

**DIFFERENTIAL EFFECTS OF VIDEO ASSISTED LECTURE
AND DIDACTIC LECTURE ON ACCURACY OF NURSING
DIAGNOSIS, SATISFACTION, SELF-CONFIDENCE AND
SIMULATION DESIGN AMONG NURSING STUDENTS**

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**OPEN UNIVERSITY MALAYSIA
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AMONG NURSING STUDENTS**

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the degree of Doctor of Education

Cluster of Education and Social Sciences
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2019

DECLARATION

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I hereby declare that this dissertation is the result of my own work, except for quotations and summaries which have been duly acknowledged.

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ABSTRACT

The teaching of nursing process is inclusive of formulation of nursing diagnosis. Accurate formulation of nursing diagnosis is crucial to guide the nursing care for patients. Despite its importance, good formulation of nursing diagnosis is still deficient competency among nurses. The aim of this study was to examine the differential effects of video assisted lecture (VAL) and didactic lecture (DL) on accurate formulation of nursing diagnosis for medical and surgical scenarios among nursing students. Subsequent to this, students' satisfaction, self-confidence and simulation design were also investigated. This experimental study employed After-Only design. Nursing students were randomly assigned to two groups either video assisted lecture group ($n = 33$) or didactic lecture group ($n = 33$). The research tools used in this study were D-Catch Guide for Diagnoses and National League Nursing questionnaire. Analyses were conducted using Mann-Whitney U test, Wilcoxon Paired Signed-Ranks test and independent t test. The mean scores differences for accuracy of nursing diagnosis were higher for Post Test 1 and Post Test 2 with VAL for both medical and surgical scenarios compared to DL scores. However, there were no significant differences in accuracy of nursing diagnosis between VAL and DL for the Post Test 1 ($p = .182$) and Post Test 2 ($p = .090$) for medical scenario and Post Test 2 for surgical scenario, ($p = .131$). In addition, there was a significant difference in accuracy of nursing diagnosis between VAL and DL for the Post Test 1 ($p = .001$) for surgical scenario. The Wilcoxon Paired Signed-Ranks test within VAL for the accuracy of nursing diagnosis in medical scenario showed no significant difference ($p = .102$). But, there was a significant difference within VAL for accuracy of nursing diagnosis in surgical scenario ($p = .001$). In addition, the Wilcoxon Paired Signed-Ranks test within DL for the accuracy of nursing diagnosis in medical scenario showed no significant difference ($p = .014$). However, there was a significant difference within DL for accuracy of nursing diagnosis in surgical scenario ($p = .001$). Overall, the VAL revealed higher mean scores than DL for satisfaction, self-confidence and simulation design. But, there were no significant differences in satisfaction ($p = .180$), self-confidence ($p = .586$) and simulation design ($p = .519$) between VAL and DL. In conclusion, both the VAL and DL are apparently effective for teaching the subject on nursing diagnosis. The satisfaction, self-confidence and simulation design from both the teaching methods were the same for the nursing students. Thus, it implies that simulation such as video can be embedded with teaching for nursing diagnosis.

Keywords: video assisted lecture, didactic lecture, nursing diagnosis, satisfaction, self-confidence, simulation design

KESAN PERBEZAAN SYARAHAN DENGAN BANTUAN VIDEO DAN SYARAHAN DIDAKTIK UNTUK MERUMUS DIAGNOSA KEJURURAWATAN YANG TEPAT, KEPUASAN, KEYAKINAN DIRI DAN REKABENTUK SIMULASI DALAM KALANGAN PELAJAR KEJURURAWATAN

JAYAH K. PUBALAN

ABSTRAK

Pengajaran proses kejururawatan termasuklah perumusan diagnosis kejururawatan. Perumusan diagnosis keperawatan yang tepat adalah penting untuk membantu penjagaan perawatan bagi pesakit. Meskipun ia penting, perumusan diagnosis kejururawatan yang baik masih kurang kompetensi dalam kalangan jururawat. Tujuan kajian ini adalah untuk mengkaji kesan pembezaan syarahan bantuan video (*VAL*) dan syarahan didaktik (*DL*) terhadap rumusan diagnosis kejururawatan yang tepat untuk senario perubatan dan pembedahan di kalangan pelajar kejururawatan. Selanjutnya, kepuasan, keyakinan diri dan reka bentuk simulasi pelajar juga disiasat. Kajian eksperimen ini menggunakan reka bentuk *After-Only*. Pelajar kejururawatan secara rawak diagihkan kepada dua kumpulan sama ada kumpulan syarahan dibantu video ($n=33$) atau kumpulan syarahan didaktik ($n=33$). Alat penyelidikan yang digunakan dalam kajian ini adalah soal selidik *D-Catch Guide for Diagnoses* dan *National Nursing Questionnaire*. Analisis dilakukan dengan menggunakan *Mann-Whitney U test*, *Wilcoxon Paired Signed-Ranks test* and *independent t test*. Markah purata bagi ketepatan diagnosis kejururawatan adalah lebih tinggi untuk Ujian Pos 1 dan Ujian Pos 2 dengan *VAL* untuk kedua-dua senario perubatan dan pembedahan berbanding skor *DL*. Walau bagaimanapun, tidak terdapat perbezaan ketara dalam ketepatan diagnosis kejururawatan antara *VAL* dan *DL* untuk Ujian Pos 1 ($p = .182$) dan Ujian Pos 2 ($p = .090$) untuk senario perubatan dan Ujian Pos 2 untuk senario pembedahan, ($p = .131$). Di samping itu, terdapat perbezaan ketara dalam diagnosis kejururawatan antara *VAL* dan *DL* untuk Ujian Pos 1 ($p = .001$) untuk senario pembedahan. *Wilcoxon Paired Signed-Ranks test* dalam *VAL* untuk ketepatan diagnosis kejururawatan dalam senario perubatan tidak menunjukkan perbezaan yang signifikan ($p = .102$). Tetapi, terdapat perbezaan yang signifikan dalam *VAL* untuk ketepatan diagnosis kejururawatan dalam senario pembedahan ($p = .001$). Di samping itu, ujian *Wilcoxon Paired Signed-Ranks test* dalam *DL* untuk ketepatan diagnosis kejururawatan dalam senario perubatan tidak menunjukkan perbezaan yang signifikan ($p = .014$). Walau bagaimanapun, terdapat perbezaan yang signifikan dalam *DL* untuk ketepatan diagnosis kejururawatan dalam senario pembedahan ($p = .001$). Secara keseluruhan, *VAL* mendedahkan skor purata yang lebih tinggi daripada *DL* untuk kepuasan, reka bentuk diri dan reka bentuk simulasi. Tetapi, tidak ada perbezaan yang signifikan dalam kepuasan ($p = .180$), keyakinan diri ($p = .586$) dan reka bentuk simulasi ($p = .519$) antara *VAL* dan *DL*. Sebagai kesimpulan, kedua *VAL* dan *DL* nampaknya berkesan untuk mengajar subjek mengenai diagnosis kejururawatan. kepuasan, keyakinan diri dan reka bentuk simulasi daripada kedua kaedah pengajaran adalah sama untuk pelajar kejururawatan. Oleh itu, kajian ini merumuskan bahawa simulasi seperti video boleh dimasukkan dalam pengajaran untuk diagnosis kejururawatan.

Kata Kunci: syarahan dengan bantuan video, syarahan didaktik, diagnosa kejururawatan, kepuasan, keyakinan diri, design simulasi

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LIST OF ABBREVIATIONS

VAL Video Assisted Lecture

DL Didactic Lecture

NLN National League Nursing

CHAPTER 1

INTRODUCTION

1.1 Introduction

One of the most important topics in the nursing curriculum is the nursing diagnosis. This nursing diagnosis is actually one of the pivotal components in the nursing process. The nursing diagnosis is the basis for planning, intervention and evaluation of judgments about patients' problems. Moreover, the NANDA-I (formerly the North American Nursing Diagnosis Association) classification or taxonomy of nursing diagnosis is equivalent of the International Classification of Diseases (Lunney, 2008). Hence, nursing diagnosis using NANDA-I format has been up taken in the nursing curriculum globally. Furthermore, the development of the nursing diagnosis features the nurses' unique contribution to nursing care and forms scientific basis for the nursing practice as an established terminology.

Thus, the nursing diagnosis helps nurses make correct decisions for their patients' care plan. In addition, Mynarikova and Ziakova (2014), pointed the several importance of nursing diagnosis such as supporting nurses' professional responsibility as an independent activities in nursing practice. Next, it also enhances effective and feasible financial planning of performance of nursing activities and improving the efficacy of mutual communication between nurses with other healthcare professionals. Finally, nursing diagnosis being taught in nursing education to gain the impact upon

familiarization with the established nursing diagnosis terminologies. In this regard, the nursing diagnosis apparently is crucial in nursing profession.

At this juncture, the importance of disseminating a strong foundation on this nursing diagnosis depends in the hands of the nurse educators. Hence, the nurse educators must be well versed in many areas of simulation as to use them for training nursing students. Nurse educators are encouraged to use diversify teaching methods in light of preparing and producing nursing students who are knowledgeable, efficient and competent in patient care (Jeffries, 2005).

Thus, nursing has grown to use simulation as a tool for teaching and learning as an integral part of nursing education. Nevertheless, simulation prepares nursing students for the real-life experience before attempting on real patients in the wards. These simulation methods were used to address patient care in terms of nursing care and cultural diversity. But to the researcher's knowledge and extensive literature searches, none of the methods were used to simulate on formulating the nursing diagnosis for the patients nursing care plan.

It is very important for the nurse educators to plan and determine the type of teaching approach to novice nursing students. Apparently, the nursing students' satisfaction with simulation regardless of the method used do contribute valuable information in the pedagogy of nursing education. There was no documented article relating satisfaction, video-clips and formulation of the nursing diagnosis. Thus, the

satisfaction level on this new approach of learning style in this research is worth to explore among the nursing students.

On the other hand, self-confidence is an important issue for both nursing students and professional nurses besides attaining knowledge, attitude and effective skills. White (2009) stated it was a must to achieve self-confidence among nurses as to allow more autonomous practice to be built and benefit to patient care. At this juncture, since nursing is a service providing profession, the end users of our services must feel safe and reassured. Therefore, nursing students' self-confidence in clinical environment must be built by the nursing faculty for better patient outcomes. In fact, other studies have shown there were an increased in self-confidence among nursing students with simulation strategies for clinical skills (McConville & Lane, 2006; Sinclair & Ferguson, 2009; Majeed, 2014). However, no documentation found on the study that used video simulation that can actively enhanced self-confidence from the students' perspective of clinical practice such as formulating the nursing diagnosis.

This chapter presents an approach to address the background of this study, nursing process, nursing diagnoses, simulation in nursing, satisfaction with simulation, and self-confidence with simulation. Furthermore, problem statement of the study, the research objectives, research questions, research null hypothesis, significance of the study, and operational definitions are discussed.

1.2 Background to the Study

Nursing education emphasizes safe, competent and quality nursing care for the patients. In light to this issue, a combination of basic sciences, nursing foundation and other medical-surgical courses are integrated in the nursing curriculum. Nursing diagnosis being one of the most important contents in the nursing curriculum allows all nurses to communicate to others with its powerful and precise terminology which highlights its unique contribution of nursing to global health (Herdman & Kamitsuru, 2014). The nursing diagnosis is defined as a clinical judgment concerning a human response to health conditions/life processes, or vulnerability for that response, by an individual, family, group, or community (NANDA-I, 2008).

Apparently, it has been over 40 years that nursing diagnosis has inspired and encouraged nurses globally who seek independent practice based upon professional knowledge (Herdman & Kamitsuru, 2014). Nursing diagnosis allows nursing students acquire a unique body of knowledge, and enable them to document a holistic scope of practice. According to Muller-Staub et al. (2008) nursing diagnoses are useful to improve the quality of assessment document which include the description of patients' problems, their etiologies and the planning of diagnostic-specific procedures to care. Lee and Brysiewicz (2009) remarked that the process of formulating a nursing diagnosis is a critical step features the nurses' unique contribution to the nursing care and the scientific basis for nursing practice.

Nevertheless, the uniqueness in nursing is the utilization of the nursing process for the care of the patients. The nursing process as a subject is introduced to the nursing students in their first year of their study. This is because the knowledge gained from the nursing process will be utilized in the subsequent semesters to plan their patients' nursing care plan. Quality patient care in health care delivery settings depends on nurses' ability to develop a comprehensive plan of care (Herdman, 2008).

Teaching the nursing process is inclusive of using the nursing diagnosis for students' practice in nursing education. Although the nursing diagnosis is the second step of the nursing process, it is often used to plan the patient's care. If nursing diagnoses are misunderstood or misused, the quality of this care could potentially suffer (Halverson et al., 2011). In so far, the practice of nursing diagnosis in the care plan has been incorporated into nursing curricula to stimulate students' diagnostic reasoning process. Furthermore, nursing diagnosis is one of the nursing standardized language to the enhancement of nursing documentation (NANDA-I, 2008).

Moreover, a nursing diagnosis provides the basis for selection of nursing interventions to achieve outcomes for which the nurse is accountable. Nurses in daily hospital practice must ensure that it is vital to identify accurately patients' nursing diagnosis in order to execute optimal patient safety and continuous care (Paans, Nieweg, Schans & Sermeus, 2011). Hence, nursing students are mandatory to write care plans for their assigned patients as their academic exercise. Apparently, when

nurses use theory and theory-based evidence to structure their nursing care, it improves the quality of care for their patients (Ackley, Ladwig & Makic, 2016).

Nursing students are obligatory to document their assessment and observations in the standard care plan of their patients. Thus, a standardized care plan is a description of the nursing care to be provided for a patient, a family or a group (Carpenito-Moyet, 2010). In so far, the most influential changes per se in nursing is the introduction of standardized nursing language documentation such as nursing process. This document described standardized care plan inclusive of a diagnostic cluster, nursing diagnosis, collaborative problems and interventions (Dahm & Wadensten, 2008).

Moreover, according to Laukvik, Molstad and Fossum (2015) much focus was emphasized on nursing documentation since the focus on quality and safe health care services being enhanced timely. Ultimately, it is very crucial input for promoting a common understanding and continuity of care (Florin, Ehrenberg & Ehnfors, 2005). In fact the demands for nursing documents developed gradually to address quality and safety in health care system. Any inaccurate nursing diagnosis for a patient can lead to adverse actions to the quality of care (Jensen, da Cruz, Gomes & Lopes, 2013).

Similarly, Lee, Chan and Philip (2006) agreed that effective and efficient diagnostic skills are vital to provide high quality nursing care. Hence, in nursing profession it is a concern for skilled diagnostic practice among nurses. Moreover, this skilled practice is instilled in nursing courses whereby nurse educators must ensure to

educate nursing students are well trained to articulate diagnostic practice in nursing care for patients. According to Muller-Staub, Needham, Odenbreit, Lavin and Van Achterberg (2007) nursing diagnosis are useful to improve the quality of assessment document which include the description of patient problems, their etiology and the planning of diagnostic-specific procedures to care.

In health care practices, communication plays an important role delivery of quality care. Thus, nursing profession employs substantial verbal and non-verbal communication in their routine care. In so far, nurses report and record the process of continuity and sharing of information as required by policy of that institution. In line with this thought, Ofi and Sowunni (2012) state that nurses being the coordinating members of health care team must ensure effective documentation for their patients. Thus, nursing documentation as evidence of care delivered can be in the standard format and language documentation. At this juncture, the nursing diagnosis, as standardized nursing language over the years has been documented in charts and electronic gadgets. Goes, Fonseca, Furtado, Leite and Scochi (2011) concluded that on the practice of formulating nursing diagnosis coupled with simulation technology has a prominent role in the qualification of professional nurses.

Lunney (1992) stated accuracy of nursing diagnosis is correlated with fluency, flexibility and elaboration of nurses in nursing education and practice. Fluency is the ability to rapidly interpret the complexity of patient scenario. Flexibility referred to the ability of nurses to shift thinking in considering categories of nursing diagnosis.

Elaboration is the ability to consider many information from memory related to the data that are given to formulate accurate nursing diagnosis. Thus, the importance of nursing diagnosis is strongly advocated; since it is only through a standardized nursing terminology which can assist common understanding and continuity of care for patients (Gallagher-Lepak, 2014). Therefore, the five steps in nursing process is dynamic that requires creativity in its application for patients care plan which remain same throughout, but the application and results differ for each individual patient (Herdman & Kamitsuru, 2014). Moreover, it is applicable throughout the life span of a patient's in any healthcare setting anywhere and exist for the past 30 years in the nursing profession (Herdman & Kamitsuru, 2014).

Subsequently, the nursing diagnosis is included in the second step of the nursing process. It is a clinical judgment about individual, family or community responses to actual or potential health problems/life processes (Herdman & Kamitsuru, 2014). Furthermore, a nursing diagnosis provides the basis for selection of nursing interventions to achieve outcomes for which the nurse is accountable. Nursing professionals in daily hospital practice must ensure it is vital to document accurately clients' nursing diagnosis in order to execute optimal patient safety and continuous care (Paans et al., 2011).

Prior to teaching the nursing diagnosis, the assessment being the first part of the nursing process is taught to nursing students. Assessment and clinical judgments are useful to formulate explanations about the presenting actual or potential nursing

diagnosis (Herdman & Kamitsuru, 2014). Key issues and cues evident in the assessment of the patient allow the nursing students to begin the diagnostic process. This process usually involved lecturing the contents on nursing diagnosis followed by exercises on patient case scenarios. These patients' case scenarios are common health conditions and diseases among patients admitted to the hospital. The nursing students are required to identify the cues and problems of the patient to formulate accurate nursing diagnosis.

1.2.1 Nursing Process

The nursing process was introduced by Hall (1955), Johnson (1959), Orlando (1961) and Wiedenbach (1963) consecutively (Berman, Synder, Kozier & Erb, 2008). The purpose of nursing process is to identify a patient's health in actual or potential status/problems; to establish plans to meet the identified needs and to deliver specific nursing interventions to meet those needs. The nursing process involved five-step process: assessment, diagnosing, planning, intervention and evaluation. Each step is interrelated thus if inadequate data obtained during the initial stage will lead to incorrect nursing diagnosis in the second step (Ackley & Ladwig, 2014). Hence, subsequently inaccuracy will be reflected in the planning, implementing and evaluating steps.

In the first step of nursing process, the nursing students need to perform assessment which inclusive of history of past and present health status; objective and subjective data from the patient. Subsequently, in the second step these information can help nursing students to diagnose an accurate nursing diagnosis for the patient

concerned. While in the third step of planning, nursing students can write outcome/goal statements, determine appropriate nursing interventions and the evaluation. The nursing process care plan is taken to action in the fourth step of implementation for the individual patient. The final step of evaluation is to determine the outcomes whether need to revise or not. In case if the outcomes are not suitable and feasible, then the whole process of nursing process will be repeated and especially identify new nursing diagnosis.

Brysiewicz and Lee (2009) remarked that the process of formulating a nursing diagnosis is a critical step in the nursing process. The nursing process is an essential part of planning care for the patient as well as a systematic process for documentation. Henceforth, students need to use their critical thinking to assess their patients and identify the patient's problems/needs. Thus this step enables students to formulate the correct nursing diagnosis for their patient at that particular time. In a nutshell, the nursing diagnosis which was identified and formulated is very individualized, informative and continuous for a patient.

1.2.2 Nursing Diagnoses

The nursing diagnosis is described as the clinical judgment about individual, family, or community responses to actual or potential health problems (Berman et al., 2008). Hence, nursing diagnosis are useful to improve the quality of assessment document which include the description of patient problems, their aetiology and the planning of diagnostic-specific procedures to care (Muller-Staub et al., 2008). Since the nursing diagnosis is the basis for planning, intervention and evaluation of judgments

about patient problems, it is crucial to have accurate nursing diagnosis for each patient (Lunney, 2008).

Therefore, nursing diagnosis has to be formulated accurately by using the standardized nursing format using the North American Nursing Diagnosis Association International [NANDA-I], NANDA-I (2005). Apparently NANDA-I will revise the list of nursing diagnosis every two years either adding new nursing diagnosis or removing some earlier nursing diagnosis. For instance the list of nursing diagnosis for 2015 to 2017 were 13 domains and 30 classes (Herdman & Kamitsuru, 2014). The recent list of nursing diagnosis for 2018 to 2020 has introduced 17 new nursing diagnosis and removed eight nursing diagnosis in the 13 domains and 30 classes (Herdman & Kamitsuru, 2018).

When a patient is seen by the doctor and warded for further investigation and management, she/he will be admitted to the appropriate wards. Thus, it is then the duty of the nurses to engage their empowerment to take care of the patient. The nurses are responsible to identify and formulate the nursing diagnosis which is the descriptions of the patients' care needs (Gallagher-Lepak, 2014). At this juncture, the nursing diagnosis describes patient reactions related to health problems, which nurses address (e.g. impaired breathing pattern, fluid volume deficit, and pain or self-care deficit). And for instances the nursing interventions are nursing treatments (e.g. give oxygen therapy, intravenous fluid management, give pain relieve medication or bathing). Whereas the nursing outcomes describe effects of the care given (e.g. breathing pattern normal, fluid balanced, pain relief after pain management, or comfortable after bathing).

Nursing diagnosis is taught in the nursing curriculum whereby it is incorporated in the nursing process content. Didactic teaching on nursing diagnosis among nursing students usually involved the usual introduction to nursing process to the first year nursing students. The lecture will be assisted by patient scenario which highlights patients' clinical manifestations. The students are then guided by the lecturer to identify the accurate nursing diagnosis and formulate accordingly to NANDA-I format. In so far, it is important as the nursing diagnosis formula is used to identify a complex issue which involves investigating the problem aetiology and the clinical manifestation of the patient (Hidayat, 2015).

1.2.3 Simulation in Nursing

Nurse educators are encouraged to use diversify teaching method in light of preparing and producing nursing students who are knowledgeable, efficient and competent in patient care (Jeffries, 2005). Thus, nursing profession has grown to use simulation as a tool for teaching and learning as an integral part of nursing education. Apparently, simulation improves nursing knowledge, clinical practice, critical thinking, communication skills, self-confidence and satisfaction (Omer, 2016). Preparing nursing students adequately for the transition into the health care system requires a key component of simulation-based learning (Norman, 2012). Nevertheless, simulation prepares nursing students for the real-life experience before attempting on real patients in the wards. Hence, as educators must be well versed in many areas of simulation as to use them for training nursing students.

Researchers indicated that nursing students who participated in virtual scenarios were able to demonstrate significantly better performance in a subsequent high-fidelity mannequin-based simulation when compared to students who only received the usual education (Tschannen, Aebersold, McLaughlin, Bowen & Fairchild, 2012). A variety of simulation methodologies can be used for education and training of practicing nurses such as the low, mid and high fidelity mannequins, virtual environments, and unfolding video case simulations (Aebersold & Tschannen, 2013). The high-fidelity simulations are simulations that utilize computerized manikins. Whereas the mid-fidelity simulations are simulations that utilize standardized patients, computer programs or video. Then the low-fidelity simulations are simulations that use role play, non-computerized manikins or task-trainers.

The task-trainer simulators that are used to practice skills such as an intravenous arm that is used to practice intravenous insertions skills, and in-situ simulation refers to bringing the simulation (and simulator) to the site where the learner is practicing. Hence, simulation has demonstrated effectiveness as a method to train nursing students for new procedures, communication processes, and both skill-based and non-skill based techniques (Sharpnack & Madigan, 2012). Moreover, in recent review by Mohsen and Najmeh (2017) found that a various type of simulations were used on nursing students in the 16 studies identified that ranged from 11 studies using high fidelity simulation, three using standardized patients, one for video stimulation and one for electronic interactive simulation. These simulation methods were used to address patient care in terms of nursing care and cultural diversity. For instance, any nursing procedures which

require competency before attempt to real patient such as insertion of nasogastric tube, urinary catheter or bed bath. But none of the simulation was used to formulate the nursing diagnosis for the patients nursing care plan.

In line with this thought, the use of simulation in teaching and learning not only subjected to nursing education but also seen in other disciplines. The faculty or school of medicine is also evolving their techniques in teaching the medical undergraduate or even the post graduate students. Medical students are trained with simulated scenarios in order to learn medical skills. One recent study by Rayner (2015) explored the relationship between responses to imitation assessment and video-based intervention in children with autism. The results revealed that participants who were assessed to have strong imitation skills were also those who responded more positively to video-based intervention.

On the other hand computer-assisted instruction and interactive video have been employed in many fields as a training tool. Pilots and astronauts are trained on simulators before they ever fly the real thing to ensure they are competent and skilful. The use of simulation as an instructional strategy in a highly theoretical aeronautical science aerodynamics course was examined by Rigby (2015). The results of this study demonstrated that the use of simulation as an instructional strategy improved student performance in specific instructional objectives.

Peterson, Cavazos and Harvison (2014) explored the use of simulation in occupational therapy education such as video cases which showed that there was an

increased critical reasoning, problem solving and decision making, and communication among students. Moreover educational researches have demonstrated the efficacy of interactive video as a training strategy, and some educators have even asserted that interactive tutorials are superior to didactic classroom instruction when it comes to teaching basic skills (Jeffries, 2014).

Solyomos, OKelly and Walshe (2015) reported their pilot study comparing simulation-based and didactic lecture-based critical care teaching for final-year medical students. Their findings supported that simulation was perceived as more enjoyable by students and there was a greater improvement in post-teaching MCQ among the simulator group, but the baseline scores were higher among didactic group. Similarly, Kalwitzki, Meller and Beyer (2011) found the video has been beneficial for teaching in dentistry for a wide range of areas, including training in mechanical skills and simulation of clinical situations. In this study, students perceived differences between video-based teaching and lecturing regarding ease of use, but they did not seem to benefit from one method over the other regarding clinical application.

According to Brown, Wickline, Ecoff and Glaser (2009) the video as a tool for presenting simulations has been used in three broad categories: as a substitute for live instruction, as an adjunct to other teaching methods, and as a means for providing skills training to healthcare professionals. Virtual simulations have been incorporated into nursing education to provide students with experiences which they may not be exposed to in actual clinical settings (Jeffries, 2005). In this regard, Campbell and Daley (2013)

supported that in the 21st century nursing education must support the simulation focused pedagogy, because it offers innovative approaches which integrate and complement the requirement of a new generation of nursing students.

Harder (2010) found in his systemic review that many of the studies which used simulation as a mean for teaching when compared to other teaching methods, had improved health care students skills. Simulation can be an effective teaching method to facilitate health care students where certain important nursing skills are necessary for optimal and safe patient care (Aebersold, Tschannen & Bathish, 2012). Sanford (2010) pointed that simulation in education has been used at least since the time of World War II in the form of static manikins, role playing, CPR manikins, and other low fidelity techniques. But the high-fidelity simulation is a relatively new area in nursing education and utilizes high technology simulation gadgets. This technology offers new avenues for teaching student nurses scenarios as well as critical thinking and reflection on lived experience and practice.

Lee, Eom and Lee (2007) described simulation in nursing education is very much advocated to develop competencies in nursing process, nursing skills and therapeutic communication skills. Likewise Bambini, Washburn and Perkins (2009) stated the use of clinical simulation in nursing education provides many opportunities for students to learn and apply theoretical principles of nursing care in a safe environment. Hence, simulation-based learning is an educational intervention which creates an environment that is conducive to experiential learning.

Cant and Cooper (2010) systematic review in simulation-based learning in nurse education of quantitative studies published between 1999 and January 2009 reported simulation as a valid teaching/learning strategy. Simulation using medium and/or high fidelity manikins is an effective teaching and learning method and it may have some advantage over other teaching methods, depending on the context, topic and method. This finding was consistent with Norman (2012) systematic review which examined literatures on simulation outcomes in nursing education from the years 2000-2010. The literatures were categorized into three themes; internal outcomes, external outcomes, and clinical evaluation. The available literatures on simulation and nursing education provided evidence that the simulation is useful in creating a learning environment which contributes to knowledge, skills, safety, and confidence.

Furthermore, Neill and Wotton (2011) reported high-fidelity simulation, in which students engage in clinical scenarios replicating actual clinical situations, currently was well integrated into nursing education. Experiential learning philosophy underlies simulation education, in which students are able to develop and refine knowledge. For instance simulation debriefing guides students through a reflection on what occurred during a simulation scenario, with the goal of developing the knowledge, skills, and rationales underpinning clinical practice. In the same vein, other study have described that simulation has emerged as a valued pedagogy of students and faculty and has gained acceptance by accrediting bodies and professional organizations throughout healthcare (Foronda, Liu & Bauman, 2013). In addition simulation as a mechanism for

clinical education was reported to increase confidence and satisfaction among nursing students.

A recent review by Shin, Park and Kim (2015) was done on the effectiveness of patient simulation in nursing education found significant post-intervention improvements in various domains for participants who received simulation education compared to the control groups. These results indicated that simulation education demonstrated medium to large effect sizes and could guide nurse educators with regard to the conditions under which patient simulation was more effective than traditional learning methods. This finding supported a study by Faulcon (2015) indicating nursing education patient simulation was used as an innovative teaching method to reinforce healthcare concepts and adaptation to technology.

Cant and Cooper (2014) found that literature review on utilization and place of web-based simulation within nursing education was highly acceptable to students and appears to provide learning benefits that align with other simulation approaches and it augments face-to-face teaching. Students' participation in simulation learning is to enhance their understanding and apply their cognitive or psychomotor skills in their future profession. That is the reason simulation is being adopted as an increasingly common educational strategy in nursing education worldwide. According to Starkweather and Kardong-Edgren (2008) simulation provided a way to increase safety and decrease errors, improve clinical judgment, and is useful for teaching and evaluating specific clinical skills.

Simulation methodology in nursing education currently gains much popularity. This is because with simulation the nursing students are able to practice a variety of skills, implement knowledge and decision making without the fear of causing harm to the patient (Rutherford-Hemming, 2012). However, it is not solely the use of simulation, but the techniques employed with simulation that can improve the teaching-learning experience for faculty and students.

1.2.4 Satisfaction with Simulation

Simulation in nursing education is certainly an innovative teaching method used by nurse educators to inspire student-centered learning, while increasing the student's knowledge, skills, and abilities regarding patient care (Faulcon, 2015). It is very important as nurse educators to plan and determine the type of teaching approach to the first year nursing students. Benner (2010) defined novice nursing student as those who were enrolled in the first year of nursing education and without any experiential background to understanding of clinical situation. At this juncture, it is very important for the nurse educators to ensure their choice of pedagogy for the nursing students are satisfactory. Thus, the beginning of actual patient simulation to the subject matter to these novice nursing students must be reproducing actual clinical problems which are very close to clinical practice (Tosterud, Hedelin & Hall-Lord, 2013).

Hence, the experiences from simulation will embark the nursing students with low, moderate or high satisfaction to the teaching method. Cant and Cooper (2010) reported simulation as a valid teaching/learning strategy and revealed additional gains in students' satisfaction compared with a control group (range 7–11%); and indicated

ease of program use, strong satisfaction with learning and appreciation of program accessibility (Cant & Cooper, 2014). Students also reported higher levels of satisfaction, effectiveness and consistency with their learning style when exposed to the combination of lecture and simulation than the control group, who were exposed to lecture as the only method of teaching and learning (Sinclair & Ferguson, 2009).

