prepare their students for professional nursing tasks according to current standards of nursing practices and education. This implies that nurse educators have to develop courses, set the expectations of the outcomes by selecting relevant knowledge, skills, and values that students need to learn, and emphasize effective and safe behavior in practice (Gaberson & Oermann, 1999).

Clinical competencies are essential to prepare nursing students to be competent workers in the real world of the profession (Molly, 1998). Students attain the competencies if the system of education not only teaches the theory but also exposes them to real clients. The clinical experience should develop over time, beginning with simple health problems and over time increasing students’ exposure to more complex situations (Reilly & Oerman, 1992). This system is rooted in Bruner’s theory for efficient learning, which is well known as the spiral curriculum. In this theory, the structure of learning should be based

on fundamental concepts. After students understand and are familiar with simple concepts, the educator helps students develop their understanding by exposing them to more complex concepts (Marsh & Willis, 2003).

Clinical Grades as a Symbol of Clinical Competence

One way to determine the nursing students' competence is by the assessment of their clinical progression at every level. Assessments help clinical instructors to ensure that students have the required competence before they are promoted to a higher level or enter the profession (American Association of Colleges of Nursing, 2007a).

Competency-based assessment is the appropriate assessment method to determine nursing students' clinical competence. This type of assessment allows nursing educators to assess students' cognitive ability, attitudes, and social skills. It also allows clinical instructors to "observe and to rate learners directly as they analyze, problem solve, experiment, make clinical instructions, measure, cooperate with others," and give oral presentations. It also allows clinical instructors to "observe achievement, mental habits, ways of working, and behaviors of value" of the students in clinical practices" (Kubiszyn & Borich, 2003, pp. 154–155).

Since students' clinical experiences are based on the course objectives, the evaluation and grading system will also have to be in accord with this setting. As Reilly and Oermann (1992) affirm, the criterion-referenced grading system is the most relevant way to measure students' clinical competencies, because it measures students' abilities based on performance standards which were stated in the objectives of the unit or course.

Reilly and Oermann (1992) further state that the result of assessment is used to determine students' clinical grades, which certify the students' competence. The grading system provides results that are easy to interpret and communicate to the public. Agreed-upon symbols are designated to stand for achievement in educational experiences. Thus, a grade is an easily understood symbol for the acquisition of competencies and achievement. For this reason, in this study, fourth year students' clinical grades are used as a measure of clinical competence.

The Need for Quality Christian Education

The purpose of Christian education is to prepare students to be competent workers in this world and in the world to come. To achieve that purpose, Christian education has to involve students in the comprehension of theoretical knowledge which is "harmoniously blended with a Christlike character [that] will make a person truly a light to the world" (White, 1900, p. 51). White (1954)

has much to say about the call for educated young people to aim for the highest in all their work. Christian education has to educate students to be God's coworkers to carry the light around the world. Education has to enable students to be useful and qualified in all kinds of responsibilities, and also to be God's coworkers, which enable them to be sufficiently equipped for God's service.

Christian teachers have a significant dual role in leading students to be competent workers (White, 1900). They must be spiritual leaders, while at the same time they need to have a thorough knowledge of the sciences. This dual responsibility is not to be taken lightly.

According to White, teachers should not be satisfied with second-rate work from students, but they have to direct students to reach the highest standard which is possible for them to attain. Teachers must not only teach technical knowledge. They also have to teach principles that will help students be a positive force to improve society. They have to educate students to be individuals who are "strong to think and to act, men who are masters and not slaves of circumstance, men who possess breadth of mind, clearness of thought, and the courage of their convictions" (1954, p. 17).

Nursing students have a great need for this type of Christian grounding in their education, and they have frequent opportunities for sharing their faith in word and deed as they serve others. This study focuses on the type of support that will best produce clinical competence in nursing students. This competence, while mainly academic, also has a spiritual side to it, as students come into contact with patients and seek to meet their needs.