A study on the effectiveness of simulations in reducing anxiety and promoting satisfaction simulation revealed that caring efficacy was positively increased with satisfaction after using simulations (Khalaila, 2014). Student satisfaction with high-fidelity simulation have positive relationships between the social and solitary learning styles and student satisfaction with simulation (Fountain & Alfred, 2009). However, Lapkin and Levett-Jones (2011) in contrast found that medium-fidelity manikins are more cost effective requiring one-fifth of the cost of high-fidelity manikins to obtain the same effect on clinical reasoning, knowledge acquisition and student satisfaction.

Kim, Choi, Kang and Kim (2011) found that simulation-based learning was a useful method for practical ability and learning satisfaction for nursing students' academic achievements. Similarly, Young, Woo, Hyun and Young (2012) study showed that the computer-based simulation group had significant higher satisfaction ratings in 'setting priorities for nursing intervention' and 'implementing nursing skills as protocol' compared to the mannequin-based simulation group. Warren, Luctkar-Flude, Godfrey and Lukewich (2016) concluded from their systematic review of the effectiveness of simulation-based education on satisfaction and learning outcomes in

nurse practitioner programs that high fidelity simulation increases students' knowledge and confidence, and students are more satisfied with simulation-based teaching in comparison to other methods.

Nevertheless, many studies reported on nursing students' satisfaction with simulation regardless of the methods that are high-fidelity, medium-fidelity or low-fidelity simulations (Basak, Unver, Moss, Watts & Gaiosis, 2016; Tosterud et al., 2013; Sharpnack & Madigan, 2012; Wang, Fitzpatrick & Petrini, 2013). However, in terms of using simulation such as video case scenarios for the novice nursing students to formulate nursing diagnosis was not documented. Thus in this research is worth to explore the satisfaction level on this new approach of learning style among the nursing students.

1.1.5 Self-Confidence with Simulation

In addition, self-confidence is an important factor for both nursing students and professional nurses besides attaining knowledge, attitude and effective skills. At this juncture, Leigh (2008) stated a nurse's confidence in her/his ability is essential for good patient care. Only when nursing students have confidence in their own abilities, they able to shift focus to the needs of their patients. Shifting from their own needs to that of a patient is essential to being a safe and competent practitioner. White (2009) stated that it is a must to achieve self-confidence among nurses as to allow more autonomous practice to be built and benefit to patient care. Similarly, Samawi, Miller and Haras (2014) pointed out that simulation-based teaching and learning strategies build self-

confidence in nursing students by allowing them to practice assessment and critical thinking skills in a nonthreatening environment.

Cant and Cooper (2010) reported simulation as a valid teaching/learning strategy and revealed additional gains in students' self-confidence compared with a control group. Khalaila (2014) revealed the effectiveness of simulations in reducing anxiety and promoting self-confidence and caring ability with simulation. The results revealed that self-confidence and caring ability scores increased after using simulations. Caring efficacy was positively with self-confidence with simulation. Smith and Roehrs (2009) study on factors correlated with high-fidelity simulation indicated that design characteristics, especially clear objectives and an appropriately challenging problem to solve, were significantly correlated with self-confidence.

Furthermore, high-fidelity nursing simulation impact on student self-confidence and clinical competence by Blum, Borglund and Parcells (2010) indicated an overall improvement in self-confidence and competence across the semester. Yuan, Williams and Fang (2012) systematic review contribution of high-fidelity simulation to nursing students' confidence and competence showed results of meta-analysis which indicated a mixed contribution of high-fidelity simulation to confidence and competency with a lack of high-quality random control trials and large sample sizes. Liaw, Scherpbier and Rethans (2012) study demonstrated a significant improvement on post-test scores from pre-test scores for self-confidence with simulation.

Zulkosky (2012) found that self-confidence increased with simulation use in the classroom who received a lecture and case studies for the cardiac content. Alfes (2011) evaluated the use of simulation with beginning nursing students found that students participating in the simulation experience were statistically more confident than students participating in the traditional group. In fact other few studies have shown that increased self-confidence among nursing students with simulation strategies for clinical skills (Norman, 2012; Sharpnack & Madigan, 2012; Forbes et al., 2016). However, no documentation found on the study that used video simulation that can actively enhanced self-confidence from the students' perspective of clinical practice such as identifying and formulating the nursing diagnosis.

1.2 Problem Statement

Nursing diagnosis for each patient should be formulated accurately according to NANDA-I taxonomy 2015-2017 list (Appendix A) which used the standardized names of the nursing diagnosis with numerical codes and definitions to execute a confirmed diagnostic conclusion for the patients (Herdman & Kamitsuru, 2014). It is important for the nursing diagnosis of an individual patient to be accurately formulated as it will help in effectively planning the care for the patient. This is because the ability to identify accurate nursing diagnosis for the patient is essential to guide nursing interventions for the achievement of positive patient outcomes (Thoroddsen, Ehrenberg & Ehnfors, 2010). Nevertheless, there are still lack of competency among the nursing students as well as nurses to formulate accurate nursing diagnosis for their patient (Aydin & Akansel, 2013).

At the School of Health Sciences of Universiti Sains Malaysia (USM), subject on nursing diagnosis is taught using didactic lecture incorporated with scenario of case studies during their first semester of first year of study. Based on the scenarios, nursing students were guided to identify and formulate the actual, potential or risk nursing diagnosis. During this process the students are corrected for their inappropriate nursing diagnosis which they have formulated according to the case scenarios. This nursing diagnosis knowledge is prerequisite for the subsequent semesters when other nursing subjects are offered to the nursing students. There forth, the reinforcement on nursing diagnosis continues in the preceding years of the nursing students' academia.

However, the nursing students were found to have difficulties to formulate nursing diagnosis in their assessment as well as in their clinical areas. The researchers' experience as their nursing lecturer at the clinical placement has encountered this scenario among every batch of the students. Further, five senior nursing teaching staffs stated that majority of the nursing students have problems in formulating the nursing diagnosis during clinical attachment (personal com. Jun 2016). There were two main problems identified which were lack of efficiency to use correct terms to formulate the nursing diagnosis and lack of skills to prioritize the patients' nursing diagnosis.

All the five senior nursing teaching staffs agreed that majority of the students have problem to determine the correct terms to formulate the nursing diagnosis. Students seemed to forget the nursing diagnoses from NANDA-I taxonomy which were taught in their first semester of first year nursing. It was evident that nursing students in their first year first semester of academic session 2015/2016 and 2016/2017 were

weak in identify and formulate nursing diagnosis from the final examination. In one section of the modified essay question, the nursing students were required to identify two actual nursing diagnoses for the given scenario of a patient. Table 1.1 and Table 1.2 below show the score of accurate nursing diagnosis the students had identified respectively.

Table 1.1 Identify two (2) actual nursing diagnosis in Academic Session 2015/2016 (n=41)

Full marks 4	Frequency	Percentage
4 marks	2	5
3 marks	2	5
2 marks	8	19
1 mark	19	46
0 mark	10	25

Table 1.2 Identify three (3) actual nursing diagnosis in Academic Session 2016/2017 (n=42)

Full marks 9	Frequency	Percentage
9 marks	-	-
8 marks	-	-
7 marks	2	5
6 marks	8	20
5 marks	4	10
4 marks	12	28
3 marks	3	7
2 marks	7	16
1 mark	3	7
0 mark	3	7

The results in Table 1.1 for the academic session 2015/2016 shows that the nursing students did not formulate nursing diagnosis accurately. Out of 41 nursing students, 29 (71%) of them failed to formulate accurate nursing diagnosis. However, there was two nursing students who scored full mark of 4 (5%). Similarly the results in Table 1.2 for academic session 2016/2017 shows 28 (65%) of the nursing students scored 4 marks and below which denotes these nursing students failed this part of the question. Moreover in this academic session 2016/2017 none of them scored 9 full marks. These marks indicated that the nursing students had difficulty to formulate accurate nursing diagnosis.

Likewise, related studies evaluating performance of nursing students on formulating nursing diagnosis also revealed similar findings. Yont, Khorshid and Eser (2009) stated some of the nursing students' were unable to formulate nursing diagnosis. They had difficulties referring patients' needs as the nursing diagnosis. Aydin and Akansel (2013) in Turkey found the ability of their nursing students' to formulate accurate nursing diagnosis from NANDA-I taxonomy list were not satisfactory. Lacking of the skill to formulate accurate nursing diagnosis can be a challenge for nursing students and the nursing profession in the future.

Marini and Chaves (2011) noted the accuracy of nursing diagnosis used in an emergency service showed a low percentage of accuracy. Similarly, Ofi and Sowunmi (2012) also reported nurses also had difficulties in formulating nursing diagnosis. A systematic review from databases (1993 – 2013) on the use of nursing diagnoses in

clinical practice conducted by Mynarikova and Ziakova (2014) revealed nurses had inefficiency to identify patient's problem and formulate nursing diagnosis accordingly to the patient's problems. A recent systematic review by Zamanzadeh, Valizadeh, Tabrizi, Behshid and Lotfi (2015) on challenges associated with the implementation of the nursing process found intangible understanding of the concept of nursing diagnosis to be the main challenge for nurses.

Thus, the problems of accuracy to formulate nursing diagnosis in nursing practice is not a local issue but global. The nursing students are taught nursing diagnosis to enhance their understanding how to interpret the patient's problems before they plan their nursing interventions clinical practice (Herdman & Kamitsuru, 2014). Further, nursing students must be skilful to formulate the nursing diagnosis of their patient from the physical, physiological and psychological aspects. The problem which led the nursing students to have difficulty to formulate nursing diagnosis could be the method of delivery of the content or cognitive level of the nursing students (Lunney, 1992). The usual way of the content delivery in class with patient scenario could not help the nursing students understanding on nursing diagnosis. It could also because at this stage, nursing students have not been exposed to the real patient in the ward environment, therefore they could not visualized the situation promptly to formulate nursing diagnosis accurately (Brooks, Moriarty & Welyczko, 2010).

It is known that learning was stimulated through the five senses: sight, hearing, touch, smell and taste. Learning retains through the sense of sight (75%); hearing (13%); touch (6%); smell (3%) and taste (3%) (Jacobs, Hurley & Unite, 2008). The use

of visual stimuli enhance learners remember more about what they see compared to the other senses. In line with thought, the passive teaching methods from the learning pyramid indicate retention of knowledge from lecture is (5%); reading (10%); audio visual (20%); and demonstration (30%) (Jacobs, Hurley & Unite, 2008). Hence, many studies have been conducted in nursing education with the use of videos to support teaching and learning of clinical skills that proved it to be promising, relevant and increasingly used instructional strategy (Forbes et al., 2016; Shrithi & Rodrigues, 2015; Hansen, 2011; Kaur, Singh, Ghai, & Agnihotri, 2015; Celikkan, Senuzun, Sari & Sahin 2013; Logan, 2012; Medley & Horne, 2005).

Apparently, no research has been conducted using video for teaching nursing diagnosis to the researcher's knowledge. Even in the local setting in Malaysia no reported study on this method. But there was one study by Katherason and Nahas (1998) which was on the nursing process as a model for clinical supervision. Thus, it is timely to conduct a study to this topic to close the gap so that quality care can be commenced to patients. Therefore, it is worth to explore this issue among the students at the researchers' nursing program by leveraging with video assisted lecture (VAL) and didactic lecture (DL) to teach the subject nursing process and nursing diagnosis with emphasis to identify accurate nursing diagnosis.

In light to this practice, Turk, Tugul and Sahbaz (2013) found that students in their first clinical practice can only determine nursing diagnosis more pertaining to physiological needs of patients. This is not surprising because students are still novice in nursing and the skill would develop gradually with clinical experience exposures

(Benner, 1984). Hence, the first year nursing students' inadequate knowledge on diseases and lack of experience in clinical areas impose them to make inappropriate holistic assessment of the patients in the wards

Therefore, a sound and strong foundation on formulation of accurate nursing diagnosis is very crucial to interpret the patient's problems before nursing students plan their nursing interventions. The DL incorporated with clinical scenarios is observed not effectively produced nursing students who could accurately formulate the nursing diagnosis. This is because they could not see and hear the scenario audio visually to detect patient's problems to formulate nursing diagnosis. Otherwise, using audio visual aid such as video can assist nursing students see and hear the scenario audio visually to detect patient's problems to formulate nursing diagnosis.

1.3 Objectives of the Study

1.3.1. General Objective

To evaluate the differential effects of video assisted lecture (VAL) and didactic lecture (DL) on accuracy of nursing diagnosis formulation, satisfaction, self-confidence and simulation design among nursing students.

1.3.2. Specific Objectives

1. To assess the differences between VAL and DL on accuracy of nursing diagnosis formulation for medical scenario among nursing students.

2. To assess the differences within VAL and DL on accuracy of nursing diagnosis formulation for medical scenario among nursing students.
3. To assess the differences between VAL and DL on accuracy of nursing diagnosis formulation for surgical scenario among nursing students.
4. To assess the differences within VAL and DL on accuracy of nursing diagnosis formulation for surgical scenario among nursing students.
5. To determine the differences between VAL and DL to satisfaction on accuracy of nursing diagnosis formulation among nursing students.
6. To determine the differences between VAL and DL to self-confidence on accuracy of nursing diagnosis formulation among nursing students.
7. To determine the differences between VAL and DL to simulation design on accuracy of nursing diagnosis formulation among nursing students.

1.4 Research questions

1. What is the difference between VAL and DL on accuracy of nursing diagnosis formulation for medical scenario among nursing students?
2. What is the difference within VAL and DL on accuracy of nursing diagnosis formulation for medical scenario among nursing students?
3. What is the difference between VAL and DL on accuracy of nursing diagnosis formulation for surgical scenario among nursing students?
4. What is the difference within VAL and DL on accuracy of nursing diagnosis formulation for surgical scenario among nursing students?
5. What is the difference between VAL and DL to satisfaction on accuracy of nursing diagnosis formulation among nursing students?
6. What is the difference between VAL and DL to self-confidence on accuracy of nursing diagnosis formulation among nursing students?
7. What is the difference between VAL and DL to simulation design on accuracy of nursing diagnosis formulation among nursing students?

1.5 Research Null Hypotheses

- Null Hypothesis 1 - H₀1a. There is no significant difference in accuracy of nursing diagnosis scores for medical scenario among nursing students between VAL and DL.
- H₀1b. There is no significant difference in accuracy of nursing diagnosis scores for medical scenario among nursing students within VAL and DL.
- Null Hypothesis 2 - H₀2a. There is no significant difference in accuracy of nursing diagnosis scores for surgical scenario among nursing students between VAL and DL.
- H₀2b. There is no significant difference in accuracy of nursing diagnosis scores for surgical scenario among nursing students within VAL and DL.
- Null Hypothesis 3 - H₀3. There is no significant difference in satisfaction scores (measured by the Satisfaction Scale) of nursing students between VAL and DL.
- Null Hypothesis 4 - H₀4. There is no significant difference in self-confidence scores (measured by the Self-Confidence Scale) of nursing students between VAL and DL.

Null Hypothesis 5 - Ho5. There is no significant difference in simulation scores (measured by the Simulation Design Scale) of nursing students between VAL and DL.

1.6 Significance of the Study

This study examined the differences of VAL and DL on accuracy of nursing diagnosis formulation as well as their comparative differences on nursing students' satisfaction, self-confidence and simulation design. In the end of this study, the significance was to provide a clear understanding of the impact of the VAL and DL among nursing students' ability to formulate accurate nursing diagnosis in nursing program, School of Health Sciences, USM. In addition, nursing diagnosis provided the framework to describe nursing care. Moreover, nursing diagnosis represent independent nursing practice and nurses are responsible to implement the five steps of nursing process. Thus, a study of nursing student's ability to formulate nursing diagnosis provided some indication of how well these nursing students are prepared to meet professional roles and responsibility in the independent dimension of nursing profession. The nursing profession being a part in the health care domain is responsible to the society it serves professionally.

Nursing students must understand the importance of appropriate and accurate nursing diagnosis during their nursing education. The nursing students of today are the future nurses tomorrow in the health care centers. The advocacy of nursing diagnosis to professional nursing is well documented. Hence, a better teaching and learning plan with the aid of information communication technology such as video can be planned to enhance

nursing students' in the first year their knowledge, attitude and practice to formulate nursing diagnosis. Thus, this study of nursing student's ability to formulate nursing diagnosis will add to the body of knowledge on nursing diagnosis in nursing education and clinical practice. Furthermore, the nursing students learning satisfaction and self-confidence from this new teaching method can be evaluated. Hence, adding new information in the teaching and learning process in this program.

1.7 Operational Definitions

1. Video assisted lecture (VAL)

In this study the VAL was referred to the delivery method of teaching the nursing diagnosis. Apart from the lecture with Power Point, two videos on patient scenarios were shown to the nursing students to identify and formulate accurate nursing diagnosis. Each of the video (Appendix B) was a medical scenario (asthmatic patient) and surgical scenario (fracture of cervical 3 and 4).

2. Didactic lecture (DL)

In this study DL was referred to the delivery method of teaching the nursing diagnosis. Besides using lecture with Power Point, two patient scenarios in word processor were shown to the nursing students to identify and formulate accurate nursing diagnosis. Each of the scenario (Appendix C) was a medical scenario (asthmatic patient) and surgical scenario (fracture of cervical 3 and 4).

3. Nursing diagnosis

In this study it was the step in which a nursing student would recognize, sort and organize the patients' need to formulate an accurate nursing diagnosis from the NANDA-I taxonomy 2015-2017.

4. Nursing Student

The nursing student was referred to the first year first semester diploma and undergraduate nursing students enrolled in the DGN 113 Basic Nursing Skills (ADL) (Appendix D) and GTJ 101 (FON I) (Appendix E) respectively.

5. Accuracy of Nursing Diagnosis

Accuracy of nursing diagnosis in this study was the ability of nursing students to formulate accurate nursing diagnosis for the medical and surgical patient scenarios from the VAL and DL using the standard NANDA-I nursing diagnosis. It was measured by the D-Catch Guide checklist (Appendix F).

6. Satisfaction

In this study, the satisfaction level was referred to the nursing student's satisfaction level achieved from the application of teaching method that was VAL and DL to the nursing students as to formulate accurate nursing diagnosis. Satisfaction in learning was measured by using 7 - items Likert-type instrument, the *Satisfaction in Learning Scale* by the National League of Nursing (NLN 2005) (Appendix G).

7. Self-confidence

In this study, the self-confidence was referred to the nursing student's confidence level achieved from the application of teaching method that were VAL and DL to formulate accurate nursing diagnosis. Self-confidence in learning was measured by using 9 - items Likert-type instrument, the *Self Confidence in Learning Scale* by the National League of Nursing (NLN 2005) (Appendix G).

8. Simulation Design

The simulation design in this study was the VAL and DL on medical and surgical clinical patient scenarios. The simulation design in the learning was measured by mean scores on 23 - items Likert-type instrument, the *Simulation design Scale Tool* by the National League of Nursing (NLN 2005) (Appendix G).

1.8 Summary

Nursing diagnosis is an important aspect in the nursing profession. Accuracy of nursing diagnoses was defined as the degree to which a diagnostic statement matches the cues or data in a patient situation (Lunney, 1992). Accurate nursing diagnoses are important to provide competent health care. There was no specific study known which used VAL and DL method of teaching to formulate accurate nursing diagnosis. Moreover, simulated method of teaching in nursing education are much advocated to improve the cognitive, affective and psychomotor skills of the nursing students (Eyikara & Baykara, 2017). Hence, this study was to measure the differences of the VAL and DL on the accuracy of nursing diagnosis, satisfaction, self-confidence and simulation design among nursing students.

CHAPTER 2

REVIEW OF LITERATURE

2.1 Introduction

This chapter reviews literature on the theoretical framework, development and current phases of nursing process and each standardized nursing terminology. Following this, the literature review discusses differences between nursing diagnosis and medical diagnosis, accuracy of nursing diagnosis, tools used to measure nursing diagnosis, educational innovation with videotape, satisfaction on simulation teaching, self-confidence from simulation teaching, and simulation design teaching. In addition the conceptual framework is discussed.

2.2 Theoretical Framework

Learning is a continual process of acquiring new, or modifying existing, knowledge, behaviors, values or preferences which is influenced by the learning styles which is embedded from learning theories (Zhou & Brown, 2015). Thus, theoretical frameworks act as the underpinnings that guide research studies. Learning theory describes how the students absorb, process and retain knowledge during learning (Jong, 2006). In this study two learning theories were chosen to guide the study. The Kolb's Experiential Learning Theory (1984) and the Kirkpatrick's Evaluation Model (1994) were used to guide this study because experiential learning addresses the concept of how new experiences make learning meaningful for novice nursing students.

Furthermore, Murray (2018) contended that the experiential learning is applicable throughout nursing academia precisely.

2.2.1 Kolb's Experiential Learning Theory (ELT)

Nursing education is an area which requires knowledge, skills and attitude components to prepare a knowledgeable, safe and competent nurse. Experiential and reflective aspects of learning are indicators to motivate and involve nursing students in their learning process (Lisko & O'Dell, 2010). Thus, it enabled them to change their attitudes and confidence in their nursing subjects. In light to this matter, the Kolb's Experiential Learning Theory was used for this study because it explains the challenges and complexities of classroom teaching. Kolb (1984) defined experiential learning as a 'holistic integrative perspective on learning that combines experience, cognition and behavior' (p. 21) and further elaborates that it is 'a continuous process grounded in experience' (p. 41). Hence, nursing being a practice-based profession need to inculcate an experience-based learning theory such as the experiential learning theory to adhere with the philosophy and perspectives of nursing academia (Murray, 2018).

ELT was published by David Kolb in 1984. It comprised of theory works on two levels: a four stage cycles of learning and four separate learning styles which includes Concrete Experience (CE), Reflective Observation (RE), Abstract Conceptualisation (AC) and Active Experimentation (AE). The main concerned of his theory was with the learner's internal cognitive processes and the impetus for the development of new concepts was provided by new experiences (Mc Leod, 2013). Furthermore,

Kolb's experiential learning style theory is typically represented by a four stage learning cycle as shown in Figure 2.1.

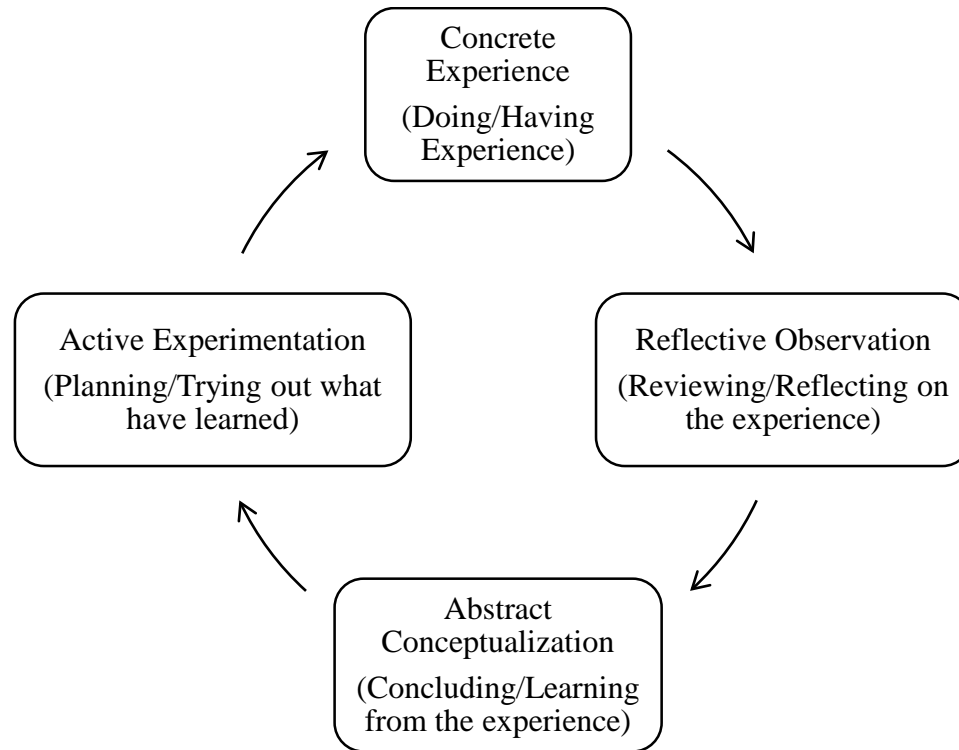


Figure 2.1. Kolb's ELT (Ref: Kolb, 1984)

Stage 1. Concrete Experience (CE)

In this stage a new experience of situation is encountered, or reinterpretation of existing experience (Mc Leod, 2013). This stage is about experiencing or immersing oneself in the task and is the first stage in which a person simply carries out the task assigned. This is the doing stage whereby the learner actively experiences an activity and lessons are learned through adaptation (Akella, 2010). In relation to this stage Zhou and Brown (2015) reported that applications of ELT such as field courses, study abroad, mentor-based internships, cooperative education, internships, service learning, field course

scenario, role play scenario, simulations and gaming as well as e-learning enhance CE of the students.

Stage 2. Reflective Observation (RE)

The next stage of RE uses the new experience, of particular importance are any inconsistencies between experience and understanding (Mc Leod, 2013). In this stage, students reflect on their observation and experiences from all perspectives in order to articulate what learning processes have taken place on them (Russell-Bowie, 2013). In a nutshell it involves stepping back from the task and reviewing what has been done and experienced by the student. Nevertheless, students' values, attitudes and beliefs can influence their own thinking at this stage. This is the stage of thinking about what oneself have done.

Stage 3. Abstract Conceptualization (AC)

The third stage in the ELT is AC in which the reflection gives rise to a new idea, or a modification of an existing abstract concept (Mc Leod, 2013). It involves interpreting the events that have been carried out and making sense of them (Russell-Bowie, 2013). This is the stage of planning how student will do it differently using logic and ideas as opposed to feelings to understand the problems (Akella, 2010). Associated with this disclosure, Murray (2018) stated learners in addition use their analytical skills to combine the ideas and concepts that were realized in the first two stages.

Stage 4. Active Experimentation (AE)

The fourth stage in the ELT is AE in which the learner applies them to the world around them to see what the end results (McLeod, 2013). This stage allows the learner to apply the new learning and predict what is likely to happen next or what actions should be taken to refine the way the task is done again (Russell-Bowie, 2013). This is the redoing stage based upon experience and reflection. Murray (2018) pointed out that two examples of Kolb's theory in action follow are simulation and case study in nursing academia.

According to Kolb and Kolb (2005) learning as an integrated process with each stage being mutually supportive of and feeding into the next step. Moreover, through logical sequence, learning can enter the cycle at any stage and to follow it. Apparently, effective learning only occurs when a learner is able to execute all the four stages of the model. Therefore, no one stage of the cycle is an effective as a learning procedure on its own. Learning is the process whereby knowledge is created through the combination and grasping transformation of experiences. ELT suggests that without reflection, an individual would continue to repeat their mistakes.

The Kolb's ELT (1984) was selected to describe the interaction between the four domains in this research. This theory proposed high inter-relation between videos, satisfaction, self-confidence and formulation of accurate nursing diagnosis. In the first domain to establish a concrete experience, a new style of teaching the subject was introduced. The new experience was video clips with lecture to identify and formulate accurate nursing diagnosis from the video clips. The reflective observation in the second

domain required nursing students to think critically to identify accurate nursing diagnosis. Hence, nursing students were satisfied with the new learning approach, which developed the third domain of abstract conceptualization that earns them to formulate nursing diagnosis. Finally, in the last domain which is active experimentation, the nursing students were able to apply the concrete understanding and self-confidence to formulate accurate nursing diagnosis in any circumstances. The conceptual framework of the study is shown in Figure 2.2.

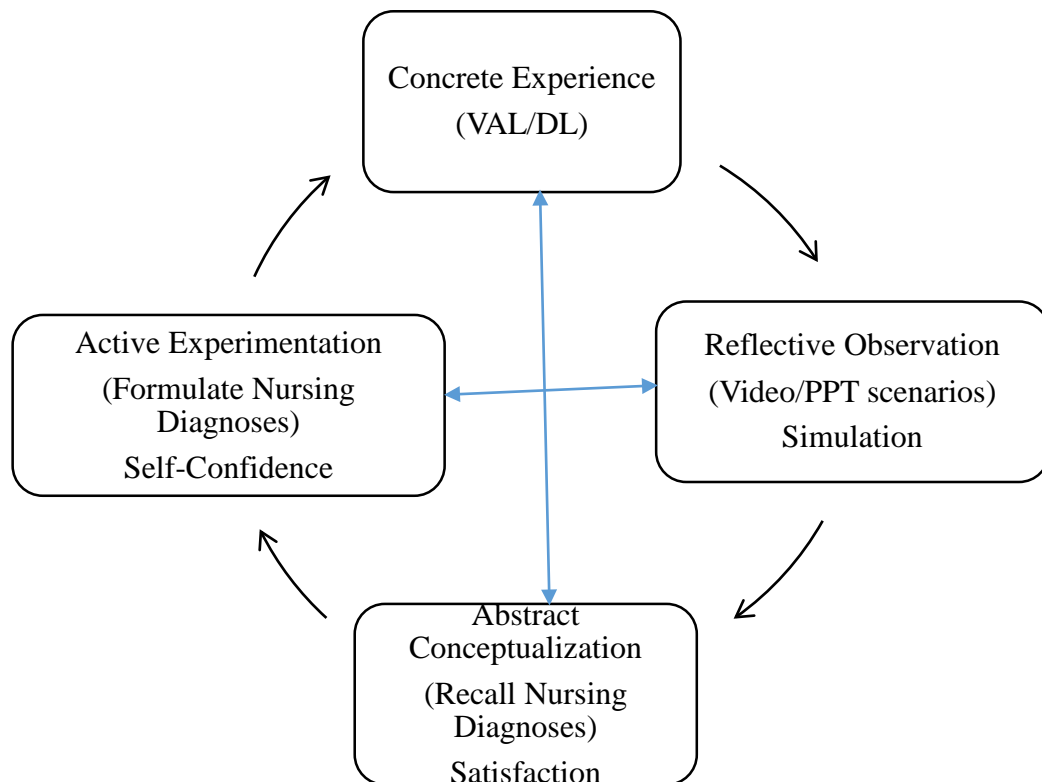


Figure 2.2. Conceptual Framework of the Study

2.2.2 Kirkpatrick's Evaluation Model

The other theoretical framework used for this study was the Kirkpatrick's Evaluation Model. This model was developed by Donald Kirkpatrick in 1960 and ever since then used extensively for evaluating training program (Dorri, Akbari & Sedeh, 2016). This framework was designed as a sequence of ways to evaluate training programs. Since this research was on the training of nursing students, hence it was appropriate framework to adopt and guide this research. The four levels of Kirkpatrick's evaluation model (Figure 2.3) are as follows:

Level 1	Reaction	To what degree did the participants react favourably to the training
Level 2	Learning	To what degree did the participants acquire the intended knowledge, skills, and/or attitudes based on their participation in a training
Level 3	Behaviour	To what degree did the participants apply what they learned during training to his/her job
Level 4	Results	To what degree did the targeted objectives or outcomes occur as a result of the training

Figure 2.3. Kirkpatrick's Four Level of Evaluation (Ref: Kirkpatrick, 1994)

Level 1. Reaction

According to Kirkpatrick (1994) Level 1 denotes what participants thought and felt about the training (satisfaction; self-confidence; simulation learning design). In this research this level identifies the reaction of the nursing students related to their thoughts and feeling about the training experience of using two different delivery methods of teaching a subject which is important for nursing profession. This level

measures the way nursing students are being trained, and reacted to the training. Obviously, it was important to measure reaction, because it helps researcher to understand how well the training was received by the nursing students. This level also helped to improve the training for future nursing student trainees, including identifying important areas or topics that were missing from the training. Moreover, in this level their reactions make them to feel that the training was a valuable experience, and felt good about the instructor, the topic, the material, its presentation, and the venue.