Method

This study assumes that theoretical comprehension and support of personnel in clinical areas are important factors in developing students' clinical competence. The purpose of the study was to investigate the relationships between students' theoretical comprehension, professional support from clinical instructors and staff nurses, peer support, and competence in clinical practices, and to find the best predictive model of nursing students' clinical competence based on the selected variables of the study.

This study used a descriptive-correlational design. It describes the level of 4th-year nursing students' theoretical comprehension, the respondents' perceptions of professional support from clinical instructors (teaching ability, professional competence, evaluation practices, interpersonal relationships, and personality traits), staff nurses as role models, and peers as collaborative support, as well as the level of nursing students' clinical competence.

Correlational methods were used to determine the relationships among the variables. These variables were (1) theoretical comprehension, (2) professional

support from clinical instructors, (3) professional support from staff nurses, (4) peer support, and (5) nursing students' clinical competence.

The target participants in this study were the 4th-year nursing students in three selected tertiary Adventist nursing colleges in the Philippines. Stratified random sampling procedures were employed to select a sample "in the same proportion as they exist in the population" (Fraenkel & Wallen, 2006, p. 96). The sample was chosen proportionately from each nursing college, and included 365 nursing students.

The instruments used in collecting data were the Nurse Clinical Teacher Effectiveness Inventory (Allison-Jones, 2002), the Staff Nurses Supportive Scale (self-constructed), and the Nursing Students' Peer Support Scale (adapted with permission from Stichler, 1989). These instruments measured the students' perceptions about the support they received in clinical area. They consisted of Likert-scale responses ranging from 1 (*never*), to 7 (*always*), and 2-6 (*between never and always*). Besides these instruments, data was gathered on students' grades. Their theory grade was used to measure nursing students' theoretical comprehension and the clinical grade was used to measure the students' clinical level of competence. The reliability of each instrument, as found in this study, is shown in Table 1.

Descriptive statistics including frequencies, percentage, means, and standard deviation were used to identify the level of theoretical comprehension; and the perception of students of the support from clinical instructors, staff nurses, peers, and nursing students' clinical competence. To find the relationship that occurred between the variables under study, bivariate correlations were used. Multiple regression analysis was used to determine the best predictor model of nursing students' clinical competence from the variables of the study.

There are a few limitations to the study that should be noted. Theoretical comprehension was measured using the final grade of each student. The students participating in this study are from three different colleges where each professor may have a different method of assessing for the final grade. Thus the grade classification of each student may not be the same across the board—i.e., an A for a student in one school means the same as an A for a student in another school, and so forth. However, this concern is minimized because all the participants come from Adventist institutions in the Philippines and there is some similarity in assessment as evidenced by all students doing their practicum at the same time, and the similarity of scores given across the three institutions. Students' intelligence could also have contributed to grade achieved.

Results

The mean and standard deviation were used to determine the level of support that students perceive to have received from clinical instructors, staff nurses, and their fellow students (see Table 2) while they were undergoing clinical practicum. From these three groups of support, it is clear that students perceived the most support in the clinical area from their peers.

Theory comprehension was measured by students' achievement in the form of their final grade in nursing theory for the first semester 2007-2008. The clinical competence was measured by the final clinical grade of related learning experiences for the first semester 2007-2008. The level of nursing students' theoretical comprehension was found to be between 84% and 85%, while the level of nursing students clinical competence was between 87% and 89%. The grading system used was A = 97-100%; A- = 93-96%; B+ = 89-92%; B = 85-88%; B- = 81-84%; C+ = 77-80%, and C = 75-76%. This means that the theoretical comprehension grades ranged between B and B-, while the grades of clinical competence ranged between B and B+.