Level 2. Learning

Learning in this level as the results showed an increase in knowledge and/or skills, and change in attitudes (Kirkpatrick, 1994). This evaluation occurs during the training in the form of either a knowledge demonstration or test. The nursing student's resulting learning and increase in knowledge from the training experience of two different delivery methods of teaching. Hence, at this level, the nursing students' knowledge on accurate formulation of nursing diagnosis can be measured. This level further determined the depth and quantity of their knowledge being increased as a result of the training. When the training session was planned, a list of specific learning objectives are important as the starting point for measurement. Thus, can measure learning in different ways depending on these objectives, which depends on the changes to knowledge, skills, or attitude. It was important to measure this, because knowing what the nursing students had learnt and what they had not will help to improve future training.

Level 3. Behaviour

Kirkpatrick (1994) stated at this level of behaviour, it shows the transfer of knowledge, skills, and/or attitudes from classroom to the job (change in job behaviour due to training program). This evaluation occurs between three to six months post training while the trainee is performing the job. However, in this study the change in behaviour was observed two weeks later. Evaluation usually occurs through observation which can be on the nursing student's behavioural change and improvement after applying the skills on the job. At this level, the nursing students have changed their behaviour, based on the training they received from video assisted learning and didactic lecture. Specifically, this looked at how nursing student as trainees applied the information. It was important to realize that behaviour can only change if conditions are favourable. For instance, if have skipped measurement at the first two Kirkpatrick levels and, when looking at the group's behaviour, it looked like no behaviour change had taken place. Therefore, it can be assumed that the nursing students have not learned anything and that the training was ineffective. However, just because behaviour has not changed, it did not mean that trainees had not learned anything. At this juncture, may be nursing students had learned everything taught, but they have no desire to apply the knowledge themselves.

Level 4. Results

The final level of this model is the results that occurred because of attendance and participation in a training program (Kirkpatrick, 1994). This can be monetary, performance-based and etc. This meant that the results or effects that the nursing

student's performances had on the subject matter which was on nursing diagnosis. At this level, the Post Test 1 and Post Test 2 scores on nursing diagnosis can analyse the final results of their training. In addition the nursing students satisfaction, self-confidence and simulation design towards the delivery methods of teaching the nursing diagnosis can be evaluated in the end of the study. This include the outcomes which was the teaching methods either VAL or DL used in this study have determined to be good for study, good for the nursing students, or good for the subject matter itself. The conceptual framework of the study is shown in Figure 2.4.

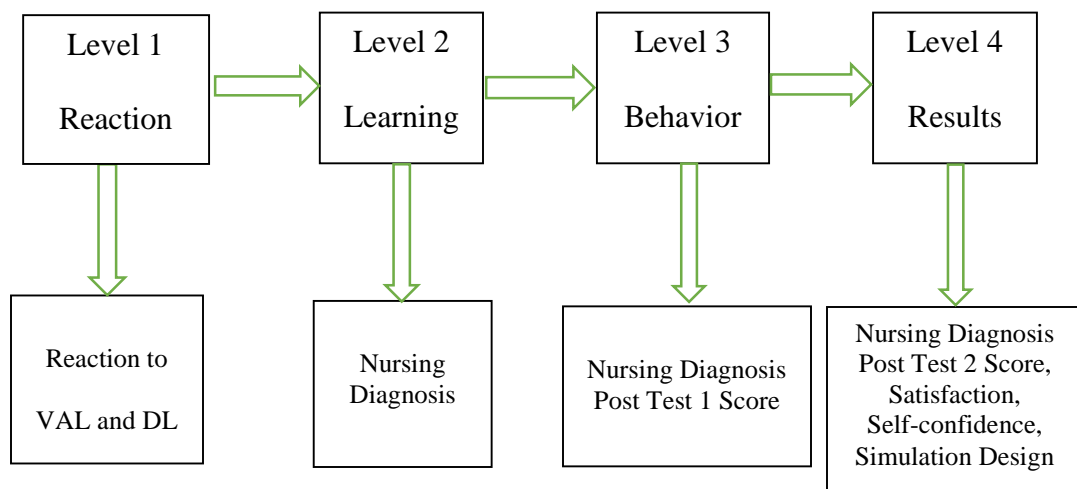


Figure 2.4: Conceptual Framework of the study

2.3 History of Nursing Process

The nursing process was introduced many decades ago but only gained legitimacy in 1973 when the nursing process phases were included in the American Nurses Association (ANA) standards of practice (Berman et al., 2008). The purpose of nursing process is to identify a patient's health in actual or potential status/problems; to establish plans to meet the identified needs and to deliver specific nursing interventions to meet those needs. The nursing process is an organized systematic approach used by nurses to meet the individualized health care needs of their patients. Yildirim and Ozkahraman (2011) defined it as a problem-oriented model that breaks down symptoms into nursing problems and utilizing nursing diagnoses.

The nursing process was divided into three stages: Stage I (1950-1970) as 'Problem and Process'; Stage II (1970-1990) as 'Diagnosing and Reasoning' and Stage III (1990-present) as 'Outcome specification and testing' (Yildirim & Ozkahraman, 2011). In Stage I there was only four-step process: assessment, planning, intervention and evaluation. However in Stage II and Stage III it involved five-step process: assessment, diagnosing, planning, intervention and evaluation. Additionally the nursing process is based on the NANDA-1 Nursing Diagnoses (ND), Nursing Interventions Classification (NIC) and Nursing Outcomes Classification (NOC) (Bruylants, Paans, Hediger & Muller-Staub, 2013). The ND is part of the nursing process and is a clinical judgment about individual, family, or community experiences/responses to actual or potential health problems/life processes. The NIC is a care classification system which describes the activities that nurses

perform as a part of the planning phase of the nursing process associated with the creation of a nursing care plan. The NOC is a comprehensive, standardized classification of patient/patient outcomes developed to evaluate the effects of interventions provided by nurses or other health care professionals.

NANDA International (formerly the North American Nursing Diagnosis Association) is a professional organization of nurse's standardized nursing terminology that was officially founded in 1982 and develops researches, disseminates and refines the nomenclature, criteria, and taxonomy of nursing diagnoses (Bruylants et al., 2013). Moreover, quality patient care in health care delivery settings depends on nurses' ability to develop a comprehensive plan of care using the nursing process (Lee, 2005). Nevertheless, an important part to disseminate information of the patient nursing care plans is the nursing documentation of the nursing process (Häyrynen, Lammintakanen & Saranto, 2010).

The nursing process is a universally accepted document to utilize as it is a systematic method of providing nursing care to the patients. Nursing process also encourages orderly thought, analysis and planning among nursing staffs. Furthermore, it is a process with a series of steps or acts that lead to accomplishment of some purposes to provide patient care which is individualized, holistic, effective and efficient (Gordon, 2014). It can be utilized throughout the life span of a patient in any care setting such as clinics, hospital and even community based clinics. Currently in the health care delivery settings, the emphasis is on quality patient care. This statement depends totally on the nurses' ability to incur a comprehensive nursing care plan which is the nursing process.

Apparently, the nursing process as the nursing terminology is one of the basic attributes of establishing nursing as a scientific discipline in the theory, research and nursing practice (Mynarikova & Ziakova, 2014).

2.4 Phases of Nursing Process

The nursing process is defined as a systematic, rational method of planning and providing individualised nursing care (Berman et al., 2008), nursing process is a scientific method used by nurses to ensure the quality of patient care (Gallagher-Lepak, 2014). There are five steps of nursing process which are assessing, diagnosing, planning, intervening and evaluating are built on each other and are not linear. The nursing process is dynamic and requires creativity in its application despite the phases remain the same but the application and results are different for each individual patients. The five phases of nursing process are interrelated thus if inadequate data obtained during the initial stage will lead to incorrect nursing diagnoses in the second phase (Ackley & Ladwig, 2014). Hence, subsequently inaccuracy will be reflected in the planning, intervening and evaluating phases as shown in Figure 2.5. The nursing process can use an acronym, ADPIE (Fig 2.5) (Ackley & Ladwig, 2014, p. 2):

1. **Assess:** perform a nursing assessment
2. **Diagnose:** make nursing diagnoses
3. **Plan:** formulate and write outcome/goal statements and determine appropriate nursing interventions based on evidence (research)
4. **Implement** nursing care as planned on individual basis

5. **Evaluate** the outcomes and the nursing care that has been implemented. Make necessary revisions in care as needed.

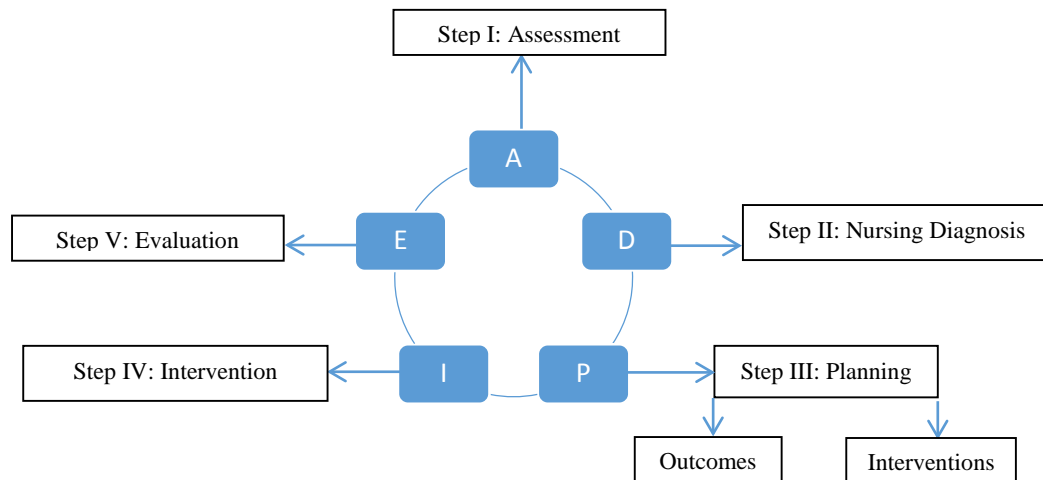


Figure 2.5. Steps of Nursing Process (Ref: Ackley & Ladwig, 2014)

2.4.1 Step 1. Assessment

Assessing is the first step whereby a systematic and continuous collection, organization, validation, and documentation of data (Berman et al., 2008, p.179). A holistic assessment of the patient include collection of subjective and objective information such as vital signs, patient/family interview, physical examination and review of historical information in the patient chart (Gallagher-Lepak, 2014). During assessment the health promotion opportunities or potential problems and clinical reasoning are the foundation of nursing diagnosis for the individual patient including the biophysical, psychological, sociocultural, spiritual and environmental characteristics. There are four types of assessments such as initial, problem-focused, emergency and time-lapsed assessments.

These data are gathered from subjective information obtained from the patient or family. Whereas the objective data are gathered from the patients' physical examination from head to toe; vital signs and diagnostic tests. In so far, all the information obtained will be critically sorted to determine the appropriate and accurate nursing diagnosis.

Subsequently, if the key issues are evident in the assessment, thus allow the nurse to begin to identify the problems and formulate the accurate nursing diagnosis (Herdman & Kamitsuru, 2014). This step is fundamental for accurate and appropriate diagnosis, planning and intervention. In line with this thought, an accurate nursing diagnosis is essential to provide high quality care (Paans et al., 2010). However, the experienced nurses tend to identify clusters of the clinical cues from the assessment data more quickly and progress to nursing diagnoses if compare to the novice nurses or the nursing students (Gallagher-Lepak, 2014).

Therefore, it can be argued that assessment is the first and the most critical step in the nursing process. Otherwise, nurses will find it impossible to identify or formulate the correct nursing diagnosis which will not contribute to safe and quality care. Herdman and Kamitsuru (2018) pointed out that inadequate nursing assessment can contribute to no appropriate nursing diagnosis and as such will have no independent nursing interventions. Furthermore, assessment requires both intellectual and an interpersonal activity of an individual nurse with patients. Hence, the correct nursing diagnosis guide the nurse to prioritize nursing diagnosis and interventions.

2.4.2 Step II: Nursing Diagnosis

2.4.2.1 Definition of Nursing Diagnosis

The official definition of nursing diagnosis "... a clinical judgement about individual, family, or community responses to actual or potential health problems/life processes. It provides the basis for the selection of nursing interventions to achieve outcomes for which the nurse is accountable" (NANDA-I, 2005, p. 277). In this nursing diagnosis step, a nurse would use clinical reasoning to recognize, sort and organize the patients' need to formulate an appropriate nursing diagnosis. Benner (2010) stated clinical reasoning is the ability to think through a clinical situation as it changes, while taking into account the context and what is important to the patient and their family. Furthermore, the nurse will use the nursing diagnoses taken from the NANDA-I. In light to this matter, the use of NANDA international diagnostic system which used the standardized names of the nursing diagnosis with numerical codes and definitions to execute a confirmed diagnostic conclusion for the patients. As of today, the use of nursing diagnosis in the healthcare centres is common globally (Zamanzadeh, Valizadeh, Tabrizi, Behshid, & Lofti, 2015).

2.4.2.2 Types of Nursing Diagnosis

There are five types of nursing diagnosis such as an actual diagnosis, potential/risk nursing diagnosis, wellness diagnosis, possible nursing diagnosis and syndrome diagnosis (Ackley & Ladwig, 2014). The actual diagnosis is determined on the patients' problem during the nursing assessment based on the presence of clinical manifestations; the risk nursing diagnosis is the presence of risk factors indicating a problem which might not be existing in a clinical judgement; the wellness diagnosis refers to patients 'responses who

have readiness for enhancement; the possible nursing diagnosis requires more data either to support or refute an evidence about a health problem which is incomplete or unclear; and the syndrome diagnosis is a diagnosis which is associated with a group of other diagnoses (Ackley & Ladwig, 2014). Hence, when selecting a diagnosis it is by using the nurses' cognitive and clinical judgement to consider the most appropriate type of nursing diagnosis or the patients' nursing care plan (Gallagher-Lepak, 2014).

2.4.2.3 Differences between Nursing Diagnosis and Medical Diagnosis

Chiffi and Zanotti (2015) stated the key aspect in health care practice is diagnosis, whereby the different domains of the health sciences, this term 'diagnosis' is used to indicate either the outcome of a diagnostic process, or the set of the adopted process leading to the outcome. Hence, the nursing diagnosis is even more robust for the nursing profession as it is different from the medical diagnosis. Nurses are accountable for the nursing diagnoses which are determined only by the nurses. The critical comparison between medical and nursing diagnoses concluded that the 'medical diagnosis' can be established without the patient's being actively involved as it is basically the alteration in biological and functional aspects (Chiffi & Zanotti, 2015). The differences between Nursing Diagnosis and Medical Diagnosis are compared in the Table 2.1 (Berman et al., 2008, p. 198).

Table 2.1. Differences between Nursing and Medical Diagnoses

Nursing Diagnoses	Medical Diagnoses
Is a statement of nursing judgement and refers to a condition that nurses, by virtue of their education, experience, and expertise, are licensed to treat.	Is made by a physician and refers to a condition that only a physician can treat.
Describe the human response, a patient’s physical, sociocultural, psychological, and spiritual responses to an illness or a health problem. Nursing diagnoses change as the patient’s responses change.	Refer to disease processes- specific pathophysiologic responses that are fairly uniform from one patient to another. A patient’s medical diagnosis remains the same for as long as the disease process is present.
Relate to the nurse’s independent functions which are the areas of health care that are unique to nursing and separate from medical management.	

A nursing diagnosis often deals with actual or potential patients’ responses to health problems, whereas a medical diagnosis deals with disease, illness and injuries (Ackley & Ladwig, 2014). For example, a medical diagnosis for a patient as cerebrovascular attack (stroke) details information about the patient’s pathology. However, the nursing diagnosis for this patient with stroke can provide more holistic understanding of the impact of stroke. For instance the nursing diagnosis of impaired verbal communication, risk for falls and powerlessness are formulated based on the patients’ signs and symptoms.

Nursing diagnosis describes the human response, a patient's physical, sociocultural, psychological, and spiritual responses to an illness or a health problem but medical diagnosis refers to disease processes specific pathophysiologic responses that are fairly uniform from one patient to another (Berman et al., 2008). Nursing diagnoses change as the patient's responses change. However, a patient's medical diagnosis remains the same for as long as the disease process is present (Berman et al., 2008). Having nursing diagnosis relate to the nurse's independent functions which are the areas of health care that are unique to nursing and separate from medical management (Herdman & Kamitsuru, 2014).

On the other hand the 'nursing diagnoses' focused on the patients social and humanistic domains including patient/family/community participations. Thus, the goals of medical and nursing diagnoses differ to the context of the patient. Each of the nurses and nursing students must play their important role to sustain nursing process as part of the patient's care plan. In light to this, it is the responsibilities of the nurse educators, managers and clinical facilitators to enhance a sound understanding, positive attitude and competent skills for their nursing students to utilize nursing process as part of their task for the patient care (Lunney, 2007). In this regard, Herdman and Kamitsuru (2018) pointed the importance of nursing diagnosis which is used to treat the patient and his family, while a medical diagnosis belongs to the patient.

In the nursing profession, all level of nurses use nursing diagnoses as the basis for providing adequate, efficient and essential high quality nursing care (Lunney, 2007). An adverse effect on the quality of patient care can be forecast if nurses formulate nursing

diagnosis which is inaccurate. Accurate diagnoses describe a patient's problem, related factors (etiology), and defining characteristics (signs and symptoms) (Herdman & Kamitsuru, 2014). Florin, Ehrenberg and Ehnfors (2005) stated that nursing diagnosis should be written in unambiguous and clear language because of their critical relevance in the management of patient care. However, stating a problem in terms of its label without related factors and defining characteristics is a source of interpretation errors (Lunney, 2007).

Knowledge is an important factor to influence nursing students' diagnostic processes. Thus, Hasegawa, Ogasawara and Katz (2007) and Ozsoy and Ardahan (2007) suggested that students might diagnose ailments more systematically if they had access to knowledge sources. Ready knowledge is knowledge that was acquired earlier and can be recalled by an individual but the knowledge sources can be obtained from handbooks, protocols, datasets, assessment formats, and clinical paths. However, for nursing diagnoses, knowledge sources are useful for helping nursing professionals to formulate standardized terminology based on the NANDA-I (Paans, Sermeus, Nieweg, & Van der Schans, 2010). Prior knowledge of key concepts of nursing diagnostic assessment is necessary to allow the nurses to identify patterns in their patients' data to diagnose and differentiate accurately (Herdman & Kamitsuru, 2014).

2.4.2.4 Components of Nursing Diagnosis

The nursing diagnosis label is a concise term that represents a pattern of related cues which may have two or three parts (Ackley & Ladwig, 2014). The two-part system consists of the nursing diagnosis from NANDA-I and the “related to” etiology (r/t) statement. Herdman & Kamitsuru (2018) stated the related factors are an integral part of all problem-focused nursing diagnosis such as etiologies, circumstances or influences which have some connection with the nursing diagnosis. However, the three-part system which is the PES-format (problem, etiology and symptoms) has another additional “evidenced by” symptoms (e/b) statement. The diagnostic label describes the patient’s health problem clear and concise for which nursing therapy is given to achieve desired outcomes. Moreover, using the PES-format has a main positive effect on the accuracy of the nursing diagnoses, Paans et al. (2012).

At this juncture, the nurse adds specified words known as qualifiers in NANDA labels as to give additional meaning to the nursing diagnosis. Those qualifiers words are for example: Deficient (inadequate in amount, quality, or degree; not sufficient; incomplete); Impaired (made worse, weakened, damaged, reduced, deteriorated); Decreased (lesser in size, amount, or degree); Ineffective (not producing the desired effect) and Compromised (to make vulnerable to threat) (Berman et al., 2008, p. 197). For an example when the nurse states the area in which the problem occurs for a patient such as Deficient Knowledge (Medications) or Deficient Knowledge (Dietary Adjustments). These nursing diagnoses implied two different meaning of the nursing diagnoses. One indicate inadequate knowledge on medications and the other on dietary intake for a patient.

2.4.3 Step III. Planning

The planning takes place once the diagnoses are identified and prioritized accordingly to determine the nursing care priorities. According to Gallagher-Lepak (2014), “nursing diagnoses are used to identify intended outcomes of care and plan nursing-specific interventions sequentially” (p. 27). Hence, in the planning phase the outcomes need to be identified before interventions are determined. This is to ensure the plan of the intended outcomes of care for the nursing diagnosis refers to the behavior by the patient, family or community.

2.4.4 Step IV. Intervention

Meanwhile, an intervention is defined as “any treatment, based upon clinical judgement and knowledge that a nurse performs to enhance patient/client outcomes” (Gallagher-Lepak, 2014). Nurses using their nursing knowledge perform both independent and interdisciplinary interventions which at times overlap with care provided by other healthcare professionals such as physician or dietician. For example, the nursing diagnosis for increased blood glucose level is formulated as risk for unstable blood glucose. The nursing interventions are implemented to treat this condition because it is blood glucose management is a concept important to nurse. However, in comparison to diabetes mellitus which is a medical diagnosis, the nurses provide both independent and interdisciplinary interventions to diabetic patients with actual or risk problems.

2.4.5 Step V. Evaluation

The accuracy of the nursing diagnoses is evaluated continuously as the patient status is assessed between assessment and nursing diagnosis. Evaluation begins to occur at each step in the nursing process, as soon as once the plan care has been implemented (Herdman, 2014). Similarly, the effectiveness of interventions and achievement of identified outcomes are periodically assessed. Evaluation define a patient condition at a certain point in time and may indicate improvement or deterioration of the state compared to a previous evaluation of the patient (Moorhead, Johnson, Maas, & Swanson, 2013).

2.5 Knowledge on Nursing Diagnosis

Florin et al. (2005) conducted a study using pre and post-test design which consisted a 3-hour educational program on nursing diagnosis. Their findings noted that quality of nursing diagnostic statements improved significantly in their experimental groups. Similarly, a study by Thoroddsen and Ehnfors (2006) using pre and post-test on nursing diagnosis revealed that there was an increased and complete nursing diagnoses for patient's documentation after the implementation of the Functional Health Patterns for the patient's assessment. In line with this study, Muller-Staub et al. (2007 & 2008) study on evaluating the effects of Nursing Diagnostics Educational Program (NDEP) found that with the guided clinical reasoning program significantly improved the formulation of nursing diagnosis and identification of signs/symptoms and correct aetiologies. Apparently, these studies showed that intervention study can help the nurses to improve their nursing diagnostics skill and proper nursing documentation.

Hasegawa, Ogasawara and Katz (2007) use two written case studies to measure the diagnostic competencies among nurses from nine hospitals in Japan. These authors found that their Japanese nurses as the respondents in general did not perform satisfactory levels of diagnostic competency. Those factors which influenced them were the length of clinical experiences; frequency of studying nursing diagnosis and decision-making responsibilities. Paganin, Moraes, Pokorski and Rabelo (2008) in their cross-sectional study to identify factors that inhibit the use of nursing language found that it was the workload level; nurse patient ratio; administrative tasks; previous nursing diagnosis experiences and theoretical training. Hence, three factors from the institutional, professional and personal can precede an impact on nurses and their ability to formulate nursing diagnoses.

Another cross-sectional study in Japan by Takahashi, Barros, Michel and de Souza (2008) showed that to identify the difficulties and facilities among nurses when applying the nursing process, it was with the nursing diagnoses phase and evaluation. These were due to lack of theoretical knowledge and practical exercises. At this juncture, Ofi and Sowunnei (2012) study noted similar outcomes regarding nursing documentation of nursing diagnosis in Nigeria. The authors revealed nurses encountered difficulties in nursing process phases, which were related to lack of time, knowledge deficit and need for extensive writing in the nursing care plan. In line with this thought, Pereira et al. (2015) found nurses had more difficulty in formulating correct nursing diagnosis of fatigue for a patient with heart failure.

Thoroddsen, Ehnfors and Ehrenberg (2010) claimed in nursing knowledge, the core of nurses common understanding is using the standard nursing languages. In their study in Sweden, the most common nursing diagnosis across all specialties represent basic human needs of patients but were different in the clinical specialty areas. This suggest that standard nursing languages are capable of distinguish between specialties area. Hence, perioperative nursing is specialized nursing area, which also requires nursing process and nursing diagnosis for the patients in recovery area at operation theatre.

In line with this thought, Juntilla, Hupli and Salanterä (2010) in Finland conducted a study to validate the use of nursing diagnosis in perioperative documentation using the first Finnish version of Perioperative Nursing Data Set (PNDS). Their findings concluded the PNDS was sensitive to describe preoperative care nursing diagnosis; whereby during intraoperative phase nurses focused on physiological nursing diagnosis and during postoperative nurses refined to recovery nursing diagnosis.

Burns, O'Donnell and Artman (2010) had tested the first year nursing students' efficacy on nursing process using a high-fidelity stimulation pre and post simulation. The students' knowledge and attitude changed in post simulation assessments. Hence, the lesson learnt that clinical competency in nurses can be improved with nursing process - based simulation training. Another similar study by Collins (2013) in India using a 12 hour educational course on nursing diagnoses, critical thinking and clinical reasoning revealed positive attitude toward nursing diagnosis. The instrument used was three written medical-

surgical case studies. Hence, continuing education strategies by nurse educators to enhance knowledge level among practical nurses are beneficial.

Whereas, another study by Aydin and Akansel (2013) found the year two nursing students can determine 42 nursing diagnosis and gone beyond to the domains of cognitive-perceptive. However, they tend to use some phrases as nursing diagnoses which were not in the NANDA – I taxonomy and this revealed that they had some difficulty to select the correct nursing diagnosis although in their second year. But previous study by Yont, Khorshid and Eser (2009) found a variety of opinions regarding opinions on nursing diagnosis among nursing students in year two, three and four. Although nursing process is taught in nursing schools, only 58.1% agreed that nursing diagnosis are a priority in nursing; those can identify nursing diagnosis for their patients, 32.1% and they had difficulty to plan intervention when using nursing diagnosis was 31.5%. The nursing diagnosis most used by the students in this study was risk for infection.

Another interesting study by Noh and Lee (2015) in Korea among diploma students showed the total number of nursing diagnoses selected by them were 84 out of the 202 NANDA – I diagnoses which were better than the previous studies by Min (1995) and Yang (2007). In their study the common nursing diagnosis identified was acute pain which was relevant because this study was conducted in the medical and surgical wards. Thus, nursing students perceived pain management as priority to intervene. Similarly Palese, Silvestre, Valoppi and Tomietto (2009) study in Italy showed their 10-year retrospective study of teaching nursing diagnosis to degree students showed significant improvement to

identify accurately nursing diagnosis from NANDA-I taxonomy as they progressed from academic years.

The number of nursing diagnoses identified by students increased from the first year to the third year to a total of 75 nursing diagnoses and the most common nursing diagnoses used were pain, sleep deprivation, skin impairment, nutritional imbalances, and nausea and self-care deficits. Ogunfowokan, Oluwatosin, Olajubu, Alao and Faremi (2013) conducted a study in Nigeria to final year nursing student's perception on nursing diagnosis in community settings. They found students were able to identify and use appropriate nursing diagnosis at community settings. However, the effectiveness of nursing diagnosis was hindered due to shortage of nursing staff and knowledge deficit among nursing staff.

Although there was abundant quantitative research on nursing process or nursing diagnosis, there was also a handful of qualitative research papers on these topics. Apparently, from the literature review a few studies have been retrieved for discussion. Lee (2005) in Taiwan explored factors affecting nurses to use nursing diagnoses in charting standard charted plans. This in-depth one-on-one interview with 12 nurses found in general nurses adhered to Nursing Process format and charting sequence to complete care plans. Nevertheless, the nurses also need to match patient condition to fit nursing diagnosis available in the forms; used objective data to describe patient's condition; skip or give unrealistic goal and choose same evaluation to meet hospital requirements. Hence, to improve the quality of nursing documentation, suggestion to use educational programs to enhance nurse's ability to utilize nursing diagnosis.

On the other end, Lima and Kurcgant (2006) explored the meaning of nursing diagnosis implementation for nurses in Brazil. The findings showed nurses felt valued and respected because their opinion and decision regarding the contents of the new instrument are heard. They expressed positive feelings for the change process and believed they can overcome difficulties. Ledesma-Delgado and Mendes (2009) revealed that to understand the meaning of nursing process by nurses, they experienced nursing process as routine care but did not perform as what was taught in their nurse training years. Thus, only incorporate care protocols in clinical areas and revealing a gap between education and service which need further strategies to minimize this distance.

Jarrin (2010) explored the core elements of U.S. Nurse Practice Acts and review the use of nursing diagnosis in U.S. There were six major themes identified such as care in the context of nursing process; supervision and delegation of nursing; executing the medical regimen; health maintenance and prevention; teaching nursing theory and practice. Therefore, the number of practice acts utilizing the nursing diagnosis language remained constant over the past decade. In the same vein, Carpenito-Moyet (2010) described that the classroom and clinical strategies which guide the nursing students to enhance focus on nursing diagnoses and use nursing care plan can produce desired curriculum objectives, and achievable practice utilization.

A few antecedents to accurate use of nursing diagnosis are specific to education on diagnosis use, computerized systems, and NANDA-I diagnosis classification. In line with this thought, Kurashima, Kobayashi, Toyabe and Akazawa (2008) randomized study on

accuracy and efficiency of computer-aided nursing diagnosis found that using a computer aid significantly shortens the time needed to derive nursing diagnosis. Similarly, Dahm and Wadensten (2008) in Sweden survey design on nurses' knowledge and opinions about standardized care plans using electronic health records found it enabled provision of quality patient care and decreased documentation time.

Halverson et al. (2011) conducted a study to identify perceptions of nurses towards the usage of nursing diagnosis over 14 years study in Minnesota revealed negative perception to nursing diagnosis. This result differs from the original study which documented a positive perception to nursing diagnosis. At this juncture, it implied that if nurses are varied in their perceptions to nursing diagnosis, hence a common diagnostic language and standard care plan are questionable. Kim and Shin (2016) conducted a study to identify the effects of nursing process-based stimulation on knowledge, attitude and practice for clinical nurses. The experimental group which was trained by the nursing process-based stimulation training program showed improved knowledge, attitude and skills for clinical judgement nursing process.

Therefore, it is apparent that the relationship or the degree of contact or exposure towards nursing diagnosis is an important consideration in its utilization. Romero-Sanchez et al. (2013) have noted in their study there was a remarkable difference for all variables related to the degree of contact with nursing diagnosis. The cluster of nurses with positive attitude had a closer interaction with nursing diagnosis than the other groups with neutral and negative attitudes. Hence, nursing diagnoses are used by nurses to explain independent

clinical judgements of their patients to provide independent nursing interventions (Herdman & Kamitsuru, 2018).

In line with this thought, Paans et al. (2012) reported the effect of knowledge sources on the accuracy of nursing diagnoses among nurses whereby the PES (problem, aetiology and symptoms) format increases accuracy in nursing diagnosis. This finding implied further that case-related knowledge, critical thinking and reasoning skills must be in cooperated in the topic nursing process and nursing diagnosis. Thus, for nursing students or nurses to avoid inaccurate nursing diagnoses and incorrect interventions in their clinical practice. Lunney (2008) also pointed that accurate formulation of nursing diagnoses guide is essential to guide nursing interventions for the patients.

On the other hand, Mynarikova and Ziakova (2014) conducted a study to determine the error rate and frequency of nursing diagnoses used in clinical practice. It showed nurses tend to use more nursing diagnoses regarding dysfunctional physical needs compared to psychosocial and spiritual nursing diagnoses were absent. In addition, it also found in this study there were many factors influencing the accuracy and occurrence of nursing diagnoses in clinical practice such as education level of nurses, experience in nursing diagnostics, organization of nursing care, technologies of the nursing documentation and ratio of staffing to patient.

At this juncture, nursing diagnoses play an important role for the patient. Nurses equipped with sound knowledge level on nursing diagnoses would be able to identify from the assessment phase accurate nursing diagnoses for their patients. Subsequently, these level of efficiency of nurses identifying accurate nursing diagnoses enhanced the management of their patients. The importance of nursing diagnosis further pointed out by Weir-Hughes (2007) that how nursing diagnoses can influence lengths of inpatient stay and cost efficiency. The findings in a surgical revealed the mean length of stay for the patients was ten days. However, in contrast Dean, Finan and Kline (2001) showed that mean length of stay for the patients was six days. Therefore, Weir-Hughes (2007) concluded all nursing care plan for the patients must be based on the nursing diagnoses to ensure the hospital to be cost efficient in the relation to the length hospitalization.

Hunter and Hunter (2012) concluded that the development of nursing diagnoses can help to improve overall patient safety, save their lives and promote best practices. In their study for the revising of the nursing diagnosis “Risk for infection” found many benefits to using nursing diagnoses such as providing a road map to care from novice to expert. In addition nursing diagnoses are evidenced based, provide expected outcomes and allow for a holistic patient care. Hence, it was important to disseminate the nursing students with adequate knowledge to develop an individualised care plan with specific nursing diagnoses to treat the actual problems and prevent new problems from occurring. At this point, Wang, Hailey and Yu (2011) and World Alliance for Patient Safety (2008) indicated that lack of accurate nursing diagnoses and documentation may lead to adverse events which subsequently caused hindrance to the quality of care for the patient.

2.6 Video Assisted Teaching

In education in order to attain meaningful learning, two important aspects such as retention and transfer of learning are of concern for educators (Mayer, 2002). The ability to remember material at some later time as the same way it was presented early is called Retention and Transfer which is the ability to use what was learned to solve new problems, questions or new subject matters (Mayer & Wittrock, 1996 as cited in Mayer, 2002). Thus, over the years in nursing education, many educational innovations have been developed and used to enhance retention and transfer of learning in nursing education. Webb, Clough, O'Reilly, Wilmott and Witham (2017) systematic review found seven distinct educational innovations such as online resources; podcasts and social media; computer based assessment; audience response systems; e-portfolios; nurse faculty adoption e-learning and simulation.

The current search on educational innovation using videos as one of the learning resources in nursing education to formulate nursing diagnosis showed limited documented studies. However, there were many studies using videos to enhance nursing procedures. Holland et al. (2013) mixed method study on first year undergraduate nursing students using online video in clinical skills education of oral medication administration. The control group received standard teaching using lectures and skills classes whereas the intervention group received the standard teaching and unlimited access to an online video clip of medication administration. Their findings revealed the intervention group with an online video and lectures had improvement in student's assessment and satisfaction ratings.

Watts, Rush and Wright (2009) conducted a study to evaluate first year nursing students' ability to assess psychomotor skills using videotape for wound dressing procedure. Similarly, their findings also found that using a videotape approach allows nursing students' to observe their skill performance and begin to develop the mental block which were the building blocks of expert practice. Thus, this approach can facilitate the development of a pattern of self-regulated learning which is critical to professional development.

Kennedy, Pallikkathayil and Warren (2007) conducted the Simulated E-health Delivery System (SEEDS) project to describe the experiences and behaviours of first year nursing students to develop a care plan for case study patients. The project involves observation of the four SEEDs seminar session with simultaneous videotaping which are viewed several times by the nursing students. The findings showed that students viewed the SEEDS classes are fun, interactive, seeing-hearing-doing experiences which enable them to theory to practice.

This technology provided an interactive space to develop nursing process skills by linking assessment data from case studies with foundational concept in nursing. Similarly, Epstein et al. (2003) reported two classroom video projects which intended to promote active nursing student involvement for their medical-surgical nursing course. Students appreciated this variation in instructional method and claimed their ability for retention learning because of their ability to visualize the projects.

Benner (1984) supported simulations can be more effective as it requires the learners' action and decision to enhance their cognitive as well as their psychomotor. Apparently, simulation has become an integral part of the nursing education because nurse educators sought effective ways to help nursing students to become competent nurses (Nehring, 2009). Another research by Chau et al. (2001) to determine the effects of videotaped vignettes on enhancing first and second year nursing students' critical thinking ability. The results of this study showed that the use of videotaped vignettes was helpful in improving knowledge, satisfaction with this new approach and post-test critical thinking ability being higher than pre-test but not significant. Thus, similarly Faulcon (2015) reported video-recording or using Smartphone video camera to record the simulation and playback enhanced students' satisfaction and confidence level.

Baxter, Danesh, Landeen and Norman (2010) examined the effectiveness of videotape training versus hands-on instruction among nursing students to respond to emergency clinical situations. The results from this finding revealed significant improvement in clinical performance by the videotape training group. Thus, video-based learning can provide adequate skill acquisition to the guided and simulator-based instruction in a simulated setting. In contrast, Scaria, Valsaraj and Pias (2013) study on the effectiveness of video teaching over lecture cum demonstration in improving knowledge and skill of nursing students on antenatal examination did not support the previous studies. In their study video as well as lecture cum demonstration were equally effective in improving the knowledge and skill of nursing students on antenatal examination.

Nursing educators need to try innovative strategies to enhance the teaching and learning of today's digital savvy learner. In this regard, Carver (2016) conducted a study comparing the use of an instructional peer video on a mobile device to standard practice in the skills lab to teach the skill of male and female urinary catheterization and the removal of a urinary catheter. Results indicated the intervention of peer video via mobile technology was perceived overall as positive to the learner. However, both the groups did not revealed any difference after the lab in perceived competence, confidence, or satisfaction. According to Vogt, Schaffner, Ribar, and Chavez (2010) the advancement of technology growth engage students to require and expect different methods to accommodate their learning needs.

Horton (2011) performed a study to determine if teaching breast health with comparing interactive teaching via video with traditional didactic methods would affect the breast health knowledge and beliefs of adolescent females. The findings concluded that students who used video had higher knowledge retention, higher perceptions of benefits of breast self-awareness and had lower perceived barriers to breast self-examination. Thus, interactive learning via video will require more involvement of the student, thereby, guiding the student with the application of decision making in real life situations.

Teaching psychomotor skills to nursing students requires theoretical input as well as demonstration and return demonstration. This is to ensure that nursing students are better prepared for their clinical practice. In light to this, nurse educators will add on teaching approaches such as lectures with videotapes or other simulation strategies. Hence, Beeson

and King (1999) have also earlier compared the effects of interactive video and didactic lecture/linear video on nursing students' factual knowledge about blood pressure. The findings showed nursing students taught by the didactic lecture/linear video ($M=92.43$) approach gained significantly more factual knowledge than students taught by interactive video ($M=88.30$). Meanwhile, the performance of blood pressure measurement between both groups did not show any significant difference. The didactic lecture/linear video nursing students scored ($M=90.49$) and the interactive video nursing students ($M=93.11$). Thus, in this study it was concluded that interactive video was as effective as didactic lecture/linear video in teaching the measurement of blood pressure monitoring.

Bahar, Arslan, Gokgoz, Ak and Kaya (2017) randomized controlled trial study was conducted to examine the effects of the use of supported educational videos on the nursing student's skills to administer parenteral medication. The parenteral treatment training was given to the control group only with the demonstration method while the experimental group was trained using educational videos in addition to the demonstration method. The objective structured clinical examination post-test scores of the experimental group with supported educational videos were found to be higher than control group with just demonstration method. In addition, most of the students who were experimental group were quite satisfied with the educational videos. It is thus imperative that educational videos education and conventional teaching methods will contribute to the training nursing skills education.

Herron, Powers, Mullen and Burkhart (2019) study sought to determine if using a video simulated unfolding case study as part of the didactic classroom, as compared to a traditional written case study. The control group received a written case study, while the intervention group received video simulation of the same case study. The percent of knowledge questions answered correctly was higher for the video simulation group. This results suggest the use of video simulation in the classroom may deepen students' understanding of classroom content and provide an additional mode for learning to enhance classroom lecture. At this juncture, the use of video simulation to augment classroom teaching is suggested as a strategy for engaging learners.

In a quasi-experimental study, Ostovar et al. (2019) found that the effects of debriefing on psychomotor skills between oral debriefing and video-assisted debriefing promoted nursing students' performance. However, it did not showed any significant difference between the two methods. This study findings were consistent with previous studies by Grant et al. (2014) and Zulkosky (2012) revealing that the process of debriefing either by oral or video assisted could improve nursing students psychomotor skills in simulation based learning experience. Hence, the findings of this study supported the results of previous studies, which confirmed the usefulness of simulation with video to improve clinical skills of the nursing students. Apparently, according to Bahar et al. (2017) which supported that educational videos have positive contributions to the skills practice for large student group because they are innovative educational materials. In addition, videos may be used in conjunction with didactic method without replacing them in the psychomotor training for nursing students.

Debriefing is recommended in the literature as a key component of simulation, thus Grant, Dawkins, Molhook, Keltner and Van Ce (2014) compared the effectiveness of video-assisted oral debriefing and oral debriefing alone on behaviours by undergraduate nursing students during high-fidelity simulation. In this study, it was found both human patient simulator practice and guidance using video-assisted oral debriefing and oral debriefing alone appeared to be comparable regarding behaviours, regardless of roles, type of scenarios, and student simulation team membership. These findings suggest that nurse educators may use either video-assisted oral debriefing or oral debriefing alone to debrief undergraduate nursing students during high-fidelity simulation.

However, Ball (2000) concluded that the proposed video teaching method was a viable teaching tool that should not replace the didactic approach, especially with undergraduates, but instead be used to augment the traditional lecture/discussion method. In this study, to determine the effects of two methods of teaching family therapy on students' motivation, interest, and learning did show a significant difference in the amount of motivation, favouring the didactic method and contrary to the expected advantage of the video teaching method. But in contrast, the use of simulation improved knowledge retention in nursing students studying cerebral vascular accident (Parker, 2015). This cross sectional interventional project examined the use of simulation to improve knowledge retention in the intervention group being exposed to a simulation scenario along with usual classroom lecture and reading. Retention of classroom material was assessed in intervention and control groups by pretest and repeated post-test at one and six weeks

which revealed the intervention group were significantly higher than the control group indicating the simulation experience increased retention of classroom learning.

van Duijn, Swanick, Donald and Kroog (2014) conducted a study to compare student learning of cervical psychomotor skills via online video instruction versus traditional face-to-face instruction in physical therapist education. The results revealed that there were no statistically significant differences in group performance and comparison between two methods of instruction. They concluded online video may serve as an effective method of instruction of advanced clinical psychomotor skills to enhance traditional classroom experiences.

Meanwhile, a study to assess the effectiveness of video assisted teaching on knowledge and practice of using metered dose inhaler with spacer among patients with bronchial asthma was conducted Pushpakala and Chako (2015). Their study results showed that in pre-test 77% of patient had moderate level of knowledge, 23% had inadequate level of knowledge and in post-test 92% of adequate knowledge and only 8% had moderate knowledge. Regarding practice, the results shows that in pre-test 60% of patient had poor practice, 40% had moderate practice and in post-test they improve their practice to 92% of excellent practice and 8% of moderate practice. This indicated video assisted teaching was effective in increasing the knowledge and practice of using metered dose inhaler with spacer in bronchial asthma patients.

Similarly a study to assess effectiveness of video assisted teaching program on knowledge regarding non pharmacological pain relieving intervention for children among staff nurses was explored by Rajesh and Swamy (2014). In their pre-test more than half (53.3%) of the staff nurses had average knowledge, 40% of them had poor knowledge and 6.7% had good knowledge regarding non-pharmacological pain relieving interventions before the video assisted teaching program, but in the post test there was significant improvement in the knowledge scores 80% of nurses had good knowledge. Hence, the video assisted teaching regarding non pharmacological pain relieving interventions for children is effective in rendering knowledge and bringing awareness.

Udaykar and Udaykar (2013) evaluated a quasi-experimental study to assess effectiveness of video assisted teaching programme on prevention of swine flu among students. The post test mean score of knowledge level of video assisted teaching program 26.13($SD=4.14$) was higher than the pretest mean score 13 ($SD=3.26$). So in conclusion the video assisted teaching was highly effective in increasing knowledge of students regarding prevention of swine flu.

Apparently, Vidhya (2014) conducted a study to assess the effectiveness of video assisted teaching programme on knowledge regarding mental illness among adolescent. On the pre-test among 60 adolescent 51 had inadequate knowledge, 9 had moderately adequate knowledge. However, post test showed an improvement score of mean value was 9.88 ($SD= 2.99$) which were statistically significant. It revealed that the video assisted teaching

programme was effective and showed improvement in their self-confidence and improving their level of knowledge regarding mental illness.

Ninan, Pandian and Arulappan (2015) reported a study to determine the effectiveness of video assisted teaching programme on knowledge and health beliefs regarding osteoporosis among women. The researchers adopted quasi experimental pre-test - post-test control group design for the study where the pre and post-test level of knowledge and health beliefs were assessed with self-administered structured knowledge questionnaire and Osteoporosis Health Belief Scale. The women in the study group were given video teaching on osteoporosis lasting for 20 minutes, where 5 women were given teaching at a time and their doubts and misconceptions were clarified through discussion. The results showed the mean post-test knowledge and health beliefs score were higher than mean pre-test knowledge and health beliefs score. Hence, video assisted teaching was found to be effective in improving the knowledge of women by 39.5% and health beliefs by 25.7%.

Lalmuanpuii, Zagade, Mohite and Shinde (2013) presented a study to evaluate the effectiveness of video assisted teaching program regarding knowledge on biomedical waste management among staff nurses. It was a one group pre-test post-test design and evaluative approach were selected for this study among 60 staff nurses. The pre-test was conducted before administration of video assisted teaching program and post-test was conducted after seven days. It was observed that after administering the video assisted teaching program the mean of total knowledge score was increased to 26.03 from 17.38 that of pre-test

knowledge mean score and extremely significant ($p < 0.0001$). Based on the analysis of findings of the study there was evident increase in the knowledge scores among staff nurses in the study after administration of video assisted teaching program.

A study to evaluate the video assisted teaching module (VATM) on care of dementia patients developed for bachelor nursing students in a selected college of nursing was conducted by Austin and Balasubramanian (2012). From the findings it was concluded that the video-assisted teaching module regarding care of dementia patients was effective to improve the knowledge of third year nursing students. It was evident because prior to the implementation of VATM the pre-test assessment revealed that most (96%) of third year nursing students had average knowledge and only 4% had poor knowledge. The post-test revealed that 72% of them had gained good knowledge, 28% of them gained very good knowledge. The total mean percentage of pre-test knowledge score was 40.68% and the mean post-test knowledge score was 73.25% showing an effectiveness of 32.57%. Significance of difference between pre-test and post-test was statistically tested using paired t test and it was found very significant ($p < 0.05$).

2.7 Didactic Lecture

Didactic lectures are powerful method of delivering information to a large number of students (Aljezawi & Albashtawy, 2015). In addition, Khan and Coomarasamy (2006) pointed out that didactic lecture is a scientific oral delivery of information by a competent person at many levels of education. In nursing education an alternative to the traditional format in basic sciences education was explored by Majeed (2014). In this study the effectiveness of case-based was compared with didactic teaching for renal physiology subject for nursing students. The results of this study showed that the nursing students' performance in test was statistically significant after didactic lectures ($M=17.53$) than after case-based teaching ($M=16.47$). However, the nursing students (65-72%) feedback indicated case-based teaching improve their knowledge in physiology better than lectures.

Meanwhile, Saini, Jasbir, Mandeep, Thappar and Bindu (2015) study on the effect of power point and traditional lecture on students' achievement in nursing revealed that traditional lecture was significantly better learning for immediate and retention than the power point assisted lecture. Aljezawi and Albashtawy (2015) conducted a study to compare students' performance, satisfaction and retention of knowledge using quiz game teaching versus didactic lecture with powerpoint. Their findings revealed that the quiz game format was well accepted, more satisfying and promoted greater information retention teaching method by the students.

In the same way, Holland et al. (2013) contends new developments in clinical skills in nursing education must be aligned to improve in the safety of drug administration. Hence

in this study the control group received didactic lectures and skills classes, whereas the intervention group received didactic lectures and unlimited access to an online video of medications administration. The results showed that the intervention group had significantly more pass in the assessment and satisfaction with the video. Similarly, Cardoso et al. (2012) study on educational video-integrated training on venous access skill reported an increased knowledge levels among the nursing students. At this juncture, Albaradie (2018) contended utilization of computer-based learning and teaching with videos enables students to record the lecture as well as allows them to watch them at their own flexible space. Thus, it allows students to have mental and physical preparation.

In a similar vein, Courtier, Webb, Phelps and Naeger (2016) supported the use of a didactic lecture over a digital game module. Students in the lecture group had higher test scores, reported greater understanding and recall of the material than students in the game group. Students in the lecture group perceived the lecture to be more enjoyable and a better use of their time compared to those in the game group. Solymos, OKelly and Walshe (2015) reported their pilot study comparing simulation-based and didactic lecture-based critical care teaching for final-year medical students. Their findings supported that simulation was perceived as more enjoyable by students and there was a greater improvement in post-teaching MCQ among the simulator group, but the baseline scores were higher among didactic group.

An earlier study by Schultze-Mosgau, Zielinski and Lochner (2004) was done to develop a web-based, virtual series of lectures for evidence-based, standardized knowledge

transfer independent of location and time with possibilities for interactive participation and a concluding web-based online examination. Their findings concluded the educational outcome, 97% of the students passed the multimedia online examination following the virtual course compared with a previous rate of 85% of passed students attending only didactic lectures. Hence, this indicated that the difference of 12% between both groups of students' warrant the benefit of the new additional teaching concept.

Meanwhile, Reeves and Francis (2000) conducted a comparison between two methods of teaching hospital pharmacists about adverse drug reactions: problem-based learning versus a didactic lecture. The problem-based learning participants demonstrated a significant improvement in the mean rank scores for both the MCQ and the clinical cases analysis sections of the test. However, participants who received the didactic lecture significantly improved only in the MCQ section of the test. No significant differences in either section of the test were detected for the control participants. Thus, the results of this study indicated that problem-based learning has benefits compared to a didactic lecture method in educating pharmacists about adverse drug reactions and enhancing their motivation to report adverse drug reactions.

Razi and Eljavan (2013) study was conducted to compare learning extraoral radiographs of anatomic landmarks through lectures and blended teaching methods. The results showed that there was no significant difference between the mean scores of two taught groups through lecture and computer-assisted learning plus lecture. There was no significant differences in the mean scores between the two groups in the first exam after

teaching ($p= 0.13$), yet it was significant in the second exam (regarding retention) ($p= 0.006$), and average of non-traditional teaching method group (20.89) was higher than that of lecture group (13.48). Therefore, it was concluded that in short-term learning the computer-assisted learning plus lecture was not more effective than the lecture but in long term learning, it was more effective than the lecture. However, Hortsch (2015) argued that the victory of a teaching strategy is very much dependent on the context in which it is offered and the learner behaviour.

Apparently, nursing education must prepare nursing students to be active learners and think critically to provide safe patient care in this digital healthcare world. Thus, Kaddoura (2011) study compared lecture-based teaching and case-based learning programs in terms of critical thinking development among nursing students. The results revealed that the case-based learning participants performed better in the total critical thinking score and all critical thinking subscales than the didactic program participants. Hence, it indicated that students in case-based learning program are more likely to learn to think critically than those in a traditional lecture-based education program. Kaddoura (2011) further suggested that case-based learning might be an effective approach compared to a traditional lecture-based approach for educating nursing students in terms of improving critical thinking skills. This study represents a meaningful, positive outcome for nursing education institutions seeking alternative educational approaches in an attempt to enhance students' critical thinking skills.

The impact of teaching brings a major difference in the learning outcomes in student's learning and more important in providing efficient and effective professionals to the community. Qamar, Ahmad and Niaz (2015) study was to compare two different teaching methods which was didactic lecture and interactive small group discussion (SGD) sessions among undergraduate students of final year. The mean scores were 1006 in the interventional group as compared to 1026 in the non-interventional group ($p < 0.001$). Students consider SGD as a relatively less favoured mode of information transfer owing to multiple factors influencing the learning process of students as opposed to didactic lecturing in their set-up.

In contrast, a study done in Hong Kong by Botelho and O'Donnell, (2001) found students in the interventional group showed higher marks than students in the lecture format ($p = 0.059$). The students expressed a preference for learning and interacting with teachers than colleagues but they concluded that effectiveness of small group teaching may depend on the teaching style in small groups. But in another study done in India, majority of students favoured a judicious mixture of didactic lectures and case-oriented problem solving in tutorial classes to be an efficient modality (Ghosh, 2007).

Ambwani, Vegada, Sidhu and Charan (2017) postulated that integrated teaching method may enhance retention of the knowledge and clinical applicability of the basic sciences as compared to the didactic method. Their study was undertaken to compare the integrated teaching method with the didactic method for the learning ability and clinical applicability of the basic sciences. Majority of the students favoured integrated teaching

for clinical application of basic science and learning of the skill for the future clinical practice. Faculties considered integrated method as a useful method and suggested frequent use of this method. There was no clear difference in knowledge acquisition; however, the students and faculties favoured integrated teaching method in the feedback questionnaire. Meanwhile, Block, Mncube-Barnes, Supan and Agboto (2018) study on student evaluation of a didactic-oriented teaching model in preclinical endodontic was confirmed by the high pass rate scores (98, 100%) in 2012 and 2013 classes. An environment for good practice was established by incorporating the Seven Principles as a didactic framework to evaluate teaching effectiveness.

In 2016, Zahid, Varghese, Mohammed and Adel conducted a study on comparison of the problem based learning-driven with the traditional didactic-lecture-based curricula. The PBL students performed better than the old curriculum students in overall grades, theoretical knowledge base questions and OSCE. The number of the PBL students with scores between 80-90% (grade B) was significantly higher while their number with scores between 60 to 69% (grade C) was significantly lower than the old curriculum students. Similarly, the mean MCQ and the OSCE scores of the new curriculum students were significantly higher ($p = 0.001$ and $p = 0.025$, respectively) than the old curriculum students. Lastly, the old curriculum students found the K2-MCQs to be more ($p = 0.001$) difficult than the single correct answer (K1 type) MCQs while no such difference was found by the new curriculum students.

2.8 Satisfaction with Simulation Teaching

In nursing education one point to consider by the educator is whether the method of teaching and learning provide satisfaction to both learner and teacher. Thus, keeping that issue in mind, many nursing research have been conducted among nursing students' satisfaction level with clinical simulation. Smith and Roehrs (2009) study on the factors correlated with nursing student satisfaction on high fidelity simulation found the objectives of the subject significantly contribute to the level of satisfaction.

Omer (2016) study found that nursing students' satisfaction level were high when the teaching methods and strategies used in simulation being effective and the instructors gave them correct information. Lubbers and Rossman (2017) study revealed that novice students had high level of satisfaction with the fidelity of their simulation experiences. Similarly, in another study by Bahar (2015) in which the effectiveness of video-supported web-based learning for fundamental nursing skills training was examined and found that the satisfaction (96.7%) were among students in the experimental group.

Students expressed satisfaction related to the use of video-based learning in the studies conducted by Pinar, Akalin & Abay, (2016) and Lee et al. (2016). A recent study by Arslan, Ozden, Goktuna and Ayik (2018) reported a significant effect of watching video on nursing students' satisfaction in their basic skills training. However, the effects of interactive video on cognitive achievement and attitude toward learning by Schare, Dunn, Clark, Soled and Gilman (1991) found that the students learning by interactive video

possessed a more positive attitude toward learning than those learning by traditional lecture method of teaching.

Similarly, Holland et al. (2013) study to evaluate online video in clinical skills education of oral medication administration for nursing students. The findings reported that nursing students were satisfied using the online video than didactic lectures. In line with this thought, Johnston, Parker and Fox (2017) revealed that the use of video narratives simulations among nursing students significantly indicated high satisfaction with simulation. The nursing students reported high levels of satisfaction in terms of value, realism and transferability of knowledge when viewing video.

Meanwhile, in the training of nurses the skills for administering parenteral medication is of critical importance for the patient safety. In light to this matter, Bahar et al. (2017) conducted a study to examine the effects of the use of supported educational videos on the nursing student's skills to administer parenteral medication. The results showed that post-test skill scores were higher than the didactic group. In addition the students with educational videos also expressed their satisfaction with this method of teaching. This finding is consistent with the findings of Sayed et al. (2013) and even more so with Kelly et al. (2009), who found that the nursing students receiving training online with videos were more satisfied with the video approach. Nevertheless, Ostovar et al. (2019) also found in their study both oral and video-assisted debriefing methods have a significant positive impact on simulation outcomes as well as yield satisfaction in novice nursing students.

DiGiacomo (2017) simulation study tested the differences in knowledge, satisfaction, and confidence level between junior nursing students who did and did not participate in the postpartum haemorrhage simulation. The results showed that the experimental group performed significantly better in two out of the five questions on student satisfaction. Thus, this study add to the body of knowledge that supports the use of simulation as a teaching strategy in undergraduate nursing education. Similarly, Lee (2014) research on evaluation of human-patient simulation on cardiopulmonary rehabilitation students' self-confidence and learner satisfaction revealed the learning satisfaction levels improved significantly in the group participating in human-patient simulation.

Thornock (2013) study concluded satisfaction with simulation was not only appreciated by the students but also among the educators. Whereby, simulation promoted the achievement of safe patient care during the teaching-learning process using the web-enhanced approach, multi-media learning experiences, online and in-class discussions, and application based scenarios. Royle (2014) posited that in simulations, the participant was generally responsible for their own learning experience through self-direction and motivation. This was in line with an earlier study by Swenty and Eggleston (2011) which indicated that active learning in simulation was important for nursing students learning and knowledge retention. Hence, satisfaction with simulation learning materials or methods must be adhered by the nursing students. This is because in nursing education, simulations are provided as a method for task training or psychomotor skill acquisition. However, the impact of simulation as an innovative technology on nursing education is an ongoing process and debatable.

The use of simulation training to prepare future nurses to be able to provide safe nursing care in today's healthcare system was advocated by the National Advisory Council on Nurse Education and Practice (2010) as cited in Podlinski (2016). Meanwhile Sinclair and Ferguson (2009) reported nursing students in their study showed higher levels of satisfaction, effectiveness and consistency with their learning style when exposed to the combination of lecture and simulation than the control group, who were exposed to lecture as the only method of teaching and learning.

Dearmon et al. (2012) evaluated the effectiveness of a 2-day, simulation-based orientation for baccalaureate nursing students preparing to begin their first clinical experience. The findings indicated a statistically significant increase in knowledge in skills, confidence and satisfaction as a result of participation in simulation-based orientation when first entering the clinical setting and a decrease in anxiety following the orientation activity. Students had a positive attitude about interaction with real patients, faculty, and other students during the experience.

In a recent study by Stayt, Merriman, Ricketts, Morton and Simpson (2015) reported on first year nursing students were randomized either into a control group, where they received a traditional lecture, or an intervention group where they received simulation. Student satisfaction with teaching in the intervention group was significantly more satisfied with their teaching method. Similarly, participants were satisfied with their simulation experiences and on features of the simulation used for assessment and management of deteriorating patient (Liaw, Rethans, Scherpbier & Piyanee, 2011).

2.9 Self-Confidence with Simulation Teaching

One of the qualities important for both nursing students and professional nurses is self-confidence. Since nursing is a service provider profession, these groups of nurses must show a level of self-confidence in their professional duties (Lubbers & Rossman, 2017). Hence, those receiving their nursing care must feel safe and reassured. In so far, White (2009) concluded fostering this attribute among nursing students will benefit the student and the nursing program. Increasing self-confidence with simulation will help them accomplish to provide safe care for their patients.

Apparently nursing knowledge can be built in many ways but it is self-confidence being the main phenomenon of interest to retain successes. According to Lubbers and Rossman (2016) nursing students are being exposed to simulation in their nursing education with created scenarios of patient case study which begin with them hearing an introduction to the scene particulars. This enables nursing students to choose actions and communication skills to elicit additional information which they need to act on their patients appropriately. Furthermore, Perry (2011) contends self-confidence is a crucial practice element in nursing education and practice. Lack of self-confidence might impact on the overall quality of nursing care to patients (Aoyama, Tamura, Ishikawa, Yada & Miyawaki, 2013).

Moreover, there are several other studies on nursing students' self-confidence following their nursing clinical simulation experience showed increased level of their self-confidence (Lubbers & Rossman, 2017; Mirzakhani & Shorab, 2015; Tosterud et al., 2013;

Smith & Roehrs, 2009; Bambini, Washburn, & Perkins, 2009). These clinical simulations were on medium to high fidelity simulation to improve and retain knowledge to perform clinical skills in a clinical practice. DiGiacomo (2017) postpartum haemorrhage simulation study tested the differences of self-confidence level between junior nursing students who were given simulation and lecture. The results showed that the simulation group performed significantly better in five out of the nine questions on student self-confidence. Thus supports the use of simulation as a teaching strategy in undergraduate nursing education.

According to Lacue (2017) simulation provides safe learning environment for nursing students to practice essential skills and ultimately increase their confidence of the acquired skills. In light to this, a study was conducted to examine the effect of deliberate practice, using a repeated simulated clinical experience, on student self-confidence and competency. In this study the self-confidence was measured using the National League for Nursing (NLN) Self-Confidence in Learning with Simulation self-reporting instrument which revealed no statistical significance in improvement of student self-confidence ($p=0.06$). However, the repetition of a simulation scenario promoted an increase in overall competence and support incorporating deliberate practice of simulation scenarios into nursing education. Hence, in future research evaluating the effect of deliberate practice using simulation on nursing students' competency was suggested to determine if there is relationship with student self-confidence Lacue (2017).

Nevertheless, Lee (2014) conducted an evaluation of human-patient simulation on cardiopulmonary rehabilitation students' self-confidence and learner satisfaction. The

study aimed to determine whether using Human-Patient Simulation as an educational tool helped the students increase their self-confidence levels, as well as to identify any measurable differences in student satisfaction in learning. The National League of Nursing (NLN) Self-Confidence in learning tool questionnaire was used to both groups to complete before and after the intervention. The results revealed both self-confidence and learning satisfaction levels improved significantly in the group participating in Human-Patient Simulation. However, self-confidence and learning satisfaction levels were not significant in the control group. Thus, these findings indicated that Human-Patient Simulation is a valuable learning tool that should be introduced in a wide range of healthcare curricular and clinical settings.