Table 1
Instrument Reliability Scores

Scales	Reliability Value
Nursing clinical teacher effectiveness inventory	0.96
Staff nurses' supportive scales	0.97
Nursing students' peer supportive scale	0.96

Table 2
Level of Support from Clinical Instructors, Staff Nurses, and Peers

Group	<i>N</i>	<i>M</i>	<i>SD</i>
Clinical instructors	365	5.44	0.70
Staff nurses	365	5.19	1.02
Peers	365	6.19	0.71

Note. Continuum scales range from 1 (never), to 7 (always), and 2-6 (between never and always)

Finally, these results explained 26% (25% by theoretical comprehension and 1% by peer support) of the variance in clinical competency (see Figure 5). Therefore, 74% of the variance in the variance in clinical competency cannot be explained by these two variables suggesting that there must be some other variables not included in this study that affect clinical competency other than theoretical support and peer support.

Relationships Among the Study Variables

The relationships between the variables in this study were tested using Pearson Product Moment Correlation analysis. Table 3 presents the results of the correlation analysis. Nursing students' theoretical comprehension has a significant positive correlation with clinical competence ($r = 0.49, p < .001$). Though the correlation is not very strong, it could be inferred that the more comprehension students have in their nursing theory, the more competent they are in clinical practices. However, students' intelligence could also have contributed to this relationship.

Table 3

Relationships Among the Study Variables

	NSCC	NSTC	Staff nurses	Peers	CI support
NSCC	1	0.49**	-0.04	0.08	-0.04
NSTC		1	-0.23**	-0.02	-0.08
Staff nurses			1	0.39**	0.47**
Peers				1	0.49**
CI support					1

Note. NS CC = Nursing students' clinical competence, NSTC = Nursing students' theoretical comprehension, Staff nurses = Professional support from Staff nurses, Peers = Peer support, CI support = Professional support from clinical instructor,

* Correlation is significant at $p < .05$ (2-tailed), ** Correlation is significant at $p < .01$ (2-tailed). Values in the Table refer to correlation coefficients (r) where $r < 0.30$ is considered weak correlation, $r \geq 0.30$ but ≤ 0.50 is medium correlation, $r > 0.50$ is strong correlation.

Theoretical comprehension had a negative weak correlation with staff nurses' support ($r = -0.23, p < .001$). This means that the more students comprehend the theory, the less they perceived support from staff nurses. This suggests that staff nurses may "trust" students who they feel are knowledgeable to obtain direct practice on the patients independently or with less supervision. The privilege of having direct care of the patients was perceived by the students as less support from staff nurses.

The clinical instructors' support was moderately positively correlated with staff nurse support (see Table 3) with $p < .01$. This means that the greater the students' perception of the clinical instructors' support (teaching ability, professional competence, evaluation practice, interpersonal relationship, and personality traits), the more they also perceived support from staff nurses in the clinical setting. This may happen because staff nurses are the ones who have full responsibility for the patients' welfare while clinical instructors are expected to help and teach students to conduct safe practices on the patients; be a role model and provide competent guidance for the students in their practice of the profession; coach students through feedback and guidance in their clinical practices; build good relationship with students and staff nurses; and maintain good personality traits (Gaberson & Oerman, 1999).

The clinical instructors' support was also moderately positively correlated with peer support (see Table 3) with $p < .001$. This suggests that the better the teaching ability of the clinical instructors, the more they facilitated students' support of each other; the more the students perceived support from clinical instructors' professional competence, the more the students perceived help from their peers. This also indicates that the more fair, objective, and transparent clinical instructors are in their evaluation practice, the more help students give to each other to meet the objectives and criteria mentioned by the clinical instructors. This also implies that the higher the skills of clinical instructors in building relationships to support students in the clinical area, the better the students' perception of support from their fellow students; and the better the clinical instructors' personality traits, the better the students support each other. The good attributes of clinical instructors in the clinical area could inspire students to be kind to one another. This finding is in harmony with White's (1893) opinion that good traits of teachers influence students in a positive way inspiring students to do good to one another.

The staff nurses' support variable also has a positive medium correlation with peer support ($r = 0.39, p < .01$). This means, that the more the students perceived support from staff nurses, the more they perceived support from their peers. This may happen because of the role model of staff nurses to the students, which inspired them to do good also to one another.