Furthermore, the level of self-confidence among undergraduate nursing students was assessed in the maternal-child simulation by Brasil et al. (2018). In this study the students' initially have a theory lesson and then participate in a simulation based on the focus of the lesson. At the end of the semester, all the students participate in a final simulation overall the semester's content, after being randomly grouped for the different scenarios. At the end of each case, a debriefing was held with all the students involved in the scenario, who subsequently answer the Self-Confidence in Learning Scale by the National League for Nursing (NLN) to measure the self-confidence of an individual gained by means of a high-fidelity simulation. The results for the self-confidence scales revealed good ratings among the students' which supported realistic simulations is of added value. Apparently, to the researcher knowledge, no literature found precisely that measured self-confidence on video assisted lecture to formulate accurate nursing diagnosis.

2.10 Simulation Design in Teaching

In nursing education currently many types of simulation equipment are available which enable nurse educators to utilize a variety of methods and techniques in their teaching and learning process (Lubbers & Rossman, 2017). Nurse educators need to determine the learning objectives and the content best taught through simulation due to the fact that some topics are not suitable to simulation; but traditional lecturing still the best approach (Medley & Horne, 2005). However, Jeffries (2015) systemic review and meta-analysis demonstrate that simulation contributes to improve performance and enhance outcomes when compared to traditional nursing educational methods. Simulation in nursing education helps to transform student learning and respond to decreasing clinical site availability (Lubbers & Rossman, 2016).

Apparently, simulation design allows skills and assessments to be changed, performed and documented for each student. This is an advantage to nursing students to hear, see and feel the situation before putting their hands to real patients. Smith, Gillham, McCutcheon and Ziaian (2011) advocated that using video to depict clinical settings was an advantage for large student cohorts who were unable to visit clinical setting. Simulation is used to model real-life situations to enable nursing students to gain practice experience and develop the required clinical nursing skills (Omer, 2016).

According to Jeffries and Rizzolo (2006) simulations in teaching can be from low-fidelity to high fidelity which depends on the degree of reality one has to address. For instance the low-fidelity addresses the experiences using case studies or role-play; the

middle-fidelity are the partial task trainers or computer-based simulators; and the high-fidelity patient simulators are realistic, sophisticated and provide a high level of realism for the students. The factors which drive the increase of using simulation in nursing education are inadequate clinical wards, patient safety issues and educational mandates of adequate clinical hours of clinical background (Omer, 2016; & Liaw, Scherpbier, Rethans & Klainin-Yobas, 2012). Furthermore, Eyikara and Baykara (2017) conclude that simulations represent an innovative teaching method which stimulates the five senses of a learner at the same time to enhance their learning process. Hence, simulation has been an integral part of clinical teaching and learning methods in nursing education.

Simulation has been concluded to be an effective teaching method for selected skills and knowledge gains (Foronda, Liu & Bauman, 2013). At this juncture, Wolf (2008) reported to improve the nurses' triage ability in the emergency department with a simulation intervention. Nurses' who completed the simulation and didactic training showed an increased ability to accurately triage patients at the emergency department. Similarly, Gordon and Buckley (2009) study on the effectiveness of simulation on medical-surgical nurses' ability to recognize and respond to clinical emergencies. This study revealed an improvement in nurses' ability to respond to emergencies after receiving simulation training in their self-report.

Furthermore, studies have indicated that simulation has several advantages to nursing education such as improves nursing knowledge, nursing clinical practice, nurses critical thinking, clinical decision making, communication skills, self-confidence and

satisfaction (Kinsman, et al., 2012; Jeffries & Rizzolo, 2006; &Young, Eun & Sook, 2012). In the same way, Birkhoff and Donner (2010) contended simulation-based teaching and learning strategies build self-confidence in nursing students by allowing them to practice assessment and critical thinking skills in a nonthreatening environment. Therefore, it is apparent in clinical practice, simulations promote changes in attitudes and a significant reduction of adverse events, thus, contributing to patient safety (Silva & Oliveira-Kumakura, 2018).

The core task in nursing education is to produce nursing students who are safe, competent and efficient as they enter into clinical practice. At this juncture, assessment of competence of nursing skills using simulation education is imperative in nursing education (Lacue, 2016). Hence, use of simulation education in undergraduate nursing curricula is incorporated to evaluate competency, satisfaction, self-confidence, self-efficacy and cognitive proficiency in many research. It was concluded that repetition of a simulation scenario promoted an increase in overall competence and support incorporating deliberate practice of simulation scenarios into nursing education (Lacue, 2016).

However, Silva and Oliveira-Kumakura (2018) reported the experience of constructing and applying two clinical simulation scenarios for the evaluation and treatment of wounds for undergraduate students. The results revealed that from this simulation, the satisfaction of the students with the activity and the development of clinical reasoning the final choice of the treatment to be performed was satisfactory. Thus, utilizing

clinical simulation scenarios to teach students favoured the clinical reasoning and decision-making in the evaluation and treatment of wounds.

Hansen (2016) remarked that simulation learning among nursing students is in demand lately due to factors such as increased student enrolment and decreased clinical site availability for clinical practice. Thus, if the use of simulators can enhance safe nursing practice, many educators will need to change their current teaching strategies for simulators to be used consistently in nursing education programs (Abell & Keaster, 2012). Nevertheless, simulation can also be used to alleviate anxiety among students. In this regard, Schmid et al. (2014) conducted a multicentre study to determine video-based feedback of oral clinical presentations reduces the anxiety of ICU medical students. Anxiety level scores were significantly lower after 3 months of internship in the experiment and control groups. However, the scores was significantly greater in the "video-based feedback" group than in controls. Hence, simulation with video-assisted oral feedback reduced anxiety and significantly decreased the proportion of students experiencing severe anxiety.

Santos, Figueiredo and Vieira (2019) further supported that innovative pedagogical practices in higher education is to enhance students' needs. Whereby, the didactic lectures must associate with digital simulations to contribute deeper learning which improves critical and creative thinking. In the similar vein, Brown, Kirkpatrick, Greer, Matthias and Swanson (2009) have determined the use of innovative pedagogies in nursing education is called for educational reform and support for a worldwide transition from didactic education to more non-traditional education. Moreover, the current patterns of

teaching/learning strategies and approaches used by nurse educators, provides a beginning research base for improving nursing education.

Simulation-based teaching and learning strategies build self-confidence in nursing students by allowing them to practice assessment and critical thinking skills in a nonthreatening environment (Birkhoff & Donner, 2010; Samawi, Miller & Haras; 2014). Human-Patient Simulation is a valuable learning tool that should be introduced in a wide range of healthcare curricular and clinical settings (Lee, 2014). Moreover, repetition of a simulation scenario promoted an increase in overall competence and support incorporating deliberate practice of simulation scenarios into nursing education (Lacue, 2017). Similarly, Silva and Oliveira-Kumakura (2018) reported using clinical simulation scenarios to teach students favoured the clinical reasoning and decision-making in the evaluation and treatment of wound care. Therefore, it was apparent simulation being interactive and focused proved to be valuable experiences for learning psychomotor skills and developing critical thinking among nursing students (Childs & Sepples, 2006).

DiGiacomo (2017) remarked that simulation provides educators a way to reproduce a clinical teaching experience in a safe, supportive learning environment. In addition, Jefferies (2016) concluded that simulation is a positive teaching strategy when compared to other methods of instruction and produces positive student outcomes. At this juncture, simulation enables novice student nurse explore the feeling to be a nurse and to practice clinical nursing skills as preparatory for the real world of nursing (Berragan, 2011). Simulation offered in nursing education offers trial and error learning for the nursing

students whereby it is safe to make mistakes and learn from that mistakes. Otherwise, the nursing students making errors in clinical areas on real patients can lead to serious consequences.

In the same vein, Alfes (2011) found simulation as a learning strategy for beginning nursing students and determining its efficacy within the skills laboratory setting. Furthermore, in this study reported higher levels of satisfaction and self-confidence following the simulation learning experiences for beginning nursing students and encourage the implementation of simulation as a strand from beginning to end in nursing curricula. It is crucial for beginning nursing students being able to link theory to practice to provide high-quality nursing care to patients (Morgan, 2006). Apparently, current students are technologically savvy students, hence nursing students from this generation can embrace simulation as a learning strategy because technology is the way of life to them.

Whilst for simulation to be successful, the nursing students need to engage in the learning activity interacting and experiencing first hand. Bland, Topping and Wood (2011) found simulation is an active pedagogy in nursing academia which offers the student participation through activity and interaction. In addition, simulation helped nursing students in active learning, critical thinking and problem solving which can be absorbed in a variety of simulation methods such as role play, case studies, videos, interactive manikins and actors (Moule, Wilford, Sales & Lockyer, 2008). In an earlier study simulations believed by nursing students to be an innovative strategy promoting active learning, developing clinical competence and confidence prior to practice (Reilly & Spratt, 2007).

2.11 National League for Nursing (NLN) 2005

This NLN instrument was developed in 2005 by the National League for Nursing and Laerdal Medical which included several questionnaires: The Simulation Design Scale (SDS); The Student Satisfaction in Learning using Simulation Scale; and The Self-Confidence in Learning using Simulation Scale (Jeffries & Rizzolo, 2006). The 13-item Student Satisfaction and Self-Confidence in Learning Scale has reported Cronbach's alpha of 0.94 for the Satisfaction subscale and 0.87 for the Self-Confidence subscale. The 20-item SDS consists of five subscales (Objectives, Support, Problem-Solving, Feedback, and Fidelity) and has a reported Cronbach's alpha of 0.92 for the presence of these features (Jeffries & Rizzolo, 2006). Many researchers in nursing education use this instrument as a useful guide for conducting systematic and organized research on simulations. Moreover, Jeffries and Rizzolo (2006) claimed that the expanded use of simulation in nursing education will enhance increased transformation of cognitive and psychomotor skills when students perform nursing care for patients in current dynamic, health care environment.

It has been a decade since the development of this NLN, and many educators used it to evaluate their teaching and learning performance, satisfaction and confidence. Jeffries and Rizzolo (2006) found that the use of simulation in nursing education will enhance nursing students knowledge and skill transfer when perform nursing care for their patients. Adamson (2015) systematic review of the literature related to the NLN/Jeffries simulation framework supported the components of NLN 2005 were reliable and useful tool for conduct research to evaluate clinical skills of the nursing students.

Fountain and Alfred (2009) conducted a study to determine if a student's learning style influenced satisfaction and self-confidence with the use high-fidelity simulators of technology-enhanced activities. In this study, after the completion of the simulation lab activity, students were invited to complete the National League for Nursing Student Satisfaction and Self-Confidence in Learning Scale to measure a student's personal attitudes about HFS activities. In this study, Cronbach's alphas were 0.91 for satisfaction and 0.84 for self-confidence which was similar to Jeffries and Rizzolo (2006) who reported that reliability of the scale was tested using Cronbach's alpha (satisfaction = 0.94; self-confidence, 0.87).

Smith and Roehrs (2009) study examined factors correlated with two outcomes of a high-fidelity simulation (HFS) experience for student satisfaction and self-confidence. The Student Satisfaction and Self-Confidence in Learning Scale instruments developed by the National League for Nursing (NLN) were also used in this study. Content validity for both instruments was accomplished by a review of 10 experts in medical/surgical nursing and the reliability of the scale was not reported in this study. However, this study adds to the body of nursing knowledge by providing information regarding characteristics that correlate with student satisfaction and self-confidence as two outcomes of a high-fidelity simulation experience (Smith and Roehrs, 2009).

On the other hand, Sharpnack and Madigan (2012) reported the low-fidelity simulation evaluation program that integrates pharmacology, health assessment, pathophysiology, and clinical curricula in a nursing program. Thirty-two students

evaluated their experience using the Student Satisfaction and Self-Confidence in Learning questionnaire, and the Simulation Design Scale by NLN. The Cronbach's alpha scores established the reliability of scores at 0.95, 0.95 and 0.97 respectively for the questionnaire. The findings of this study promote active learning and diverse methods of learning facilitating the learning process which build satisfaction and self-confidence of the nursing students.

Square (2012) explored high-fidelity simulation in nursing practice and the Impact on nurses' knowledge acquisition, satisfaction, and self-confidence. Therefore, the Student Satisfaction and Self-Confidence in Learning Scale were used in this study. The Cronbach's alpha for this study sample were found to be 0.91 for the satisfaction subscale and 0.87 for the self-confidence subscale. The results indicated that nurses were satisfied with and confident in learning from the simulation activity. Similarly, Franklin, Gubrud-Howe, Sideras and Lee (2015) study to evaluate the effectiveness of simulation preparation on novice nurses' competence and self-efficacy in a multiple-patient simulations. However, in this study the participants completed a modified National League for Nursing Student Satisfaction and Self-Confidence in Learning Scale at baseline and after the five-week intervention. The reliability scores were reported but the findings from this pilot randomized control trial indicate that there was no relationship between change in competence and self-efficacy scores.

The Student Satisfaction and Self-Confidence in learning questionnaire, has been developed by the National League for Nursing in the US for evaluating simulation used in

nurse education. Tosterud, Petzall Hedelin and Hall-Lord (2013) study was to test the questionnaire, Student Satisfaction and Self-Confidence in Learning, for psychometric properties in a Norwegian nurse education context. A sample consisting of 123 nursing students participated in a simulation situation. When the questionnaire was tested in its entirety, psychometric testing conducted with a principal component analysis did not reveal a stable factor solution. The two subscales were then tested separately. The analysis for Satisfaction with Current Learning suggested a one-component solution, thereby explaining 62.8% of the variance, and the internal reliability was 0.84. With regard to Self-Confidence in Learning, no stable solution was achieved, and an alpha value of 0.64 was shown. To further validate the questionnaire, Student Satisfaction and Self-Confidence in Learning, more studies by various nursing programmes in different cultural contexts are recommended.

Almeida et al. (2015) translated and validated the Scale of Student Satisfaction and Self-Confidence in Learning to Portuguese. In this study a total of 103 nurses participated. As to the validity and reliability of the scale, the correlation pattern between the variables, showed good results. The internal consistency (Cronbach's alpha) showed coefficients of 0.86. In Portuguese this tool was called: *Escala de Satisfação de Estudantes e Autoconfiança na Aprendizagem*. The results revealed good psychometric properties and a good potential use. However the sampling size and specificity are limitations of this study, but future studies will contribute to consolidate the validity of the scale and strengthen its potential use (Almeida et al., 2015).

Jara and Nunez (2018) conducted a study to translate and validate the Spanish version of the Satisfaction and Self-confidence in Learning Scale of the National League for Nursing (NLN). The instrument was translated into Spanish by three bilingual teachers and was submitted to the criterion of three judges who are experts in simulation, calculating the content validity index. The translated version was applied to 130 students who have participated in high-fidelity clinical simulation to measure satisfaction and self-confidence in the learning of nursing students.

Bergamasco, Murakami and da Cruz (2018) reported their experience with using the Student Satisfaction and Self-Confidence in Learning and the Simulation Design Scale in a nursing undergraduate course. In their study, two simulated scenarios: care of a patient with glycaemic alteration and care of a patient with respiratory distress were given to the nursing students. The objectives of the simulation were to discuss clinical reasoning, knowledge to identify the main problem (nursing diagnosis) and the student's abilities to perform care (nursing intervention). After the simulations, the students were invited to fill in the instruments to identify the level of the students' satisfaction regarding the use of simulation as a teaching strategy. The results obtained showed 100% consider that a simulation was projected for the specific level of knowledge which allowed them to prioritize nursing assessments and care for their patients. Moreover, the simulation which was similar to a real situation enhanced positive responses to the students. Apparently, this information reinforce the importance of using simulation as a learning strategy.

2.12 D-Catch Instrument

Documentation by nurses is a routine in the patient record. These documentation include clinical observation records, medical laboratory and also patient's nursing care plan. Keeping a valid documents of a patient's care needs are crucial to provide effective interventions that lead to high-quality nursing outcomes (Paans & Muller-Staub, 2015). At this juncture, Lunney (2009) determined that accurately assessing patients' care plan needs and accurate formulation of nursing diagnoses guide the patients' interventions. Hence, many instrument development studies began addressing the combination of prevalence and accuracy in nursing diagnoses.

The instrument Ziegler Criteria for Evaluating the Quality of the Nursing Process (ZCEQNP) in 1984 by Ziegler was developed to assess nursing diagnoses derived by students to study the effects of education in nursing diagnoses, interventions, and outcomes. The NoGa instrument in 1996 was developed by Nordström and Gardulf, whereby a scale measures the degrees of accuracy in nursing diagnoses and the scale for Degrees of Accuracy in Nursing Diagnoses by Lunney (2001). Several other audit instruments, such as the catching instrument (Björvell, Wredling, & Thorell-Ekstrand, 2002), the Quality of Nursing Diagnosis (QOD) (Florin et al., 2005), the Quality of Diagnosis, Interventions and Outcomes (Q-DIO) (Müller-Staub et al., 2009; Müller-Staub, Lunney, et al., 2008), and the D-Catch (Paans, Sermeus, Nieweg, & van der Schans, 2010), have also been developed to review and measure the quality of nursing diagnoses for educational purposes and in clinical studies (Paans & Muller-Staub, 2015).

The D-Catch instrument, based on the Cat-ch-Ing instrument and the Scale for Degrees of Accuracy in Nursing Diagnoses, was developed in 2007-2008 (Paans et al., 2010). The D-Catch instrument development was conducted by Paans et al. (2010) whereby a combination of three assessment scales were chosen to construct it. Hence for assessment of the nursing documentation, the Cat-ch-Ing instrument (Bjorvell 2002), and for assessment of nursing diagnoses, the Scale for Degrees of Accuracy in Nursing Diagnoses (Lunney 2001) and the Q-OD (Florin et al., 2005) were selected to develop the D-Catch instrument.

Content validity of the D-Catch instrument was assessed by two Delphi panels, in which pairs of independent reviewers assessed 245 patient records in seven hospitals in the Netherlands. Construct validity, internal consistency and inter-rater reliability of the D-Catch instrument was assessed each pair of reviewers. The internal consistency (Cronbach's alpha) was 0.722 and the inter-rater reliability (K (w)) varied between 0.742 and 0.896. It was concluded the D-Catch instrument is a valid and reliable measurement instrument to assess nursing documentation in general hospital settings (Paans et al., 2010). Since the development of this instrument has been used in many studies to determine the accuracy of nursing diagnoses.

Paans et al. (2010) study was to determine how knowledge sources, ready knowledge, and disposition toward critical thinking and reasoning skills influence the accuracy of student nurses' diagnoses. The accuracy of student nurses' nursing diagnoses were measure with the D-Catch instrument and the total score for the accuracy of the

reported diagnoses was calculated as the sum of the quantitative and qualitative scores (Cronbach's alpha 0.94). Therefore, the results concluded adequate disposition toward critical thinking and reasoning skills are associated with more accurate nursing diagnoses.

Likewise, Paans et al. (2012) measured the effect of knowledge sources, such as handbooks, an assessment format and a predefined record structure for diagnostic documentation, as well as the influence of knowledge, disposition toward critical thinking and reasoning skills, on the accuracy of nursing diagnoses. The D-Catch instrument was used to measure the accuracy of nursing diagnoses and the findings showed that the PES format has a main positive effect and increases accuracy in nursing diagnosis. The implications for nursing practice and education is to improving nurses' disposition towards critical thinking, reasoning skills, and encouraging them to use the PES structure, which enhance a step forward in improving the accuracy of nursing diagnoses.

In Italy, D'Agostino et al. (2013) conducted a study to evaluate the impact of a clinical nursing information system (CNIS), called Professional Assessment Instrument (PAI), in clinical practice. The study evaluated the PAI Quality, Nurses Satisfaction, PAI Use, Nurses and Environment Characteristics, Net Benefits and Nurses' Experiences related to the PAI use. Two quantitative instruments and one qualitative instrument were used to measure the Net Benefits of the PAI: an instrument to measure nursing documentation accuracy was The D-Catch. But in this study the Italian version of the D-Catch was used which was obtained by a translation and back-translation process.

The D-Catch instrument was employed to measure the prevalence of the terms used for nursing diagnoses (labels), and whether the diagnostic labels that were used in nursing records demonstrate the application of the NANDA-I classification. Paans and Muller-Staub (2015) conducted a study to evaluate patients' care needs in Netherlands. This was a stratified cross-sectional random-sampling nursing documentation audit employing the D-Catch instrument in 10 hospitals comprising 37 wards. The study found most care needs were determined in physiological health patterns and few in psychosocial patterns. Apparently the most prevalent nursing diagnoses were acute pain, nausea, fatigue, and risk for impaired skin integrity.

2.12 Summary

In this chapter, the details of nursing diagnosis contents, the differences between nursing diagnosis and medical diagnosis, as well as the other components of nursing process are discussed. In addition many studies pertaining to knowledge on nursing diagnosis are reviewed and concluded that the accuracy of nursing diagnosis are important elements in health care settings because it involves management of the lives of patients. The importance of the NLN (2005) and D-Catch instrument to nursing research were discussed with emphasis to this current study. Hence, the nursing professionals are accountable for the correct and appropriate nursing diagnosis for the patients. Thus the nursing students must be knowledgeable and efficient in formulating accurate nursing diagnosis. Apparently, methods of teaching nursing diagnosis with simulations, student's satisfaction and self-confidence to the simulated or the conventional lecture are discussed here.

CHAPTER 3

METHODOLOGY

3.1 Introduction

In this chapter, the methods used in this research study are discussed. It also details the research design, study population and study setting, variables in this study and also the instruments that were used to measure the variable. In addition validity and reliability of the instrument as well as the ethical considerations are explained. This chapter also discusses the data collection and data analysis of the study.

3.2 Research Design

This study was an after-only experimental design. It was also sometimes called the posttest-only control group design which is composed of two randomly assigned groups, but unlike the true experimental design, neither group is pretested (LoBiondo-Wood & Haber, 2010). This design was useful when testing differential effects of the outcomes which cannot be measured beforehand. The reason was that the nursing students were in their first semester and had no knowledge about the nursing process topic. Hence, they were unable to be pretested on the topic that was not familiar before to them. The nursing students were assigned by random assignment into two groups for the study. One group of nursing students (intervention group) for VAL and the other group (control) maintain DL. The research design is shown in Figure 3.1 as follows.

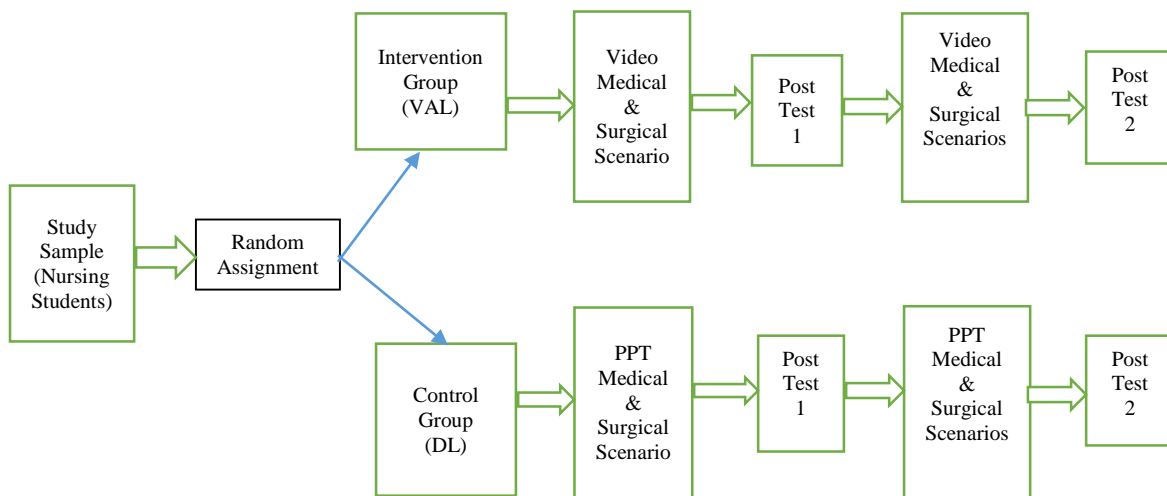


Figure 3.1: Research Design: After-Only Experimental Design
(Ref: LoBiondo-Wood & Haber, 2010)

3.3 Population and Setting

3.3.1 Study Population

The population for this study was the nursing students at the School of Health Sciences. The target population were the diploma and undergraduate nursing students enrolled in the intake for Academic Session 2017/2018, first semester of the first year nursing program. There were only 34 diploma and 32 undergraduate nursing students for the intake for Academic Session 2017/2018. In order to have equal number of participants in each group of the VAL and DL, the nursing students' were randomized to each of the intervention and control group. LoBiondo-Wood and Haber (2010) stated randomization was used when the required number of subjects from the population was obtained in such a manner that each of the subject in a population has an equal chance of being selected.

In this study the random assignment was conducted using the envelope randomization. The process of randomization to experimental or control groups reduces systematic bias that may affect the dependent variable being studied (Sullivan-Bolyai & Bova, 2010). A total of 34 brown envelopes were stuffed with paperwork labelled video and lecture equally (17 each) for the diploma nursing students. Later on the diploma nursing students were asked to pick any one of the sealed envelopes which were displayed on the table. Immediately, when the nursing student opens the envelope, the researcher document to which group each of the nursing student is assigned.

Similarly, another 32 brown envelopes were stuffed with paperwork labelled video and lecture equally (16 each) for the undergraduate nursing students. Later on the undergraduate nursing students were asked to pick any one of the sealed envelopes which were displayed on the table. Immediately, when the nursing student opens the envelope, the researcher document to which group each of the nursing student is assigned. Finally, after the random assignment with both the nursing students, therefore there were 17 diploma and 16 undergraduate nursing students in the intervention group. The control group consist of 17 diploma and 16 undergraduate nursing students. Hence the VAL and DL groups were comprised of 33 nursing students respectively.

3.3.2 Study Setting

The study was conducted at the School of Health Sciences. It is one of the schools of the Universiti Sains Malaysia located in the Health Campus in Kubang Kerian, Kelantan. This study setting was chosen because the nursing programs were only offered in this health campus.

3.4 Sampling Method

This experimental study utilised all the nursing students enrolled in the subject DGN 113/4: Basic Nursing Skills (ADL) and GTJ 101/4: Nursing Foundation 1 for the academic session 2017/2018. There were a total of 66 nursing students.

3.4.1 Sample Criteria

The inclusion and exclusion criteria were as the following:

Inclusion criteria:

1. All first year Diploma and Undergraduate nursing students of Academic Session 2017/2018.
2. Diploma nursing students enrolled in DGN 113/4: Basic Nursing Skills (ADL) which has the topic on nursing process.
3. Undergraduate nursing students enrolled in GTJ 101/4: Nursing Foundation 1 which has the topic on nursing process.

Exclusion criteria:

1. Nursing students who refuse to participate.

3.4.2 Sample Size

The sample size was calculated based on each research objective and the highest sample size among the objectives was chosen for the study. The sample size was determined by Sample Size Calculator version 1.7.1 for two means comparison by Ariffin (2015) in Table 3.1.

Table 3.1 Sample Sizes in Similar Studies

Objective 1: Accuracy of ND (Collins, 2013)	Objective 2: Satisfaction (Omer, 2016)	Objective 3: Self- Confidence (Omer, 2016)	Objective 4: Simulation (Samawi, Miller & Haras, 2014)
SD: 1.972	SD: 0867	SD: 0777	SD: 14.13
Effect size (Δ) = 1.5	Effect size (Δ) = 1.0	Effect size (Δ) = 1.0	Effect size (Δ) = 1.0
Sig. level (α) = 0.05	Sig. level (α) = 0.05	Sig. level (α) = 0.05	Sig. level (α) = 0.05
Power (1- β) = 0.8	Power (1- β) = 0.8	Power (1- β) = 0.8	Power (1- β) = 0.8
Sample size = 28	Sample size = 12	Sample size = 10	Sample size = 32
Dropout = 10%	Dropout = 10%	Dropout = 10%	Dropout = 10%
Corrected sample size = 32	Corrected sample size = 14	Corrected sample size = 12	Corrected sample size = 36

The highest number of sample size was 36; hence it was taken as the required sample size for this research. In conclusion, the sample calculated was 36 nursing students per group for this study. However, during the study the researcher only recruited 33 nursing students per group due to the decreased number of student enrolled for 2017/2018 academic

session for nursing in diploma and undergraduate program. The total number of students enrolled for diploma nursing was 34 and 32 for undergraduate nursing.

3.4.3 Behavioural Test for Nursing Students

The usual intake for diploma nursing for the previous academic sessions was 60 to 100 candidates. However, in this 2017/2018 academic session the number of diploma students' candidates were only 34. Thus, it was not adequate to conduct after-only experimental study. This was because when the nursing students are randomized into two groups of experiment and control, the total samples of each group was only 17 which was not sufficient for statistical analysis. In general, it was said that Central Limit Theorem at the sample of about 30 or more observations, the sampling distribution of the mean can be safely assumed to be normal (Polit & Beck, 2017). Therefore, 32 undergraduate nursing students were recruited to take part in this study.

However, before the process of randomization, a behavioural test was conducted to both the group of students. Both diploma and undergraduate nursing students were given a lecture on the topic nursing process. Two days later they were tested with 30 multiple choice questions with one correct answer on the topic taught (Appendix H). The multiple choice questions were checked for content validity by three senior nursing lecturers. All agreed upon the contents of the questions. Data were analysed using independent t test and showed that there was no significant difference in knowledge between diploma and undergraduate nursing students whereby $p > .61$. This result indicated that both the diploma

and undergraduate were homogenous in their nursing process knowledge. Hence, a total of 34 diploma and 32 undergraduate nursing students were recruited in this study.

3.5 Variables

3.5.1 Independent variables

The independent variables were video assisted lecture (VAL) and didactic lecture (DL).

3.5.2 Dependent variables

The dependent variables were accuracy of nursing diagnosis, satisfaction, self-confidence and simulation design.

3.5.3 Variables Measurement

The accuracy of nursing diagnosis was measured by the D-Catch Guide for Diagnoses, an instrument that quantifies the degree of accuracy in written diagnoses (Paans et al., 2010). All the actual and potential of nursing diagnosis were measured from the VAL and DL. In this study the nursing students were instructed to identify five nursing diagnoses from the medical and surgical scenarios respectively. This instruction was mainly to give the nursing students practical exercise within the time frame of the class. The score obtained range from 1 to 20 for five nursing diagnoses that were formulated accurately.

Meanwhile, to measure satisfaction of nursing students' to the differential effects of VAL versus DL was assessed using a 5-point Likert scale: strongly disagree (1), disagree (2), undecided (3), agree (4), and strongly agree (5). The scores obtained ranged from 1 to 35 for seven (7) items.

The self-confidence of the nursing students' to formulate accurate of nursing diagnosis from the differential effects of VAL versus DL was assessed using a 5-point Likert scale: strongly disagree (1), disagree (2), undecided (3), agree (4), and strongly agree (5). The scores obtained ranged from 1 to 45 for nine (9) items.

The nursing students' preference and acceptance to the simulation design to formulate accurate of nursing diagnosis from the differential effects of VAL versus DL was assessed using a 5-point Likert scale: strongly disagree (1), disagree (2), undecided (3), agree (4), and strongly agree (5). The scores obtained range from 1 to 115 for twenty three (23) items.

3.6 Instrumentation

The instrument to measure the accurate nursing diagnosis was the D-Catch Guide for Diagnoses (Appendix F) and questionnaire (Appendix G). The D-Catch Guide for Diagnoses was used to measure accuracy of nursing diagnosis from the VAL and DL. The other instrument for the study was adopted from questionnaire by National League for Nursing (NLN, 2005) for measuring satisfaction, self-confidence and simulation design of nursing students.

3.6.1 D-Catch Guide for Diagnoses

a) Description

The D-Catch instrument was developed by Paans et al. (2010) in Netherlands to measure the accuracy of nursing diagnosis in nursing documentation. This instrument has

two parts: D-Catch Guide A and D-Catch Guide B for diagnoses, which outlines the scoring of the quantity and quality criteria of the D-Catch respectively. The quantity criteria of this instrument addresses the question to a nursing diagnoses: ‘Are the PES components of the nursing diagnosis present?’ The quantity criteria can be scored as the follows: complete, 4 points; partially complete, 3 points; incomplete, 2 points; none, 1 point.

The quality criteria of this instrument address the question: ‘What is the quality of the description with respect to relevancy, unambiguity and linguistic correctness?’ The quantity criteria can be scored as the follows: very good, 4 points; good, 3 points; moderate, 2 points; poor, 1 point (Appendix F).

b) Validity

Paans et al. (2010) conducted a study to test the psychometric properties of the D-Catch showed that it was a valid measurement instrument to assess nursing diagnosis in hospital settings. The D-Catch instrument, based on the Cat-ch-Ing instrument and the Scale for Degrees of Accuracy in Nursing Diagnoses, was developed in 2007–2008. Content validity of the D-Catch instrument was assessed by two Delphi panels, in which pairs of independent reviewers assessed 245 patient records in seven hospitals in the Netherlands. Construct validity was assessed by explorative factor analysis with principal components and varimax rotation. It was concluded the D-Catch instrument is a valid measurement instrument to assess nursing documentation in general hospital settings (Paans et al., 2010).

c) Reliability

Paans et al. (2010) study to test the psychometric properties of the D-Catch showed that it was a reliable measurement instrument to assess nursing diagnosis in hospital settings. The Cronbach's alpha was 0.722 for internal consistency and the inter-rater reliability varied between 0.742 and 0.896.

d) Scoring

The D-Catch Guide for Diagnoses (Paans et al., 2010) was used to check the accuracy of nursing diagnosis formulated by nursing students as the following:

i) **4 points** (Very good), if the nursing student can identify a problem label, an aetiology, and a sign/symptom are clearly and unambiguously listed in the text; the diagnosis implies the possibility of an intervention.

ii) **3 points** (Good), if the nursing student can identify a problem label, aetiology, and a sign/symptom are listed, but no (planned) intervention is listed. Alternatively, a problem label or a sign/symptom is listed with reference to a possible intervention and no aetiology/a cause.

iii) **2 points** (Moderate), if the nursing student can identify a problem label, and either an aetiology/a cause or a sign/symptom is listed with reference to either a planned intervention or a not clearly described intervention.

iv) **1 point** (Poor), if the nursing student can identify a problem label is listed with no further explanation. No reference is made to an intervention.

3.6.2 Satisfaction Scale NLN 2005

a) Description

The Satisfaction Scale was developed by the NLN 2005 to measure nursing students' satisfaction towards current learning (Jeffries & Rizzolo, 2006). The number of items to measure satisfaction was seven items. Each item will be rated on a five-point Likert-type scale ranging from 1-5, with a score of "1" indicating that certain disagreement of satisfaction with the current learning and a score of "5" indicating satisfaction with the current learning.

b) Validity

Face validity by three senior nursing lecturers was conducted to the items in the questionnaire as to verify that the instrument shows the appearance of measuring the concept in the study. All agreed upon the items in the questionnaire. LoBiondo-Wood and Haber (2010) stated a subtype of content validity is face validity in which colleagues are asked to read the instrument and evaluate the contents in terms of whether it appears to reflect the concept the researcher intends to measure.

c) Reliability

The Cronbach's alpha for satisfaction was 0.94 (Jeffries & Rizzolo, 2006). The pilot study of this instrument was carried out on 30 students with similar characteristics in

year one nursing students to ensure the reliability. They were the second year undergraduate nursing students of academic session 2016/2017. The Cronbach's alpha for satisfaction in this study was 0.74. A level of 0.70 or higher was considered to be acceptable level of reliability (LoBiondo-Wood & Haber, 2010).

d) Scoring

The measurement of satisfaction to the effect of VAL and DL was assessed using a 5-point Likert scale ranging from 1 to 5, strongly disagree (1), disagree (2), undecided (3), agree (4), and strongly agree (5). Maximum scoring was 35 marks.

3.6.3 Self-confidence in Learning Scale NLN 2005

a) Description

The Self-confidence in Learning Scale was developed by the NLN 2005 to measure nursing students' Self-confidence towards current learning (Jeffries & Rizzolo, 2006). The number of items to measure self-confidence was nine items. Each item will be rated on a five-point Likert-type scale ranging from 1 to 5, with a score of "1" indicating that certain disagreement of self-confidence with the current learning and a score of "5" indicating self-confidence with the current learning.

b) Validity

Face validity by three senior nursing lecturers was conducted to the items in the questionnaire as to verify that the instrument shows the appearance of measuring the concept in the study. All agreed upon the items in the questionnaire. LoBiondo-Wood and

Haber (2010) state a subtype of content validity is face validity in which colleagues are asked to read the instrument and evaluate the contents in terms of whether it appears to reflect the concept the researcher intends to measure.

c) Reliability

The Cronbach's alpha for self-confidence was 0.87 (Jeffries & Rizzolo, 2006). Pilot study of this instrument was carried out on 30 students with similar characteristics in year one nursing students to ensure the reliability. They were the second year undergraduate nursing students of academic session 2016/2017. The Cronbach's alpha for self-confidence in this study was 0.80. A level of 0.70 or higher is considered to be acceptable level of reliability (LoBiondo-Wood & Haber, 2010).

d) Scoring

The self-confidence of participants to formulate accurate nursing diagnosis from the effect of VAL and DL was assessed using a 5-point Likert scale ranging from 1 to 5, strongly disagree (1), disagree (2), undecided (3), agree (4), and strongly agree (5). Maximum scoring was 45 marks.

3.6.4 Simulation Design Scale NLN 2005

a) Description

The Simulation Design Scale was developed by the NLN 2005 to measure the features of the simulation and the importance of the features for the learners (Jeffries & Rizzolo, 2006). The features of the simulation meant here are the VAL and DL. The number of items to measure simulation acceptance are 23 items. Each item will be rated on

a five-point Likert-type scale ranging from 1 to 5, with a score of “1” indicating that certain disagreement to simulation in the current learning and a score of “5” indicating agreement to simulation in the current method of learning.

b) Validity

Face validity by three senior nursing lecturers was conducted to the items in the questionnaire as to verify that the instrument shows the appearance of measuring the concept in the study. All agreed upon the items in the questionnaire. LoBiondo-Wood and Haber (2010) stated a subtype of content validity is face validity in which colleagues are asked to read the instrument and evaluate the contents in terms of whether it appears to reflect the concept the researcher intends to measure.

c) Reliability

The Cronbach’s alpha for simulation design was 0.92 (Jeffries & Rizzolo, 2006). Pilot study of this instrument was carried out on 30 students with similar characteristics in year one nursing students to ensure the reliability. They were the second year undergraduate nursing students of academic session 2016/2017. The Cronbach’s alpha for simulation design in this study was 0.88. A level of 0.70 or higher is considered to be acceptable level of reliability (LoBiondo-Wood & Haber, 2010).

d) Scoring

The participants’ perception to the simulation to formulate accurate of nursing diagnosis from the effect of VAL and DL was assessed using a 5-point Likert scale ranging

from 1 to 5, strongly disagree (1), disagree (2), undecided (3), agree (4), and strongly agree (5). The score obtained can be range from 1 to 115. Maximum scoring was 115 marks.

3.7 Procedures

3.7.1 Study Materials

a) Videos for VAL

The selection of videos for the purpose of this study was based on medical and surgical scenarios. The choice of medical scenario video was an asthma scenario adopted from online video with a duration of three minutes and sixteen seconds (Hart, 2015). The reasons to choose this asthma video: i) it was a typical condition with respiratory problems, ii) the clinical manifestations by the patient were very realistic for the nursing students to see and formulate nursing diagnoses. The researcher did not find any suitable surgical scenarios online appropriate for the study. Thus, the surgical scenario video was recorded by the researcher in the surgical ward with duration of two minutes and thirty seconds. The permission for the video shooting was obtained from the ward sister and patient consent (Appendix I). The videos were used during the teaching session of nursing diagnosis. Each video presented one clinical situation with multiple cues and problems of the patient.

For example in medical scenario (Asthma) (Appendix B): Mr Jelan is 15 years old teenager admitted to A&E with complaints of difficulty in breathing. He was accompanied by his mother who looks anxious and worried over her son's condition. On admission, Jelan is alert and conscious but in shortness of breath. From his general assessment he looked

cyanosed. The following are his vital signs: Respiration Rate=26bpm, Heart Rate=156bpm, Blood Pressure=112/88 mmHg and Body Temperature=36.5° C.

And for the surgical scenario (Motor vehicle accident with fracture C3-C4) (Appendix B): Mr. Semandun is 65 years old man admitted to surgical ICU for postoperative management. He was knocked by a motorcar while crossing the road. He had abrasion on both legs and fracture to his cervical spine C3-C4 and could not move his lower limbs. From his general assessment, he is conscious and alert. He has tracheostomy mask with 4l/min oxygen; nasogastric tube for 4hourly feeding; intravenous fluid Normal Saline for maintenance regime and on continuous bladder drainage (CBD) free flow. The following are his vital signs: Respiration Rate=20bpm; Heart Rate=118bpm; Blood Pressure=130/90mmHg; Oxygen saturation=100% SaO₂ and Body Temperature=36.5° C.

b) Scenarios for DL

The two videos of medical and surgical scenarios as explained above were translated into case study scenarios by the researcher respectively. The scenarios were used for the teaching session of nursing diagnosis. Each scenario presented one clinical situation with multiple cues and problems of the patient. For example in medical scenario (Asthma) (Appendix C): Mr. Jelan is 15 years old teenager admitted to A&E with complaints of difficulty in breathing. He was accompanied by his mother who looks anxious and worried over her son's condition. On admission, Jelan is alert and conscious but in shortness of breath. From his general assessment he looked cyanosed. The following are his vital signs:

Respiration Rate=26bpm, Heart Rate=156bpm, Blood Pressure=112/88 mmHg and Body Temperature=36.5° C.

And for the surgical scenario (Motor vehicle accident with fracture C3-C4) (Appendix C): Mr. Semandun is 65 years old man admitted to surgical ICU for postoperative management. He has been knocked by a motorcar while crossing the road. He had abrasion on both legs and fracture to his cervical spine C3-C4 and could not move his lower limbs. From his general assessment, he is conscious and alert. He has tracheostomy mask with 4l/min oxygen; nasogastric tube for 4hourly feeding; intravenous fluid Normal Saline for maintenance regime and on continuous bladder drainage (CBD) free flow. The following were his vital signs: Respiration Rate=20bpm; Heart Rate=118bpm; Blood Pressure=130/90mmHg; Oxygen saturation=100% SaO₂ and Body Temperature=36.5° C.

3.7.2 Preparation of the Teacher

The course coordinators for the subject DGN 113/4: Basic Nursing Skills for diploma and GTJ 101/4: Nursing Foundation I for undergraduate was approached respectively for briefing the research procedures. The similarity in both the subjects is the introduction of nursing process whereby all the five steps of the subject were delivered to the first year nursing students in diploma and undergraduate program. The lecture schedules (Appendix E) and the lesson plan Nursing Process (Appendix J) and Nursing Diagnosis (Appendix K) were discussed so that it synchronized with the flow of the research plan. However the teaching was delivered by the researcher for both the

intervention and control group as to maintain homogeneity in teaching acquisition and skill (Saini, Jasbir, Mandeep, Thappar & Bindu, 2015).

3.7.3 Preparation of the Nursing Students

The nursing students were approached in the second week of their lecture schedules. They were informed regarding the research to take place, aim, procedure and their participation. Both the group of nursing students received the lecture on the introduction to nursing process for two hours. They were given the Nursing Diagnoses Definitions and Classification, 2015-2017 hand outs to use as a guide during their future classes.

3.7.4 Data Collection Procedure

The participants were approached in their classroom then the purpose and procedure of the research were explained to them. After the verbal consent has been obtained, the information sheet (Appendix L) and consent form (Appendix M) was given to get their written consent for this study. The intervention of the study was commenced in week five and seven as following the lecture schedules.

The first data collection on accuracy of nursing diagnosis was in week five, immediately after VAL and DL which identified as Post Test 1. Then two weeks later, Post Test 2 data collection on accuracy of nursing diagnosis, satisfaction, self-confidence and simulation design were done. The participants were in the classroom to answer the NLN 2005 questionnaire. The time allocated to complete the questionnaire was 20 to 30 minutes

and upon completion of the questionnaire then it was collected immediately. The data collection was commenced in the month of September – October 2017. A flow chart of data collection is illustrated in Figure 3.2.

3.7.5 Flow Chart of the Study

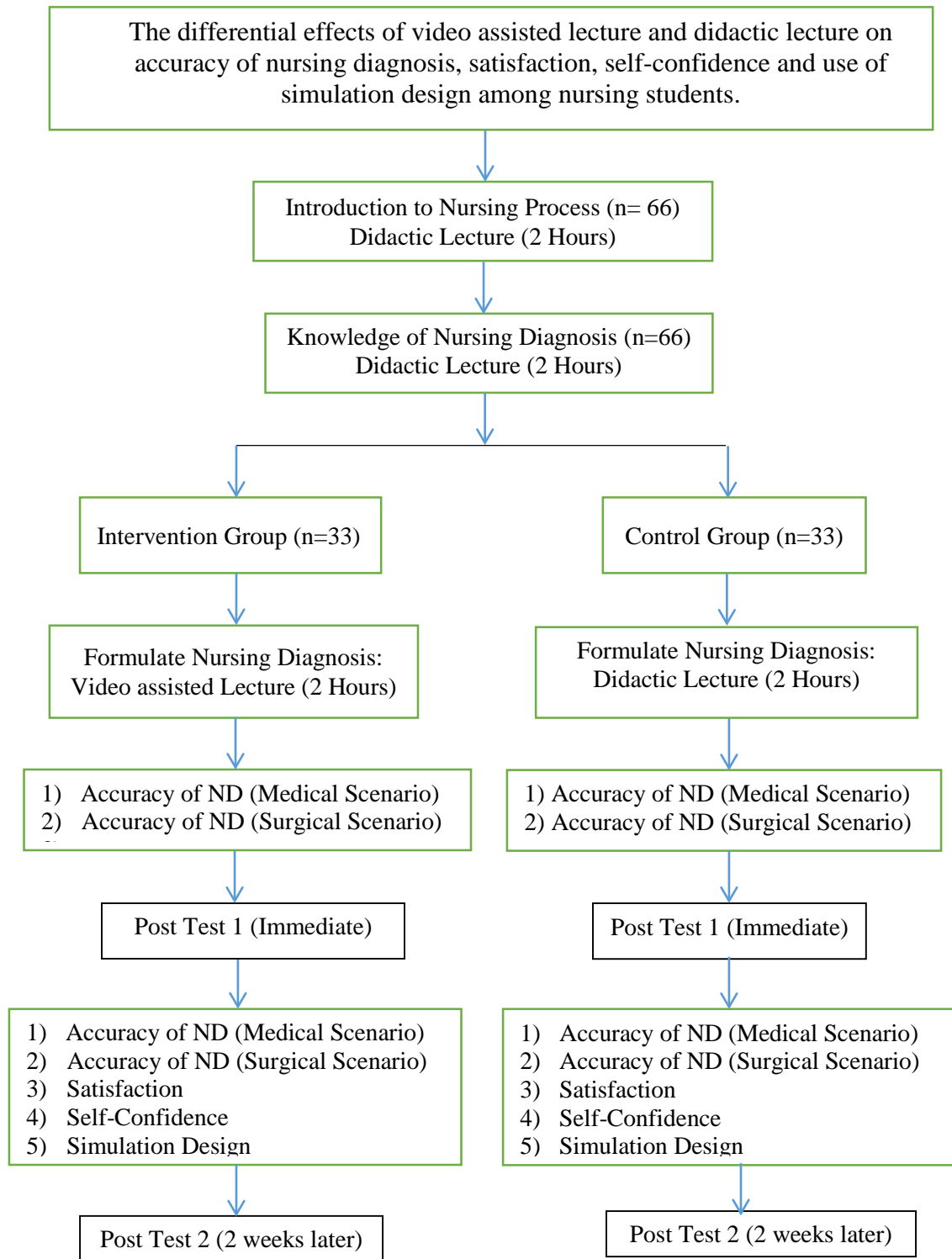


Figure 3.2: Flow Chart of the Study

3.8 Translation of Instrument

The English version instrument with approval from the authors (Appendix P & Q) was used for this research. No translation of this instrument was needed as the students were proficient in this language.

3.9 Ethical Consideration

Approval for the study was obtained from the Human Ethics Committee, USM and the Dean of the School of Health Sciences prior to conduct the study. The approval was needed in order to protect the rights of participants and institution. When the approval was granted from the Human Ethics Department (Appendix N), a letter seeking approval was submitted to the Dean of School of Health Sciences and also to the Chairperson of the Nursing Program. After acknowledgement and approval from the Dean and Chairperson the data collection was commenced (Appendix O). During data collection phase, the participants were approached by the researcher. The purpose, procedures, risks and benefit were explained to nursing students as the participants of this study.

3.10 Data Analysis

The data of this study was analysed using SPSS version 23 to answer the research questions. The testing of the assumptions of normality and homogeneity were done to examine the normal distribution of the numerical data. At the 5% level of significance, all null hypothesis were rejected if $p < .05$. The demographic data was analysed using descriptive statistic method such as frequency and percent. Descriptive statistics were

presented as tables to show frequency distribution of scores between the VAL and DL; satisfaction, self-confidence and simulation design.

The test of normality using Shapiro-Wilk and the test for homogeneity of variances using Levene's test were used for the accuracy of the nursing diagnoses for Post Test 1 and Post Test 2 for medical scenario and surgical scenario. The results showed that the normality assumption were not met in these scores. However, the assumption of equality of variance was violated for Post Test 1 medical and surgical scenario, hence non parametric test was used. Therefore the Mann-Whitney U test and Wilcoxon Paired Signed-Ranks test were used to analyse Post Test 1 and Post Test 2 for accuracy of nursing diagnosis. The Post Test 1 was conducted immediately after the intervention phase, whereas the Post Test 2 was conducted two weeks later after the intervention phase.

Tests of normality using Shapiro-Wilk and the test of homogeneity of variances using Levene's test were used for the satisfaction, self-confidence and simulation design for VAL and DL showed scores normally distributed and did not violate the homogeneity of variances assumption. Thus, the independent t test was used to analyse the satisfaction, self-confidence and simulation design among the nursing students during the Post Test 2. Hence, for details of statistical analysis test of the framework of data analysis according to null hypotheses are described in Table 3.2

Table 3.2 Framework of the Data Analysis

No	Research Objectives	Research Questions	Null Hypothesis	Sources of Data	Statistical analysis
1	To assess the differences between VAL and DL for medical scenario on accuracy of nursing diagnosis formulation among nursing students.	What is the difference between VAL and DL on accuracy of nursing diagnosis formulation for medical scenario among nursing students?	HO1a. There is no significant difference in accuracy of nursing diagnosis scores among nursing students between VAL and DL for medical scenario.	D-Catch Guide Diagnosis (2009)	Descriptive analysis <ul style="list-style-type: none"> • mean • SD Inferential statistics <ul style="list-style-type: none"> • Mann-Whitney U test
2	To assess the differences within VAL and DL for medical scenario on accuracy of nursing diagnosis formulation among nursing students.	What is the difference within VAL and DL on accuracy of nursing diagnosis formulation for medical scenario among nursing students?	HO1b. There is no significant difference in accuracy of nursing diagnosis scores among nursing students within VAL and DL for medical scenario.		Inferential statistics <ul style="list-style-type: none"> • Wilcoxon Paired Signed-Ranks test
3	To assess the differences between VAL and DL for surgical scenario on accuracy of nursing diagnosis formulation among nursing students.	What is the difference between VAL and DL on accuracy of nursing diagnosis formulation for surgical scenario among nursing students?	HO2a. There is no significant difference in accuracy of nursing diagnosis scores among nursing students between VAL and DL for surgical scenario.	D-Catch Guide Diagnosis (2009)	Descriptive analysis <ul style="list-style-type: none"> • mean • SD Inferential statistics <ul style="list-style-type: none"> • Mann-Whitney U test
4	To assess the differences within VAL and DL for surgical scenario on accuracy of nursing diagnosis formulation among nursing students.	What is the difference within VAL and DL on accuracy of nursing diagnosis formulation for surgical scenario among nursing students?	HO2b. There is no significant difference in accuracy of nursing diagnosis scores among nursing students within VAL and DL for surgical scenario.		Inferential statistics <ul style="list-style-type: none"> • Wilcoxon Paired Signed-Ranks test

Table 3.2, continued

5	To determine the differences of VAL and DL to satisfaction on accuracy of nursing diagnosis formulation among nursing students.	What is the difference of VAL and DL to satisfaction on accuracy of nursing diagnosis formulation among nursing students?	HO3. There is no significant difference in learning satisfaction scores (measured by the Satisfaction Scale) of nursing students who follow VAL and DL.	Questionnaire NLN 2005	Descriptive analysis • mean • SD Inferential statistics • Independent t test
6	To determine the differences of VAL and DL to self-confidence on accuracy of nursing diagnosis formulation among nursing students.	What is the difference of VAL and DL to self-confidence on accuracy of nursing diagnosis formulation among nursing students?	HO4. There is no significant difference in self-confidence scores (measured by the Self-Confidence Scale) of nursing students who follow VAL and DL.	Questionnaire NLN 2005	Descriptive analysis • mean • SD Inferential statistics • Independent t test
7	To determine the differences of VAL and DL to simulation design on accuracy of nursing diagnosis formulation among nursing students.	What is the difference of VAL and DL to simulation design on accuracy of nursing diagnosis formulation among nursing students?	HO5. There is no significant difference in simulation scores (measured by the Simulation Design Scale) of nursing students who follow VAL and DL.	Questionnaire NLN 2005	Descriptive analysis • mean • SD Inferential statistics • Independent t test

3.11 Summary

In this chapter the research methodology that was discussed has focused on the following sub topics: research design, research setting, populations, sampling method, variables, instrumentation, procedures of the study which were inclusive of details of study materials; preparation of teacher; preparation of nursing students; data collection, ethical consideration and data analysis.

CHAPTER 4

DATA ANALYSIS AND RESULTS

4.1 Introduction

This chapter presents the findings of the study which evaluated the differential effects of VAL and DL on accuracy of nursing diagnosis formulation, satisfaction, self-confidence and simulation design among nursing students. In VAL, the lecture with PowerPoint, and two videos on patient with medical and surgical scenarios. However for the DL, the lecture with PowerPoint and two scenarios in word processor on patient with medical and surgical scenarios. The accuracy of nursing diagnosis formulation by the nursing students was measured via D-Catch Guide Diagnosis which was a scoring checklist for nursing diagnosis developed by Paans et al. (2010). The other variables of this interventional educational research were satisfaction, self-confidence, simulation design which were measured via the National League Nursing (NLN 2005) questionnaire.

The total participants for this study were 66 nursing students. The intervention (VAL) and control (DL) groups had 33 participants respectively. The Mann-Whitney U test and Wilcoxon Paired Signed-Ranks test were used to analyse Post Test 1 (immediate) and Post Test 2 (two weeks later) of accurate nursing diagnoses. The independent t test was used to analyse the satisfaction, self-confidence and simulation design. Prior to conducting the statistical analysis test, the test for normality and test of homogeneity of variances were conducted to fulfil the assumptions.

4.2 Checking Assumptions

Checking assumptions is important to ensure compliance of the statistical tests used for this study. Therefore, a preliminary analysis of the data from this study was conducted according to the objectives of the study. The test of normality using Shapiro-Wilk was used since the total number of participants in each group was only 33 in this study (Polit & Beck, 2017). The homogeneity check was performed on the variances using Levene's statistics for the accuracy of the nursing diagnosis, satisfaction, self-confidence and simulation design for the VAL and DL.

4.2.1 Tests of Normality for the Accuracy of Nursing Diagnosis according to VAL and DL Using Shapiro-Wilk

Tests of normality for the accuracy of the nursing diagnosis for Post Test 1 and Post Test 2 for medical scenario and surgical scenario using Shapiro-Wilk was conducted according to delivery methods of teaching. If the significance values were greater than .05 indicating that all the scores were normally distributed (Polit & Beck, 2017). However, as shown in Table 4.1 only Post Test 1 for surgical scenario (VAL) has $p > .546$ concluding normality assumption was met in this score. The rest of the scores for VAL and DL have $p < .05$ concluding normality assumption were not met in these scores.

Table 4.1 Tests of Normality for the Accuracy of the Nursing Diagnoses according to VAL and DL for medical and surgical scenarios using Shapiro-Wilk (n=66)

Accuracy of the Nursing Diagnoses Score	VAL			DL		
	Statistics	<i>df</i>	<i>p</i>	Statistics	<i>df</i>	<i>p</i>
Post Test 1 for medical scenario	.792	33	.000	.880	33	.002
Post Test 2 for medical scenario	.726	33	.000	.875	33	.001
Post Test 1 for surgical scenario	.972	33	.546	.915	33	.014
Post Test 2 for surgical scenario	.878	33	.002	.921	33	.020

4.2.2 Test of Homogeneity of Variances for the Accuracy of the Nursing Diagnosis

The test for homogeneity of variances using Levene's test was used for the accuracy of the nursing diagnoses for Post Test 1 and Post Test 2 for medical scenario and surgical scenario. The data showed the significance level was greater than .05 for Post Test 2 for medical scenario and surgical scenario indicating that the data did not violate the homogeneity of variances assumption as in Table 4.2. However, the assumption of homogeneity of variances was violated for Post Test 1 for medical and surgical scenarios with $p < .023$ and $<.005$ respectively.

Table 4.2 Test of Homogeneity of Variances for the Accuracy of the Nursing Diagnoses (n=66)

Accuracy of nursing diagnoses	Levene's Statistics		
	<i>df1</i>	<i>df2</i>	<i>p</i>
Post Test 1 for medical scenario	1	64	.023
Post Test 2 for medical scenario	1	64	.178
Post Test 1 for surgical scenario	1	64	.005
Post Test 2 for surgical scenario	1	64	.208

4.2.3 Tests of Normality for the Satisfaction, Self-confidence and Simulation

Design according to VAL and DL using Shapiro-Wilk

Tests of normality for the satisfaction, self-confidence and simulation design using Shapiro-Wilk for VAL and DL showed the significance levels were higher than .05 indicating that all the scores were normally distributed (Table 4.3).

Table 4.3 Tests of Normality for the Satisfaction, Self-confidence and Simulation Design according to VAL and DL using Shapiro-Wilk (n=66)

	VAL			DL		
	Statistics	<i>df</i>	<i>p</i>	Statistics	<i>df</i>	<i>p</i>
Satisfaction	.968	33	.424	.955	33	.185
Self-confidence	.968	33	.435	.950	33	.132
Simulation design	.963	33	.320	.939	33	.062

4.2.4 Test of Homogeneity of Variances for the Satisfaction, Self-Confidence and Simulation Design.

The test for homogeneity of variances using Levene's test was used for the satisfaction, self-confidence and simulation design. The data showed the significance levels were greater than .05 indicating that the data did not violate the homogeneity of variances assumption (Table 4.4).

Table 4.4 Test of Homogeneity for the Satisfaction, Self-Confidence and Simulation Design (n=66)

Variables	Levene's Statistics		
	<i>df1</i>	<i>df2</i>	<i>p</i>
Satisfaction	1	64	.698
Self-confidence	1	64	.694
Simulation design	1	64	.674

4.3 Demographic Characteristics

Table 4.5 shows the frequency and percentage distributions of demographic data of the study according to VAL and DL. A total of 66 nursing students participated in this study; 34 (51.5%) of who were diploma nursing students and 32 (48.5%) were undergraduate nursing students. There were a total of 34 and 32 students who were enrolled in the first year of diploma and undergraduate nursing respectively. The majority of demographic data in both groups were females, 65 (98.5%) and male 1(1.5%). The educational status of the nursing students was 34 (51.5%) SPM certificate; 21 (31.8%) matriculation certificate and 11 (16.7%) STPM certificate.

Table 4.5 Demographic Characteristics of the Participants (n=66)

Variables	VAL (n=33)	DL (n=33)
	<i>f</i> (%)	<i>f</i> (%)
Student Group		
Diploma	17 (51.5)	17 (51.5)
Undergraduate	16 (48.5)	16 (48.5)
Gender		
Male	1 (1.5)	-
Female	32 (98.5)	33 (100)
Educational level		
SPM	17 (51.5)	17 (51.5)
Matriculation	12 (36.4)	9 (27.3)
STPM	4 (12.1)	7 (21.2)

4.4 Research Question 1: What is the difference between VAL and DL on accuracy of nursing diagnosis formulation for medical scenario among nursing students?

The data collection session were analysed with nonparametric, independent sample, Mann-Whitney U test to evaluate for differences between the two groups for each of the dependent variables.

4.4.1 Accuracy of Nursing Diagnosis with VAL for Post Test 1 and Post Test 2 (Medical Scenario)

In this medical scenario, the nursing students were required to identify and formulate five accurate nursing diagnoses from the VAL teaching method. The Post Test 1 score was done after teaching the topic on nursing diagnosis for two hours. The Post Test 2 score was taken two weeks later on the same medical scenario video for the same duration. In this study the Post Test 1 score for video assisted lecture was total of 20 marks. Table 4.6 shows the accurate nursing diagnosis score with VAL for Post Test 1 and Post Test 2 of medical scenario. In Post Test 1 the lowest score of 2 marks (n=1, 3%); 3 marks (n=1, 3%); 8 marks (n=1, 3%); 12 marks (n=3, 9%); 14 marks (n=2, 6.1%); 15 marks (n=2, 6.1%); 16 marks (n=12, 36.4%); 17 marks (n=2, 6.1%); 18 marks (n=4, 12.1%) and 20 marks (n=5, 15.2%).

Moreover, the results also revealed that in the Post Test 2 marks for video assisted lecture was 2 marks (n=1, 3.0%); 4 marks (n=1, 3.0%); 8 marks (n=1, 3.0%); 12 marks (n=3, 9%); 14 marks (n=1, 3.0%); 15 marks (n=1, 3.0%); 16 marks (n=5, 15%); 18 marks (n=3, 9%) and 20 marks (n=17, 52%). The highest Post Test 1 score was 16 marks (n=12, 36.4%) and Post Test 2 score was 20 marks (n=17, 52%). Therefore, the maximum score of 20 marks for Post Test 1 medical scenario was only (n=5, 15.2%) and for the Post Test 2 medical scenario there was (n=17, 52%). The maximum percentage for Post Test 1 score highest mark was 16 marks (n=12, 36.4%) and Post Test 2 score highest mark was 20 marks (n=17, 52%).