Stepwise multiple regression analysis was used to determine which of the potential predictors taken from the variables under study significantly predicted nursing students' clinical competence. These variables were theoretical comprehension, professional support from clinical instructors, professional support from staff nurses, and peer support. Only two of these variables were significant predictors: theoretical comprehension, and peer support (see Figure 1).

The ANOVA tested whether the model is good at predicting the outcome. The final F-ratio was 43.54 with $p < .001$. This shows that the model can predict the outcome. The B values, 0.39 and 0.31, explain the relationship between nursing students' clinical competence to each predictor, implying that nursing students' theoretical comprehension ($\beta = 0.50$, $\Delta R^2 = 25\%$) and peer support ($\beta = 0.10$, $\Delta R^2 = 1\%$) were positive predictors. The total variance accounted for by these two predictors was 26% of the total variance in clinical competence (see Table 4). Most of this was accounted for by nursing students' theoretical comprehension (25%), while peer support accounted for only 1% of the total variance. Since only 26% of the total variance was accounted for by these three variables, several other factors that have not been included in the prediction equation may contribute to the nursing students' clinical competence.

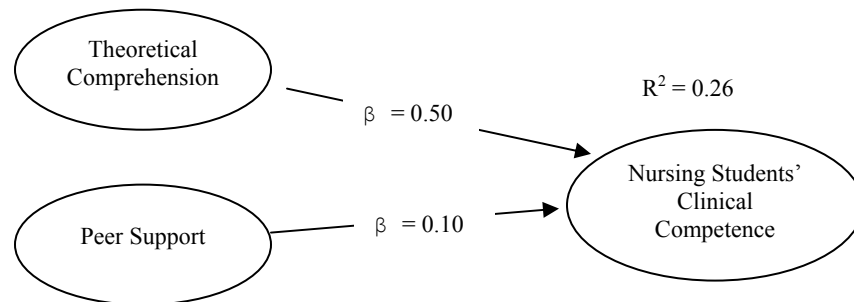


Figure 1. Predictive model of nursing students' clinical competence.

Table 4
Predictors of Clinical Competence

Variable	<i>B</i>	<i>SE B</i>	β	ΔR^2
NSTC	0.39	0.04	0.50*	0.25
Peer support	0.31	0.15	0.10**	0.01
R^2 Total =				0.26

Note. * $p < 0.001$, ** $p < 0.05$, *SE B* = Standard Error of *B*, NSTC = Nursing students' theoretical comprehension, VP = Vocational personality.

One finding of this study shows that nursing students' theoretical comprehension is the most important predictor of nursing students' clinical competence. Clinical practices give opportunity for the students to apply theory into practice. It is important to prepare students with a good foundation in theory before they enter the clinical area. Good theoretical comprehension makes them ready to face various clinical conditions beforehand (Gaberson & Oermann, 1999).

In the clinical area, students support one another through genuine ways in various clinical activities. They learn, help, and support each other to be competent in the profession. Although peer support was a significant predictor of clinical competence, its contribution to explaining the total variance was small and its predictive coefficient one fifth of the standardized equation.

Discussion

The findings of this study show that nursing students' clinical competence was correlated with nursing students' theoretical comprehension. This may be because students' professional conduct in the clinical setting is based on their theoretical comprehension in nursing. With better comprehension of nursing theory, students are able to identify, describe, and professionally predict the various clinical situations in the clinical area. They are also able to base every step of the nursing process in their clinical practice on the scientific approach and empirical evidence.

It was found that the best predictor of nursing students' clinical competence is theoretical comprehension. This means that the more the students comprehend the theory, the more competent they become in clinical practice. Besides correlating with nursing students' clinical competence, nursing students' theoretical comprehension also correlated with staff nurses' support. Therefore, it is important for nursing educators to ensure that students have the necessary theoretical background before they enter the clinical area. The rationale for

students' professional conduct is based on theoretical comprehension. Students with adequate theory may be able to face various clinical conditions, make critical judgment properly, and be able to deliver quality nursing care to patients.