Table 4.6 Frequency and Percentage of Accurate Nursing Diagnosis Scores with VAL for Post Test 1 and Post Test 2 (Medical Scenario) (n= 33)

Teaching Method	Post Test 1 (Medical)	<i>n</i>	%	Teaching Method	Post Test 2 (Medical)	<i>n</i>	%
	20 marks				20 marks		
VAL	20	5	15.2	VAL	20	17	52
VAL	19	-	-	VAL	19	-	-
VAL	18	4	12.1	VAL	18	3	9.0
VAL	17	2	6.1	VAL	17	-	-
VAL	16	12	36.4	VAL	16	5	15
VAL	15	2	6.1	VAL	15	1	3.0
VAL	14	2	6.1	VAL	14	1	3.0
VAL	13	-	-	VAL	13	-	-
VAL	12	3	9.0	VAL	12	3	9.0
VAL	11	-	-	VAL	11	-	-
VAL	10	-	-	VAL	10	-	-
VAL	9	-	-	VAL	9	-	-
VAL	8	1	3.0	VAL	8	1	3.0
VAL	7	-	-	VAL	7	-	-
VAL	6	-	-	VAL	6	-	-
VAL	5	-	-	VAL	5	-	-
VAL	4	-	-	VAL	4	1	3.0
VAL	3	1	3.0	VAL	3	-	-
VAL	2	1	3.0	VAL	2	1	3.0
VAL	1	-	-	VAL	1	-	-
VAL	0	-	-	VAL	0	-	-

4.4.2 Accuracy of Nursing Diagnosis with DL for Post Test 1 and Post Test 2 (Medical Scenario)

Table 4.7 shows the accurate ND score with DL for Post Test 1 and Post Test 2 of medical scenario. In this medical scenario, the nursing students are required to identify and formulate five accurate nursing diagnoses from the DL teaching method. The Post Test 1 score was taken after teaching the topic on nursing diagnosis for two hours. The Post Test 2 score was taken two weeks later on the same medical scenario didactic lecture for the same duration. In this study the Post Test 1 score for didactic lecture was total of 20 marks. The Post Test 1 marks for didactic lecture was 4 marks (n=5, 15.2%); 6 marks (n=1, 3%); 8 marks (n=2, 6.1%); 10 marks (n=1, 3%); 12 marks (n=8, 24.2%); 14 marks (n=1, 3%); 16 marks (n=10, 30.3%); 18 marks (n=3, 9%); and 20 marks (n=7, 21.2%).

The results also revealed that in the Post Test 2 marks for didactic lecture was 10 marks (n=2, 6.1%); 4 marks (n=1, 3.0%); 8 marks (n=1, 3.0%); 12 marks (n=3, 9%); 14 marks (n=1, 3.0%); 15 marks (n=1, 3.0%); 16 marks (n=5, 15%); 18 marks (n=3, 9%); and 20 marks (n=9, 27.3%). Therefore, the maximum score of 20 marks for immediate medical scenario was only (n=7, 21.2%) and for the post medical scenario there was (n=9, 27.3%). The maximum percentage for Post Test 1 score highest mark was 16 marks (n=9, 27.3%) and Post Test 2 score highest mark was 16 marks (n=10, 33.3%).

Table 4.7 Frequency and Percentage for Accurate Nursing Diagnosis Scores with DL for Post Test 1 and Post Test 2 (Medical Scenario) (n=33)

Teaching Method	Post Test 1 (Medical)	<i>n</i>	%	Teaching Method	Post Test 2 (Medical)	<i>n</i>	%
	20marks				20marks		
DL	20	7	21.2	DL	20	9	27.3
DL	19	-	-	DL	19	-	-
DL	18	1	3.0	DL	18	3	9.0
DL	17	-	-	DL	17	-	-
DL	16	9	27.3	DL	16	10	30.3
DL	15	-	-	DL	15	-	-
DL	14	3	9.0	DL	14	1	3.1
DL	13	-	-	DL	13	-	-
DL	12	4	12.0	DL	12	8	24.2
DL	11	-	-	DL	11	-	-
DL	10	1	3.1	DL	10	2	6.1
DL	9	-	-	DL	9	-	-
DL	8	2	6.1	DL	8	-	-
DL	7	-	-	DL	7	-	-
DL	6	1	3.1	DL	6	-	-
DL	5	-	-	DL	5	-	-
DL	4	5	15.2	DL	4	-	-
DL	3	-	-	DL	3	-	-
DL	2	-	-	DL	2	-	-
DL	1	-	-	DL	1	-	-
DL	0	-	-	DL	0	-	-

4.4.3 Differences in Mean Scores for Accuracy of Nursing Diagnosis between VAL and DL for Medical Scenario

In this study, the nursing students were required to identify and formulate five accurate nursing diagnoses from the VAL and DL for the medical scenario. The Post Test 1 was conducted after teaching the topic on nursing diagnosis for two hours via VAL and DL respectively. Then Post Test 2 was conducted two weeks later on the same medical scenario for two hours via VAL and DL respectively. Table 4.8 shows the differences of accuracy of nursing diagnoses scores with VAL and DL for medical scenario. The accuracy of nursing diagnosis scores for Post Test 1 was higher for VAL ($M=15.30$, $SD=4.22$) compared to Post Test 1 for DL ($M=13.45$, $SD=5.48$). The Post Test 2 for VAL ($M=16.76$, $SD=4.75$) was also higher than the DL ($M=15.88$, $SD=3.35$). Overall the accuracy of nursing diagnosis scores for VAL showed higher scores than DL.

Table 4.8 Differences in Accuracy of Nursing Diagnosis Scores between VAL and DL for Medical Scenario (n=66)

Medical Scenario	VAL		DL	
	Post Test 1	Post Test 2	Post Test 1	Post Test 2
Mean	15.30	16.76	13.45	15.88
Median	16	20	16	16
Std. Deviation	4.22	4.75	5.48	3.35
Minimum	2	2	4	10
Maximum	20	20	20	20
Range	18	18	16	10
Interquartile Range	4	5	8	8

4.4.4 Differences between VAL and DL on Accuracy of Nursing Diagnosis (Medical Scenario) for Post Test I and Post Test 2

The significant differences between VAL and DL on accuracy of nursing diagnosis scores for the Post Test 1 and Post Test 2 for the medical scenario was determined using the Mann-Whitney U test. The Table 4.9 shows that the Post Test 1 for medical scenario for VAL (*median*=16, *IQR*=4) obtained a similar score for accuracy of nursing diagnosis to DL (*median*=16, *IQR*=8). It also showed that the Post Test 2 for medical scenario for VAL (*median*=20, *IQR*=5) obtained a higher score for accuracy of nursing diagnosis than DL (*median*=16, *IQR*=8).

The Mann-Whitney U test confirms that the difference was not significant whereby the Z statistics was -1.336 and *p* value was .182 for the Post Test 1 score for medical scenario between VAL and DL. Further the Mann-Whitney U test confirms that the difference was not significant whereby the Z statistics was -1.696 and *p* value was .090 for the Post Test 2 for medical scenario between VAL and DL. Therefore, null hypothesis that is “there was no significant difference in accuracy of nursing diagnoses score between VAL and DL for medical scenario” is accepted. The effect size for Post Test 1 was 0.16 and for Post Test 2 was 0.21 for medical scenario which denotes both tests have small effect size (Cohen, 1988). The two groups mean differ by standard deviation as suggested by Cohen that $d=0.2$ be considered a ‘small’ effect size, 0.5 represents a ‘medium’ effect size and 0.8 a ‘large’ effect size (Cohen, 1988).

Table 4.9 Median score differences between VAL and DL for Post Test 1 and Post Test 2 (Medical Scenario) (n=66)

Accuracy of nursing diagnoses	Median Score (IQR)				
	VAL	DL	Z statistic	p value*	Cohen's d
Post Test 1 for Medical scenario	16 (4)	16 (8)	-1.336	.182	0.16
Post Test 2 for Medical scenario	20 (5)	16 (8)	-1.696	.090	0.21

Note. * Mann-Whitney U test
The significant level was set at <.05

4.5 Research Question 2: What is the difference within VAL and DL on accuracy of nursing diagnosis formulation for medical scenario among nursing students?

The differences in the nursing students' performance between the Post Test 1 and Post Test 2 were evaluated using nonparametric related-sample, Wilcoxon Paired Signed-Ranks test.

4.5.1 Differences in Accuracy of Nursing Diagnosis within VAL for Post Test 1 and Post Test 2 for Medical Scenario

The differences in accuracy of nursing diagnosis for medical scenario within VAL for Post Test 1 and Post Test 2 was performed using the Wilcoxon Paired Signed-Ranks test. The Table 4.10 shows that Post Test 2 for VAL (*median*=20.00, *IQR*=18) obtained a higher accuracy of nursing diagnosis scores compared to Post Test 1 for VAL (*median*=16.00, *IQR*=18). The Wilcoxon Paired Signed-Ranks test confirms that there was no significant difference whereby the Z statistics was -1.635 and p value was .102 for the

medical scenario within VAL. The effect size for paired two weeks later test was 0.15 for medical scenario which denotes a small effect size, Cohen (1988).

Table 4.10 Differences of median score in Accuracy of Nursing Diagnosis within VAL for Post Test 1 and Post Test 2 for Medical Scenario (n=33)

Accuracy of Nursing Diagnoses VAL	Median Score (IQR)				
	Post Test 2	Post Test 1	Z statistic	p value*	Cohen's d
Medical scenario	20.00 (18)	16.00 (18)	-1.635	.102	0.15

Note. * Wilcoxon Paired Signed-Ranks test
The significant level was set at <0.05

4.5.2 Differences in Accuracy of Nursing Diagnosis within DL for Post Test 1 and Post Test 2 for Medical Scenario

The differences in accuracy of nursing diagnosis for medical scenario within DL for Post Test 1 and Post Test 2 was performed using the Wilcoxon Paired Signed-Ranks test. The descriptive data in Table 4.11 shows that the Post Test 2 for DL (*median*=16.00, *IQR*=10) obtained a lower accuracy of nursing diagnosis scores compared to Post Test 1 for DL (*median*=16.00, *IQR*=16). The Wilcoxon Paired Signed-Ranks test confirms that there was no significant difference whereby the Z statistics was -2.469 and *p* value was .014 for the medical scenario within DL. The effect size for paired Post Test 2 was 0.74 for medical scenario which denotes a large effect size, Cohen (1988).

Table 4.11 Differences of median score in Accuracy of Nursing Diagnosis within DL for Post Test 1 and Post Test 2 for Medical Scenario (n=33)

Accuracy of Nursing Diagnoses DL	Median (IQR)		Z statistic	p value*	Cohen's d
	Post Test 2	Post Test 1			
Medical scenario	16.00 (10)	16.00 (16)	-2.469	.014	0.74

Note. * Wilcoxon Paired Signed-Ranks test
The significant level was set at <0.05

4.6 Research Question 3: What is the difference between VAL and DL on accuracy of nursing diagnosis formulation for surgical scenario among nursing students?

The data collection session were analysed with nonparametric, independent sample, Mann-Whitney U test to evaluate for differences between the two groups for each of the dependent variables.

4.6.1 Accuracy of Nursing Diagnosis with VAL for Post Test 1 and Post Test 2 (Surgical Scenario)

Table 4.12 shows the accurate nursing diagnosis scores with VAL for Post Test 1 and Post Test 2 of surgical scenario. In this surgical scenario, the students are required to identify and formulate five accurate nursing diagnoses from the VAL teaching method. The Post Test 1 score was taken after teaching the topic on nursing diagnosis for two hours. The Post Test 2 score was taken two weeks later on the same surgical video scenario for the same duration. In this study the Post Test 1 marks for video assisted lecture was 4 marks (n=1, 3%); 6 marks (n=1, 3%); 8 marks (n=2, 6.1%); 10 marks (n=4, 12.1%); 11 marks

(n=2, 6.1%); 12 marks (n=5, 9.1%); 14 marks (n=8, 24.2%); 15 marks (n=1, 3%); 16 marks (n=4, 12.1%); 17 marks (n=1, 3%); 18 marks (n=3, 9.1%); and 20 marks (n=1, 3%). The results in the Post Test 2 marks with VAL was 10 marks (n=3, 9.1%); 11 marks (n=1, 3%); 12 marks (n=7, 21.2%); 14 marks (n=3, 9.1%); 15 marks (n=1, 3.0%); 16 marks (n=4, 12.1%); 18 marks (n=5, 15.2%); and 20 marks (n=9, 27.3%). Therefore the maximum score of 20 marks for Post Test 1 surgical scenario was only (n=1, 3%) and for the Post Test 2 surgical there was (n=9, 27.3%). The maximum percentage for Post Test 1 score highest mark was 14 marks (n=8, 24.2%) and Post Test 2 score highest mark was 20 marks (n=9, 27.3%).

Table 4.12 Frequency and Percentage for Accurate Nursing Diagnosis Scores with VAL for Post Test 1 and Post Test 2 (Surgical Scenario) (n= 33)

Teaching Method	Post Test 1	<i>n</i>	%	Teaching Method	Post Test 2	<i>n</i>	%
	(Surgical)				(Surgical)		
	20marks				20marks		
VAL	20	1	3.0	VAL	20	9	27.3
VAL	19			VAL	19	-	-
VAL	18	3	9.1	VAL	18	5	15.2
VAL	17	1	3.0	VAL	17	-	-
VAL	16	4	12.1	VAL	16	4	12.1
VAL	15	1	3.0	VAL	15	1	3.0
VAL	14	8	24.2	VAL	14	3	9.1
VAL	13	-	-	VAL	13	-	-
VAL	12	5	9.1	VAL	12	7	21.2
VAL	11	2	6.1	VAL	11	1	3.0
VAL	10	4	12.1	VAL	10	3	9.1
VAL	9	-	-	VAL	9	-	-
VAL	8	2	6.1	VAL	8	-	-
VAL	7	-	-	VAL	7	-	-
VAL	6	1	3.0	VAL	6	-	-
VAL	5	-	-	VAL	5	-	-
VAL	4	1	3.0	VAL	4	-	-
VAL	3	-	-	VAL	3	-	-
VAL	2	-	-	VAL	2	-	-
VAL	1	-	-	VAL	1	-	-
VAL	0	-	-	VAL	0	-	-

4.6.2 Accuracy of Nursing Diagnosis with DL for Post Test 1 and Post Test 2 (Surgical Scenario)

Table 4.13 shows the accurate nursing diagnosis scores with DL for Post Test 1 and Post Test 2 of surgical scenario. In this surgical scenario, the nursing students are required to identify and formulate five accurate nursing diagnoses from the DL teaching method. The Post Test 1 score was taken after teaching the topic on nursing diagnosis for two hours. The Post Test 2 score was taken two weeks later on the same surgical scenario didactic lecture for the same duration. In this study the Post Test 1 score for didactic lecture was total of 20 marks. The Post Test 1 marks for didactic lecture was zero mark (n=2, 6.1%); 1 mark (n=3, 9.1%); 2 marks (n=2, 6.1%); 3 (n=1, 3%); 4 marks (n=5, 15.2%); 6 marks (n=4, 12.1%); 7 marks (n=1, 3%); 8 marks (n=4, 12.1%); 10 marks (n=1, 3%); 11 marks (n=2, 6.1%); 12 marks (n=3, 9.1%); 14 marks (n=1, 3%); 16 marks (n=3, 9.1%); and 20 marks (n=3, 9.1%). The results in the Post Test 2 score marks with DL was 2 marks (n=1, 3%); 4 marks (n=1, 3%); 8 marks (n=3, 9.1%); 10 marks (n=4, 12.1%); 12 marks (n=5, 15.2%); 14 marks (n=1, 3%); 16 marks (n=11, 33%); 18 marks (n=2, 6.1%); and 20 marks (15, n=5.2%). Therefore, the maximum score of 20 marks for Post Test 1 surgical scenario was only (n=3, 9.1%) and for the Post Test 2 surgical scenario there was (n=5, 15.2%). The maximum percentage for Post Test 1 highest mark was 4 marks (n=5, 15.2%) and Post Test 2 score highest mark was 16 marks (n=11, 33.3%).

Table 4.13 Frequency and Percentage for Accurate Nursing Diagnosis Scores with DL for Post Test 1 and Post Test 2 (Surgical Scenario) (n= 33)

Teaching Method	Post Test 1 Surgical	<i>n</i>	%	Teaching Method	Post Test 2 Surgical	<i>n</i>	%
	20marks				20marks		
DL	20	3	9.1	DL	20	5	15.2
DL	19	-	-	DL	19	-	-
DL	18	-	-	DL	18	2	6.1
DL	17	-	-	DL	17	-	-
DL	16	3	9.1	DL	16	11	33.3
DL	15	-	-	DL	15	-	-
DL	14	1	3.0	DL	14	1	3.0
DL	13	-	-	DL	13	-	-
DL	12	3	9.1	DL	12	5	15.2
DL	11	-	-	DL	11	-	-
DL	10	1	3.0	DL	10	4	12.1
DL	9	-	-	DL	9	-	-
DL	8	4	12.1	DL	8	3	9.1
DL	7	1	3.0	DL	7	-	-
DL	6	4	12.1	DL	6	-	-
DL	5	-	-	DL	5	-	-
DL	4	5	15.2	DL	4	1	3.0
DL	3	1	3.0	DL	3	-	-
DL	2	2	6.1	DL	2	1	3.0
DL	1	3	9.1	DL	1	-	-
DL	0	2	6.1	DL	0	-	-

4.6.3 Differences in Mean Scores for Accuracy of Nursing Diagnosis Scores between VAL and DL for Surgical Scenario

In this study, the nursing students were required to identify and formulate five accurate nursing diagnoses from the VAL and DL for the surgical scenario. The Post Test 1 was conducted after teaching the topic on nursing diagnosis for two hours using VAL and DL respectively. Then Post Test 2 was conducted two weeks later on the same surgical scenario for two hours using VAL and DL respectively. Table 4.14 shows the differences of accuracy of nursing diagnoses scores with VAL and DL for surgical scenario. The accuracy of nursing diagnosis scores for Post Test 1 was higher for VAL ($M=13.03$, $SD=3.61$) compared to Post Test 1 for DL ($M=7.91$, $SD=6.07$). The score of Post Test 2 for VAL ($M=15.64$, $SD=3.61$) was also higher than the DL ($M=13.82$, $SD=4.65$). Overall the accuracy of nursing diagnosis scores for VAL showed higher scores than DL.

Table 4.14 Differences in Accuracy of Nursing Diagnosis Scores between VAL and DL for Surgical Scenario (n=66)

Surgical Scenario	VAL		DL	
	Post Test 1	Post Test 2	Post Test 1	Post Test 2
Mean	13.03	15.64	7.91	13.82
Median	16	20	16	16
Std. Deviation	3.61	3.61	6.07	4.65
Minimum	4	10	0	2
Maximum	20	20	20	20
Range	16	10	20	18
Interquartile Range	4	5	8	8

4.6.4 Differences between VAL and DL on Accuracy of Nursing Diagnosis (Surgical Scenario) for Post Test I and Post Test 2

The Post Test 1 and the Post Test 2 for the surgical scenario were determined using the Mann-Whitney U independent test. Table 4.15 shows that the Post Test 1 for surgical scenario for VAL (*median*=14, *IQR*=6) obtained a higher accuracy of nursing diagnosis scores compared to DL (*median*=6, *IQR*=9). It also showed that Post Test 2 for surgical scenario for VAL (*median*=16, *IQR*=8) obtained a similar accuracy of nursing diagnosis scores to DL (*median*=16, *IQR*=8).

The Mann-Whitney U test confirms that the difference was statistically significant whereby the *Z* statistics was -3.657 and *p* value was .001 for the Post Test 1 for surgical scenario between VAL and DL. It also confirms that the difference was not statistically significant whereby the *Z* statistics was -1.510 and *p* value was .131 for the Post Test 2 for surgical scenario between VAL and DL. Therefore, the null hypothesis for the Post Test 2 was accepted as there was no statistically significant difference in accuracy of nursing diagnoses score between VAL and DL for Post Test 2. The null hypothesis for the Post Test 1 was not rejected as there was a statistically significant difference in accuracy of nursing diagnoses score between VAL and DL for the Post Test 1. The effect size for Post Test 1 was 0.45 and for Post Test 2 was 0.19 for surgical scenario which denotes both tests have small effect size (Cohen, 1988).

Table 4.15 Median score differences between VAL and DL for Post Test 1 and Post Test 2 (Surgical Scenario) (n=66)

Accuracy of nursing diagnoses	Median Score (IQR)				
	VAL	DL	Z statistic	p value*	Cohen's d
Post Test 1 for Surgical scenario	14 (6)	6 (9)	-3.657	.000	0.45
Post Test 2 for Surgical scenario	16 (8)	16 (6)	-1.510	.131	0.19

Note.* Mann-Whitney U test
The significant level was set at <0.05

4.7 Research Question 4: What is the difference within VAL and DL on accuracy of nursing diagnosis formulation for surgical scenario among nursing students?

The differences in the nursing students' performance between the Post Test 1 and Post Test 2 were evaluated using nonparametric related-sample, Wilcoxon Paired Signed-Ranks test.

4.7.1 Differences in Accuracy of Nursing Diagnosis within VAL for Post Test 1 and Post Test 2 for Surgical Scenario

The differences in accuracy of nursing diagnosis for surgical scenario within VAL for Post Test 1 and Post Test 2 was performed using the Wilcoxon Paired Signed-Ranks test. The Table 4.16 shows that Post Test 2 for VAL (*median*=16.00, *IQR*=10) obtained a higher accuracy of nursing diagnosis scores compared to Post Test 1 for VAL (*median*=14.00, *IQR*=16). The Wilcoxon Paired Signed-Ranks test confirms that there was a statistically significant difference whereby the Z statistics was -3.611 and *p* value was

.001 for the surgical scenario within VAL. The effect size for paired two weeks later test was 0.15 for surgical scenario which denotes a small effect size (Cohen, 1988).

Table 4.16 Differences of median score in Accuracy of Nursing Diagnosis within VAL for Post Test 1 and Post Test 2 for Surgical Scenario (n=33)

Accuracy of Nursing Diagnoses VAL	Median Score (IQR)				
	Post Test 2	Post Test 1	Z statistic	p value*	Cohen's d
Surgical scenario	16.00 (10)	14.00 (16)	-3.611	.001	0.15

Note. *Wilcoxon Paired Signed-Ranks test
The significant level was set at <0.05

4.7.2 Differences in Accuracy of Nursing Diagnosis within DL for Post Test 1 and Post Test 2 for Surgical Scenario

The differences in accuracy of nursing diagnosis for surgical scenario within DL between Post Test 1 and Post Test 2 was performed using the Wilcoxon Paired Signed-Ranks test. The descriptive data in Table 4.17 shows that the Post Test 2 for DL (*median*=16.00, *IQR*=8) obtained a lower accuracy of nursing diagnosis scores compared to the Post Test 1 for DL (*median*=6.00, *IQR*=20). The Wilcoxon Paired Signed-Ranks test confirms that there was a statistically significant difference whereby the Z statistics was -4.469 and p value was .001 for the surgical scenario within DL. The effect size for paired Post Test 2 was 0.74 for surgical scenario which denotes a large effect size (Cohen, 1988).

Table 4.17 Differences of median score in Accuracy of Nursing Diagnosis within DL for Post Test 1 and Post Test 2 for Surgical Scenario (n=33)

Accuracy of Nursing Diagnoses DL	Median (IQR)		Z statistic	p value*	Cohen's d
	Post Test 2	Post Test 1			
Surgical scenario	16.00 (18)	6.00 (20)	-4.469	.001	0.74

Note. * Wilcoxon Paired Signed-Ranks test
The significant level was set at <0.05

4.8 Research Question 5: What is the difference between VAL and DL to satisfaction on accuracy of nursing diagnosis formulation among nursing students?

The differences in the nursing student's satisfaction between VAL and DL were evaluated using the independent t test.

4.8.1 Differences between VAL and DL to Satisfaction

The students' satisfaction of learning with the teaching methods with VAL and DL was tested with the NLN 2005 questionnaire. Table 4.18 shows the scores for both the teaching methods in mean and standard deviation. In VAL, item number 1 to 4 and 6 to 7 scored higher mean than DL. In DL only one item in number six scored the higher mean than VAL. But the overall mean for satisfaction score in VAL was higher mean at 4.15 whereas for DL the mean was 4.02.

Table 4.18 Mean and Standard Deviation of Satisfaction between VAL and DL Method (n=66)

No	Satisfaction with current learning	Teaching Method			
		VAL (n=33)		DL (n=33)	
		Mean	SD	Mean	SD
1.	The teaching methods used in this simulation were helpful.	4.30	.529	4.06	.556
2.	The teaching methods used in this simulation were effective.	4.21	.600	3.97	.728
3.	The simulation provided me with a variety of learning materials to promote my learning the nursing diagnosis.	4.18	.528	4.06	.609
4.	I enjoyed how my nursing tutor taught the simulation.	4.21	.600	4.03	.770
5.	The teaching materials used in this simulation were motivating me to learn.	3.94	.659	4.00	.661
6.	The teaching materials used in this simulation helped me to learn.	4.27	.674	4.09	.579
7.	The way my instructor taught the simulation was suitable to the way I learn.	3.97	.810	3.94	.788
Total Satisfaction Mean/SD		4.15	.435	4.02	.553

4.8.2 Differences between VAL and DL to Satisfaction

The difference of satisfaction level for formulating nursing diagnosis with VAL and DL was determined using the independent t test. Table 4.19 shows the satisfaction score of the VAL was higher ($M=4.18$, $SD=.46$) than the DL ($M=4.02$, $SD=.55$). However, there was no statistically significant difference in satisfaction level between VAL and DL whereby the $p = > .180$). The effect size for satisfaction was 0.33 denotes a medium effect size (Cohen, 1988).

Table 4.19 Differences of mean score of satisfaction between VAL and DL (n=66)

Variable	Mean (SD)		Mean Difference (95% CI)	<i>t</i> statistic (df)	<i>p</i> value*	<i>Cohen's</i> <i>d</i>
	VAL	DL				
Satisfaction	4.18 (.46)	4.02 (.55)	-.16883 (-.41793, .08026)	-1.354 (64)	.180	0.33

Note. * Independent t test
The significant level was set at <0.05

4.9 Research Question 6: What is the difference between VAL and DL to self-confidence?

The differences in the nursing student's self-confidence between VAL and DL were evaluated using the independent t test.

4.9.1 Differences between VAL and DL to Self-confidence

Table 4.20 shows the score for both the teaching methods in mean and standard deviation. In VAL, item number 1; 4 to 6 and 9 scored higher mean than DL. In DL item number 2; 7 and 8 scored the higher mean than VAL. However, the overall mean for self-confidence for VAL was 3.99 which was higher than the mean of DL (3.96).

Table 4.20 Mean and Standard Deviation of Self-confidence between VAL and DL Method (n=66)

No	Self-Confidence In Learning	Teaching Method			
		VAL (n=33)		DL (n=33)	
		Mean	SD	Mean	SD
1	I am confident that I am mastering the content of the simulation activity that my instructors presented to me.	3.48	.712	3.42	.708
2	I am confident that this simulation covered critical content necessary for the mastery of formulating accurate ND.	3.67	.692	3.76	.561
3	I am confident that I am developing the skills from this simulation to perform necessary tasks in a clinical setting.	3.82	.683	3.82	.727
4	I am confident that I am obtaining the required knowledge from this simulation to perform necessary tasks in a clinical setting.	3.91	.678	3.82	.584
5	My instructor used helpful resources to teach the simulation.	4.33	.595	4.24	.561
6	It is my responsibility as the student to learn what I need to know from this simulation activity.	4.61	.496	4.42	.561
7	I know how to get help when I do not understand the concepts covered in the simulation.	4.06	.609	4.12	.650
8	I know how to use simulation activities to learn critical aspects of these skills.	3.88	.485	4.00	.612
9	It is the instructor's responsibility to tell me what I need to learn of the simulation activity content during class time.	4.15	.795	4.03	.728
Total Self-Confidence Mean/SD		3.99	.390	3.96	.378

4.9.2 Differences between VAL and DL to Self-Confidence

The difference of self-confidence level for formulating nursing diagnosis with VAL and DL was determined using the independent t test. Table 4.21 shows the self-confidence score of the VAL was higher ($M=4.01$, $SD=.42$) than the DL ($M=4.00$, $SD=.38$). However, there was no statistically significant difference in self-confidence level between VAL and DL whereby the $p = > .586$). The effect size for self-confidence was 0.03 denotes a small effect size (Cohen, 1988).

Table 4.21 Differences of mean score of self-confidence between VAL and DL (n=66)

Variable	Mean (SD)		Mean Difference (95% CI)	t statistic (df)	p value*	Cohen's d
	VAL	DL				
Self - Confidence	4.01 (.42)	4.00 (.38)	-.05387 (-.25032, .14258)	-.548 (64)	.586	0.03

Note. * Independent t test
The significant level was set at <0.05

4.10 Research Question 7: What is the difference between VAL and DL to simulation design on accuracy of nursing diagnosis formulation among nursing students?

The differences in the nursing student's simulation design between VAL and DL were evaluated using the independent t test.

4.10.1 Differences between VAL and DL to Simulation Design

Table 4.22 shows the score for both the teaching methods in mean and standard deviation. In VAL, items number 1 to 2; 5 to 6; 8 to 11; 13 to 16; 19 to 21 to 6 and 9 scored higher mean than DL. In DL items number 3 to 4; 12; 17 to 18 and 22 to 23 scored the higher mean than VAL. The overall mean for simulation design for VAL was 4.14 and 4.10 for DL.

Table 4.22 Mean and Standard Deviation of Simulation design between VAL and DL Method (n=66)

No	Simulation Design	Teaching Method			
		VAL (n=33)		DL (n=33)	
		Mean	SD	Mean	SD
Objectives And Information					
1	There was enough information provided at the beginning of the simulation to provide direction and encouragement.	4.15	.712	3.91	.723
2	I clearly understood the purpose of the simulation.	4.03	.684	3.97	.728
3	I clearly understood the objectives of the simulation.	3.97	.684	4.12	.600
4	The simulation provided enough information in a clear matter for me to problem-solve the question.	3.88	.650	3.97	.637
5	There was enough information provided to me during simulation.	3.94	.659	3.79	.857
6	The cues were appropriate and geared to promote my understanding.	4.03	.637	3.88	.740
Support					
7	Support was offered in a timely manner.	4.21	.600	4.21	.485
8	My need for help was recognized by my teacher.	4.15	.712	4.12	.600
9	I felt supported by the teacher's assistance during the simulation.	4.24	.663	4.15	.712
10	I was supported in the learning process.	4.39	.556	4.33	.540

Table 4.22, continued

Problem Solving					
11	Independent problem-solving was facilitated.	3.94	.659	3.91	.631
12	I was encouraged to explore all possibilities of the simulation.	4.00	.500	4.15	.667
13	The simulation was designed for my specific level of knowledge.	4.00	.661	3.88	.696
14	The simulation was designed for my specific level of skills.	3.97	.637	3.91	.765
15	The simulation allowed me the opportunity to prioritize nursing assessments and care.	4.21	.600	4.18	.683
16	The simulation provided me an opportunity to goal set for patient	4.36	.603	4.12	.600
Feedback/Guided Reflection					
17	Feedback provided was constructive.	4.12	.485	4.15	.508
18	Feedback was provided in a timely.	4.12	.485	4.15	.508
19	The simulation allowed me to analyse my own behaviour.	4.09	.631	4.00	.612
20	The simulation allowed me to analyse my own actions.	4.15	.667	3.94	.659
21	There was an opportunity after the simulation to obtain feedback from the nursing tutor in order to build knowledge to another level.	4.33	.540	3.94	.747
Realism					
22	The scenario resembled a real-life situation.	4.30	.529	4.39	.659
23	Real life factors, situations and variables were built into the simulation scenario.	4.27	.574	4.30	.684
Simulation Design Total Mean		4.17	.392	4.10	.415

4.10.2 Differences between VAL and DL to Simulation Design

The differences of simulation design for formulating nursing diagnosis with VAL and DL was determined using the independent *t*-test. Table 4.23 shows the simulation design score of the VAL was higher ($M=4.13$, $SD=.38$) than the DL ($M=4.06$, $SD=.45$). However, there was no statistically significant difference in simulation design level between VAL and DL whereby the $p = > .519$). The effect size for simulation design denotes a small effect size, Cohen (1988).