Clinical instructors are key support for nursing students in the clinical area. Based on this belief, it was thought that clinical instructors have strong support and strong relationships with nursing students' clinical competence. The findings of this study show that this is not true. The professional support by clinical instructors did not significantly correlate with nursing students' clinical grade or theoretical grade.. This calls for clinical instructors to improve their performance in assisting students in the clinical areas.

A positive medium correlation was found between the support of clinical instructors, staff nurses, and peers. This is contrary to the earlier belief that clinical instructors' support does not have any relationship with staff nurses and peer support. It seems that all personnel in the clinical area cooperate with each other. However, clinical instructors, as the bridge between the nursing school and the health care agency, have built a healthy relationship with staff nurses, which could impact the willingness of the staff nurses to help students in clinical practice. But this study did not show that they have any measurable impact on the clinical competence of the nursing students.

Staff nurses can formally or informally support students in clinical practice. As role models, staff nurses can help students learn appropriate practices of the profession. In this study, though students perceived good support from staff nurses, the support was not optimal. It was also found that staff nurses' support did not have any relationship with nursing students' clinical competence. This result may be due to the aggregate rating of all the staff nurses' support by the students. It is likely that the finding may have been different if the staff nurses were rated individually. The other possibility might be that the staff nurses did not have a clear picture of the 4th-year nursing program curriculum. Thus, might not have provided support as expected for the 4th-year nursing students.

The peer support in various clinical activities helps students to become clinically competent. Students in clinical practice realize the need to support, help, and depend on one another to develop their professional skills. The study supports this proposition. The nursing students perceived strong support from their peers. However, using Pearson product moment correlation, it was found that peer support did not correlate with nursing students' clinical competence. However, multiple regression analysis shows that peer support was a predictor of nursing students' clinical competence, though the contribution to the model is only 1%.

The result of this study showed that theory comprehension was a significant predictor for nursing students' clinical competence. The professional support from clinical instructors and staff nurses, and peer support did not seem to have

a significant relationship or act as predictors of nursing students' clinical competence. This means that students' effort to understand the theory as the basis for nursing students' professional conduct contributed more to their clinical competence than the external support. Though it may be appreciated, the external support that comes from clinical instructors, staff nurses, and peers does not seem to play a significant role in predicting nursing students' actual clinical competence.

Recommendations

In relation to the results of the study, the following recommendations are brought forward for implementation by nursing education, staff nurses, nursing students, and future researchers.

1. Evaluate the instructional and teaching strategies of the faculty and clinical instructors, and create strategies to enhance faculty and clinical instructors' practices in order to improve the results of nursing students' clinical competence and nursing students' theoretical comprehension. Emphasize students' theoretical knowledge before students enter the clinical area. Occupying students with cognitive, psychomotor, and affective preparation before students enter clinical practices will help students have a strong basis to conduct nursing professional practice.
2. Communicate curriculum, objectives, and instruction for nursing students' clinical practice to staff nurses in order for staff nurses to give better support to the nursing students in the clinical area. This includes helping students link theory with practice, explaining patients' treatments, care, needs, and conditions, and helping students solve problems in the clinical area.
3. Maintain and develop genuine support among fellow students. This was shown to be very important in students' minds, even if it did not measurably change clinical competence.

Further research could be conducted to investigate additional factors to explain nursing students' clinical competence. Factors that could be studied include the quality of nursing theory being taught by teachers, students' preparedness before they enter the clinical area, students' effort and interest in learning various nursing skills and procedures, and the facilities of the nursing schools and health care agencies where students conduct their practices. A mixed-methods design could also collect more personal, deeper explanations of the complex interactions involved in the students' clinical practice that influence nursing students' clinical competence.

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