Table 4.23 Difference of mean score of simulation design between VAL and DL (n=66)

Variable	Mean (<i>SD</i>)		Mean Difference (95% CI)	<i>t</i> statistic (df)	<i>p</i> value*	Cohen's <i>d</i>
	VAL	DL				
Simulation Design	4.13 (.38)	4.06 (.45)	-.06588 (-.26904, .13729)	-.648 (64)	.519	0.17

Note. * Independent *t* test
The significant level was set at <0.05

4.10.3 Differences of Mean Scores for Satisfaction, Self-Confidence and Simulation Design between VAL and DL

The students' level of satisfaction, self-confidence and simulation design of learning between VAL and DL was tested with the NLN 2005 questionnaire. Table 4.24 shows the scores for both the delivery teaching methods in mean and standard deviation. In VAL, satisfaction ($M=4.18$, $SD=.46$), self-confidence ($M=4.01$, $SD=.42$) and simulation design ($M=4.13$, $SD=.38$) scored higher mean than DL for satisfaction ($M=4.02$, $SD=.55$), self-confidence ($M=4.00$, $SD= .38$) and simulation design ($M=4.06$, $SD= .45$).

Table 4.24 Differences of Mean and Standard Deviation of Satisfaction, Self-Confidence and Simulation Design between VAL and DL (n=66)

	VAL			DL		
	Satisfaction	Self-Confidence	Simulation Design	Satisfaction	Self-Confidence	Simulation Design
Mean	4.18	4.01	4.13	4.02	4.00	4.06
SD	.46	.42	.38	.55	.38	.45
Range	1.86	1.56	1.48	2.00	1.33	2.04
Min	3.14	3.33	3.30	3.00	3.33	2.96
Max	5.00	4.89	4.78	5.00	4.67	5.00

4.11 Summary

The data analysed and reported in this chapter indicate some statistically significant effect of VAL and DL on overall change in student ability to formulate accurate nursing diagnosis from the two types of simulation teaching and learning on nursing diagnosis. Analysis addressed the categories of accurate nursing diagnosis formulation Pre Test 1 and Post Test 2, satisfaction, self-confidence and simulation design learning contributed to the overall score. The data indicated that from VAL for both the medical and surgical scenarios, the scores were higher compared to DL in medical scenario and surgical scenarios. But they were not statistically significant with accuracy of nursing diagnoses

overall change scores. The data also did not demonstrate a statistically significant effect on student satisfaction, self-confidence and simulation design learning from the VAL and DL simulation pedagogy. In conclusion, repetition of a simulation demonstrated some positive differences effects on competence to formulate accurate nursing diagnosis.

CHAPTER 5

DISCUSSION AND CONCLUSION

5.1 Introduction

This chapter discusses the results of this quantitative intervention study to generate an understanding of the differences between video assisted lecture and didactic lecture on the accuracy of nursing diagnosis, satisfaction, self-confidence and simulation design among nursing students. The research study was based on an experimental design, which included a Post Test 1 and Post Test 2 assessment, in order to evaluate the differential effects of an intervention provided in the form of video assisted lecture and didactic lecture session reviewing the students' knowledge to formulate accurate nursing diagnosis.

The eligible nursing students that volunteered for participation in the study were randomly assigned to either the intervention or the control group. While only the simulation group took part in the intervention, both were asked to complete the National League of Nursing (NLN) tool on satisfaction, self-confidence and simulation design at the Post Test 2 stage. This facilitated comparison of the scores between those who received the intervention and those who did not, in order to evaluate if the changes in the scores achieved by the simulation group could be attributed to the additional training they received. Identifying the research study limitations, highlighting the implications of the results for clinical education, practice, and research and the recommendations for future research follows this.

5.2 Summary of the Main Study Findings

In nursing education, innovative teaching strategies are strongly advocated (Gaba, 2004; Jeffries, 2005; Medley & Horne, 2005; and Campbell & Daley, 2013). Thus, many studies were conducted using a wide range of simulation strategies in the nursing curriculum (Aebersold, Tschannen & Bathish, 2012; Tschannen, et al., 2012; Johnson, et al., 2012; Grant, et al., 2014; and Hernández-Padilla, et al., 2016). The nursing diagnosis is pertinent in nursing because it is a common language that use NANDA-I, nursing diagnosis taxonomy by nurses to treat patients' responses to health problems and/or life processes (Herdman & Kamitsuru, 2014).

In this study, the accuracy of nursing diagnosis among nursing students of VAL and DL was measured with the D-Catch Guide Diagnosis instrument (Paans et al., 2010). In addition the satisfaction, self-confidence and simulation design were measured with NLN 2005 questionnaire. The setting for the study was in a local university located in Kelantan. The participants consisted of 66 participants with 33 participants in VAL group and 33 participants in DL group. Participants were nursing students in the first year of academic intake 2017/2018 and first semester. The majority of participants were females (98.5%).

The participants were randomly assigned to VAL or DL group. All participants participated in two intervention sessions, the first intervention was after the lecture on nursing diagnosis. The second intervention was 2 weeks later after the first intervention. During the two sessions, the same medical and surgical scenarios were used for the

participants in the VAL and DL groups. The first session lasting for 2 hours to formulate nursing diagnosis for the medical and surgical scenario. In the end of the session, Post Test 1 for accuracy of nursing diagnosis was measured for both groups. Then 2 weeks later, participants had the second session lasting for an hour to formulate nursing diagnosis from the same medical and surgical scenario. In the end of this session, Post Test 2 for accuracy of nursing diagnosis, the satisfaction, self-confidence and simulation design was measured for VAL and DL groups.

The findings showed that accuracy of nursing diagnoses scores with VAL for medical scenario for Post Test 1 ($M=15.30$, $SD=4.22$) and Post Test 2 ($M=16.76$, $SD= 4.75$) was higher for VAL as compared to Post Test 1 ($M=13.45$, $SD=5.48$) and Post Test 2 ($M=15.88$, $SD=3.35$) with DL. The findings also showed that accuracy of nursing diagnoses scores with VAL for surgical scenario for Post Test 1 ($M=13.03$, $SD=3.61$) and Post Test 2 ($M=15.64$, $SD=3.61$) was higher for VAL as compared to Post Test 1 ($M=7.91$, $SD=6.07$) and Post Test 2 ($M=13.82$, $SD=4.65$) with DL.

Meanwhile, the differences of accuracy of nursing diagnosis scores between VAL and DL for Post Test 1 and Post Test 2 for the medical scenario was measured with the Mann-Whitney U independent test confirms that the difference was not statistically significant. Therefore, the null hypothesis was not rejected as there was no statistical significant difference of accuracy of nursing diagnosis score between VAL and DL medical scenario.

The differences of accuracy of nursing diagnosis scores between VAL and DL for Post Test 1 and Post Test 2 for the surgical scenario was measured with the Mann-Whitney U test confirms that the difference was statistically significant. Therefore, reject the null hypothesis as there was a statistically significant difference in accuracy of nursing diagnoses score between VAL and DL for the Post Test 1. The Mann-Whitney U test also confirms that the difference was not statistically significant for the Post Test 2 for surgical scenario between VAL and DL. Therefore, the null hypothesis was not rejected as there was no statistical significant difference in accuracy of nursing diagnoses score between VAL and DL for the Post Test 2.

The paired test was performed using the Wilcoxon Paired Signed-Ranks test to see the differences in accuracy of nursing diagnosis for medical scenario within VAL for Post Test 1 and Post Test 2 which confirms that there was no statistical significant difference for the medical scenario within VAL. The effect size for paired two weeks later test was 0.15 for medical scenario which denotes a small effect size.

The paired test was performed using the Wilcoxon Paired Signed-Ranks test to see the differences in accuracy of nursing diagnosis for surgical scenario within VAL for Post Test 1 and Post Test 2 which confirms that there was statistical significant difference for the surgical scenario within VAL. The effect size for paired Post Test 2 was 0.15 for surgical scenario which denotes a small effect size.

The paired test was performed using the Wilcoxon Paired Signed-Ranks test to see the differences in accuracy of nursing diagnosis for medical scenario within DL for Post Test 1 and Post Test 2 which confirms that there was a statistical significant difference for the medical scenario within DL. The effect size for paired Post Test 2 was 0.74 for medical scenario which denotes a large effect size.

The paired test was performed using the Wilcoxon Paired Signed-Ranks test to see the differences in accuracy of nursing diagnosis for surgical scenario within DL for Post Test 1 and Post Test 2 confirms that there was a statistical significant difference for the surgical scenario within DL. The effect size for paired Post Test 2 was 0.74 for surgical scenario which denotes a large effect size.

The students' level of satisfaction, self-confidence and simulation design of learning between VAL and DL was tested with the NLN 2005 questionnaire and showed in VAL, the satisfaction, self-confidence and simulation design scored higher mean than DL. The differences of satisfaction for formulating nursing diagnosis with VAL and DL was determined using the independent t test showed there was no statistically significant difference in satisfaction level between VAL and DL. The differences of self-confidence for formulating nursing diagnosis with VAL and DL was determined using the independent t test showed there was no statistically significant difference in satisfaction level between VAL and DL. The differences of simulation design formulating nursing diagnosis with VAL and DL was determined using the independent t test showed there was no statistically significant difference in simulation design between VAL and DL.

5.3 Accuracy of Nursing Diagnosis Formulation

Accurate nursing diagnosis for the patient is very important because it is the basis to provide adequate and high-quality nursing care (Lunney, 2006 & 2007). Hence, nursing students need to develop skills to diagnose their patients nursing diagnosis. Jensen, Cruz, Gomez and Lopes (2013) stated any inaccurate nursing diagnosis further lead to inadequate intervention directly affecting the quality of health care provided. In this regard, Costa and Araujo (2015) stated nursing diagnosis is a relevant issue that address more discussion and development in nursing academia, as it impacts on patient's nursing care. The norms in teaching nursing diagnosis is from simple to complex situation of patients problems.

This measure is taken to enable the nursing students to get adapted gradually to the new learning contents. Similarly, Palese et al. (2009) suggested nursing students must begin their practice in medical and surgical settings, progress to other specialty during their course of study. Most importantly, learning is an active and constructive process in which nursing students get to integrate new information with prior knowledge to create new understanding and meaning (Jacobs, Hurley & Unite, 2008). Thus, this enables nursing students to assess and document their patients care plan which lead to quality nursing-sensitive outcomes (Paans & Muller, 2014).

Further, the application of nursing diagnoses in clinical practice is important in order to foster evidence-based nursing care because nursing diagnoses are the beginning point for effective patient care plan (Lunney, 2008; Müller-Staub, 2009; Müller-Staub et al., 2008). It was also strongly remarked that accurately assessing patients' care needs and

precise formulation of nursing diagnoses are vital because nursing diagnoses guide interventions (Gordon, 2008; Lunney, 2008, 2009). Therefore, it was apparent when employing knowledge-based standardized nursing language such as nursing diagnosis, the processes and the value of nursing diagnoses documentation are made easily assessable for scientific evaluations (Muller et al., 2008).

According to Paans et al. (2010) if nursing professionals utilise non-standardized, or incomplete documentation in nursing care plan portrays a documentation result that misinforms hospital administration. Hence, it can be concluded the importance of nursing professionals to be able to accurately formulate nursing diagnoses for their patients is an important capability and skills, which is an essential factor to ensure patient safety and quality of care (Paans & Muller, 2015). In line with thought, it was essential for the nurses to employ the NANDA-I-related terms to document patients' care needs as are described in the standardized, theory-based nursing diagnoses classification globally.

In a recent study was reported by Yilmaz, Sabanciogullari and Aldemir (2016) to determine the opinions of nursing students regarding the nursing process and their levels of proficiency to formulate nursing diagnoses. Their results revealed that although the students had difficulty in the data collection but they even had more difficulty in identifying the accurate nursing diagnoses. On the contrary, to determine nursing diagnoses via case studies was found by students more successful in determining most of the nursing diagnoses (Hakverdioglu et al., 2014). Thus, the method of teaching nursing diagnosis also influence the results to formulate accurate nursing diagnosis.

5.3.1 Research Question 1: What is the difference between VAL and DL on accuracy of nursing diagnosis formulation for medical scenario among nursing students?

In order to examine the first hypothesis (H_{01a}) “There is no significant difference in accuracy of nursing diagnosis scores among nursing students between VAL and DL for medical scenario” the Mann-Whitney U test was conducted to describe the findings of the study. In this study the nursing students’ ability to formulate accurate nursing diagnosis with VAL for the medical scenario showed higher score for Post Test 1 and also for the Post Test 2, two weeks compared to DL scores. However, there was no significant differences in accuracy of nursing diagnosis between VAL and DL for medical scenario. Moreover, the effect size for both VAL and DL were small effect size thus no differences between both teaching methods.

This finding may be explained by the fact that the medical scenario based on asthma via VAL had delivered a clear episode of the patient’s condition. In VAL, it can be a motivating strategy for clinical case presentation since the nursing students have no exposure and experience to clinical posting yet in their first semester. Hence, enable them to formulate more accurate nursing diagnosis compared to DL. This is because in video the nursing students were able to utilise audio visual effects such as see, hear from the video display and read the scenario in power point (Dale, 1969).

The average information retention rate for various methods of teaching can guide the teaching instructors to design instructional activities that build upon more real-life experiences (Dale, 1969). Dale's Cone of Experience is a tool to help instructors make decisions about resources and activities. According to Dale's Cone of learning (1969) as in Figure 5.1, shows the ways one can retain information for which the deeper the learning and the better the recall. In this study, this fact was supported by conducting the nursing diagnosis via VAL which was video as an element of visual learning (Jacobs et al., 2008; Masters, 2013). Thus, enables the nursing students in VAL to hear and see can retain from visual learning to formulate accurate nursing diagnosis better in immediate test and two weeks later test. Meanwhile, the nursing students receiving DL only hear and read from the power point the medical scenario. In the Figure 5.1, it shows that from visual learning, 50% of what one see and hear can retain information, but can retain 10% from reading and 20% from hearing words after two weeks (Dale, 1969).

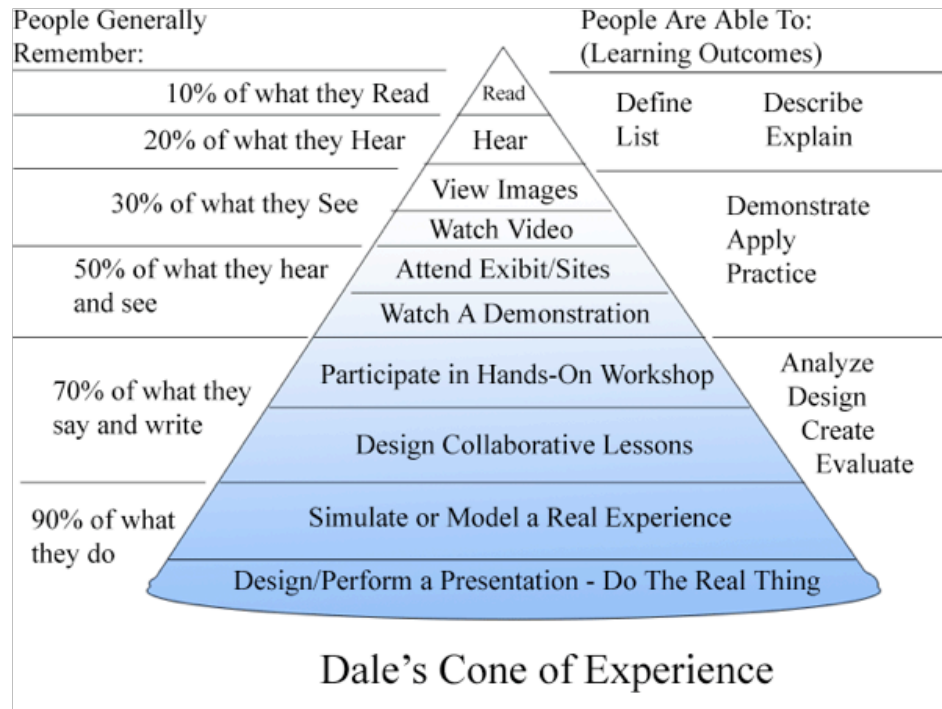


Figure 5.1 Dale's Cone of Learning (Ref: Dale, 1969)

In this study, the nursing students' score on the accuracy of nursing diagnosis formulation was higher after two weeks for both VAL and DL. But the score was even higher for VAL compared to DL after the two weeks as in Table 4.6. This supports that VAL is a better teaching method to enhance nursing students to formulate nursing diagnosis. However, to the researcher knowledge, there was no comparable study in the literature that explained on accuracy of nursing diagnosis with VAL. On contrary there were many studies on the effectiveness of video to improve antenatal examination (Scaria, Valsaraj & Pias, 2013); child birth preparation (Nair, Fernandes & Roach, 2015); quality of life among Type 2 Diabetes (Begum, 2015), verbal communication (Kam, Ainsworth, Handmer, Johnson & Winter, 2016); learning emergency skills (Bala Krishnan, Khaldun,

Hamidah, Johar & Ismail, 2016); and preparation of patients undergoing gastroscopy (Karunagaran, Babu, Simon, Sukumaran & Antonisamy, 2016) concluded that video assisted teaching were more effective than the other methods.

Nevertheless, Costa and Araujo (2015) emphasized that accuracy of nursing diagnosis formulation is a complex cognitive process that directs the nursing students' diagnostic reasoning accurately for their individual client's health condition. Moreover Peres, Jensen and Martins (2016) contend that accuracy of nursing diagnosis must be contemplated in nursing education to enable future nursing professionals to have updated knowledge and increase ability to diagnose in clinical situation. Apparently, Wirihana, Craft, Christensen and Bakon (2017) review of the literature on the integration of video learning in nursing education revealed supportive findings such as video must be used as an adjunct to didactic teaching; provide nursing students with an alternative option of learning support using video as a learning tool and nurse educators to complement the student learning experience with innovative teachings. Hence, diversity in teaching and learning enhanced the nursing students' knowledge on nursing diagnosis.

In line with this thought, Avelino, Costa, Buchan, Nogueira and Goyata (2017) in their study to evaluate on the International Classification for Nursing Practice (ICNP) revealed that 90.2% of nursing students' preferred animated video than 9.8% of the rest whom prefer written format. In addition, the nursing students' who qualified their knowledge level high were the group received the animated video (Avelino et al., 2017).

Hence, this supports the use of technological resource such as video which points to nursing education for technological innovation in teaching nursing diagnosis.

Although in this 21st century, the innovative teaching strategies from ICT are strongly encouraged in nursing education, there are lecturing still on going in any teaching. Nevertheless didactic teaching which are handled on white board, lately aided with Power Point as the teaching method for nursing subjects. In this study, the lecturing method was used to teach the nursing diagnosis. Although the accuracy scores of DL were lower than the VAL, there was no statistically significant difference between both the teaching methods. This led the researcher to conclude that the DL was just as effective as the VAL to formulate nursing diagnosis of the medical scenario.

As explained earlier the medical scenario must have been easier for the nursing students to identify patients' problems as to formulate the nursing diagnosis which suits their patients. In contrast, Johnson and Mighten (2005) study on comparative teaching between lecture notes combined with structured group discussion versus lecture only for medical-surgical nursing diagnosis found that examination scores of students receive lecture notes combined with structured group discussion were significantly higher than those receive lecture only. Meanwhile, in contrast in the current study found that the results at two weeks later for accuracy of nursing diagnosis for medical scenario within VAL and DL revealed no statistically significant difference.

5.3.2 Research Question 2: What is the difference within VAL and DL on accuracy of nursing diagnosis formulation for medical scenario among nursing students?

The difference within VAL and DL on accuracy of nursing diagnosis formulation for medical scenario among nursing students was conducted to see any changes within the group. In order to examine the first hypothesis (H_{01b}), “There is no significant difference in accuracy of nursing diagnosis scores among nursing students within VAL and DL for medical scenario” the Wilcoxon Paired Signed-Ranks test was conducted to describe the findings of the study. In this study the nursing students’ ability to formulate accurate nursing diagnosis within VAL and DL for the medical scenario did not show any statistically significant score. Moreover, the effect size for both VAL and DL were small effect size thus no differences between both teaching methods.

The possible explanation for these results would be the medical scenario itself which was much simple and easy to both groups of nursing students. The nursing students with VAL apparently had obtained good scores in Post Test 1 and Post Test 2, thus this might have influence the scores. Similarly, the nursing students with DL also had obtained good scores in Post Test 1 and Post Test 2, thus this might have influence the scores. The effect size of their performances in both groups would have revealed these results.

5.3.3 Research Question 3: What is the difference between VAL and DL on accuracy of nursing diagnosis formulation for surgical scenario among nursing students?

In order to examine the second hypothesis (H₀2a) “There is no statistically significant difference in accuracy of nursing diagnosis scores among nursing students between VAL and DL for surgical scenario” the Mann Whitney test was conducted to describe the findings of the study. In this study the nursing students’ ability to formulate accurate nursing diagnosis with VAL for the surgical scenario showed higher scores for Post Test 1 and Post Test 2 as compared to both DL scores. However, there was a statistically significant difference in accuracy of nursing diagnosis between VAL and DL for surgical scenario for the Post Test 1. But there was no statistically significant difference in accuracy of nursing diagnosis between VAL and DL for surgical scenario in Post Test 2. Moreover, the effect size for both VAL and DL were small effect size (0.19) thus no differences between VAL and DL scores at two weeks later.

Again this results may be explained according to Dale’s Cone of learning (1969) as in Figure 5.1, which shows the ways one can retain information for which the deeper the learning and the better the recall. Retention of knowledge better with audio visual aids. But what is interesting in this research was the significant difference for Post Test 1 whereby VAL has $p < .001$. The surgical scenario patient had motor vehicle accident and bed ridden with multiple invasive procedures on going to him. Since, the nursing students were in first semester, they have not been exposed to real clinical environment. But in the video, nursing

students were able to see the patients' source of oxygenation via tracheostomy tube, continuous bladder drainage, intravenous infusion and nasogastric tube for feeding. These visuals perhaps enables students to use clinical reasoning to formulate nursing diagnosis. They can see the condition and the invasive procedures for the patient which further enhance their imagination for sound clinical reasoning to formulate nursing diagnosis.

However, for the DL, description of the patient in surgical scenario was basically via PowerPoint and hand out scenario forms in written format. Since the nursing students in DL were in first semester, they have not been exposed to real clinical environment hence could not imagine and visualize the situation of the patient. They have to read and analyse the patients' condition from scenario as hand out. Thus, their ability to formulate accurate nursing diagnosis achieved lower scores than the VAL group. A possible explanation for this situation was the absence of visual technology via DL that could not help them to imagine the patients' scenario. Unlike the VAL nursing students have the exposure to real patient scenario via video which guide them to have some idea about the surgical case.

Similarly, Aljezawi and Albashtawy (2015) in their comparison study between quiz game format and the didactic lecture format (PowerPoint assisted lecture) among nursing students found that students in the quiz group scored significantly better even after 10 weeks retention than those in the DL group. In contrast, in the current study found that the results of paired test at Post Test 2 for accuracy of nursing diagnosis for surgical scenario within VAL and DL showed statistically significant differences. These findings imply that

whatever methods are being utilised for teaching, the determination of knowledge retention depends upon students' capabilities.

5.3.4 Research Question 4: What is the difference within VAL and DL on accuracy of nursing diagnosis formulation for surgical scenario among nursing students?

The difference within VAL and DL on accuracy of nursing diagnosis formulation for surgical scenario among nursing students was conducted to see any changes within the group. In order to examine the second hypothesis (H_{02b}), "There is no statistically significant difference in accuracy of nursing diagnosis scores among nursing students within VAL and DL for surgical scenario" the Wilcoxon Paired Signed-Ranks test was conducted to describe the findings of the study. In this study the nursing students' ability to formulate accurate nursing diagnosis within VAL and DL for the surgical scenario did show statistically significant scores.

The possible explanation for these results would be the surgical scenario itself which was delivered via VAL enable this group of nursing students to grasp sound knowledge to formulate the nursing diagnosis. The effect of audio visual of the surgical scenario aide those to hear, see and enhance their ability to formulate the nursing diagnoses. Surprisingly the nursing students with DL also had obtained good scores within their Post Test 1 and Post Test 2. Thus, this revealed that whatever method of delivery of knowledge it depends totally on the end user capabilities. Therefore, the DL nursing students despite

lack of audio visual for their scenarios they managed to gain and retain knowledge to formulate better nursing diagnoses two weeks later. However, lacks other similar studies to support this present study findings.

5.3.5 Research Question 5: What is the difference between VAL and DL to satisfaction on accuracy of nursing diagnosis formulation among nursing students?

In this study in order to test the third hypothesis “There is no significant difference in satisfaction scores of nursing students between VAL and DL” the independent t test was conducted to describe the findings of the study. The satisfaction scores of nursing students with VAL and DL did not show any statistically significant differences between them in this study. Hence, it can be concluded that both methods of teaching nursing diagnosis are relevant to aid in the teaching and learning of the nursing students.

Satisfaction in this study refers to the method of teaching precisely. Either methods of VAL or DL teaching can contribute to nursing students’ satisfaction. Currently, simulation as part of technological advances are being widely used within nursing curricula. However, in this study it did not support nursing students’ satisfaction to VAL as a better method of learning than DL. In this regard, Du et al. (2013) systematic review on web-based distance learning for the nurse education revealed nine studies in which all the participants’ responses were high satisfaction to this technology. Celikkan, Senuzun,

Sari and Sahin (2013) also found that nursing students in their experimental group for videoconference based lecture indicated overwhelming satisfaction even in their post test.

In the similar vein, Gagnon, Gagnon, Desmartis and Njoya (2013) found that one of the factors to exhibit satisfaction to the methods of teaching and learning was motivation. In their study students who were more motivated had shown greater satisfaction to the methods of learning. This was in agreement with Lee, Chae, Kim, Lee and Min (2016) which stated that the experimental group students in their study found themselves to be motivated with video support and confident during implementations.

Apparently Sowan and Idhail (2014) reported gender was a predictor that affected to a significant degree the satisfaction from the interactive web-based nursing course with video. The satisfaction of females was higher compared to males. In contrast in the current study, although 65 of the nursing students were females and one male, there was no satisfaction differences in both VAL and DL. To the author's mind it could happen because the nursing students being in their first semester as novice enabled them from being exposed to different simulation at the time of the study was conducted.

Bahar (2015) revealed the satisfaction of the experimental group which used video-supported web-based learning for fundamental nursing skills reported high satisfaction to this method. Similarly, Lee et al. (2016) and Pinar, Akalin and Abay (2016), both studies reported the nursing students expressed satisfaction related to the use of video-based learning. Moreover Kam, Ainsworth, Handmer, Johnson and Winter (2016) pointed out the

portable video media versus standard verbal communication in surgical information delivery for nurses showed an increased in satisfaction scores for the portable video media.

Johnston, Parker and Fox (2017) also found that impact of audio visual for intervention group was rated high satisfaction scores in terms of value, realistic and transferable to practice. They suggested that audio visual simulation recreated a real-life situation which subsequently prepared nursing students to perform in their clinical practice confidently. This supports the learner satisfaction is enhanced by the use of simulation as a teaching tool (Wirhana et al., 2017; Zerr & Pulcher, 2008; Forbes et al., 2016).

A recent study by Arslan, Ozden, Goktuna and Ayik (2018) concluded that video-based education is an ideal form for the education of nursing students. In their study it was proven that the combination of two education models such as video and traditional was extremely effective on the satisfaction of nursing students. Nonetheless, in their study watching the video before the professional skill lab activity increased the satisfaction of the nursing students compared to those who were exposed to the professional skill lab activity and later to watch video.

Silva and Oliveira-Kumakura (2018) reported the experience of constructing and applying clinical simulation scenarios for the evaluation and treatment of wounds. The factor which determined the satisfaction of students with the activity was reflections on the debriefing were important for the teaching-learning process. This supported DiGiacomo (2017) results which compared simulation and traditional lab settings in that the

undergraduate nursing students who received the simulation were more satisfied than those that did not receive the simulation.

5.3.6 Research Question 6: What is the difference between VAL and DL to self-confidence on accuracy of nursing diagnosis formulation among nursing students?

In this study in order to test the fourth hypothesis “There will be no significant difference in self-confidence scores of nursing students between VAL and DL” the independent t test was conducted to describe the findings of the study. Self-confidence scores of nursing students with VAL and DL did not show any significant differences between them in this study. Similarly Smith and Roehrs (2009) contend self-confidence of nursing students with simulation experience and those without simulation experience did not differ. The outcome of nursing students’ self-confidence imply that appropriate design simulation must be planned to enhance nursing students’ simulation experiences.

Similarly, a comparison study by Brannan et al. (2008) using traditional classroom lecture and the simulation method was conducted to test the differences in cognitive skills and confidence gains between two groups of junior nursing students learning about acute myocardial infarction. There was no significant outcome differences in the nursing students’ confidence between the two groups. But the simulation group had higher levels of cognitive skills in nursing care of a patient with acute myocardial infraction compared with the traditional group.

Gordon and Buckley (2009) used simulation in teaching acute patient care for nurses reported their confidence had all increased after simulation. For instance, in recognizing an unstable patient, initiating interventions to correct airway obstruction and altered circulation, and keeping others informed during an emergency. Wagner, Bear and Sander (2009) reported clinical simulation provided an opportunity for senior nursing students to build confidence in their discharge teaching skills with post-partum mothers and their families.

According to Lubbers and Rossman (2017) self-confidence measures can be useful to assess student learning during simulation experiences. In this study the possibility is that the nursing students both from VAL and DL acquired adequate knowledge, information and guidance to build their self-confidence to utilise during the process of this study. The initial stage to build self-confidence in novice nursing students are very important as preparatory to their clinical postings. This is because when nursing students are able to formulate accurate nursing diagnosis, it builds their confidence level to plan proper nursing care plan for their patients.

Jeffries (2005), Bambini et al. (2009) and Hayden, Gross and Smiley (2014) found nursing students who followed simulation experiences showed increase in self-confidence in clinical practice areas. Nursing students felt better prepared to face similar situation when encountered in clinical sites. Hence, this indicates that nursing students' self-efficacy is influenced by their self-confidence which is acquired in their learning experiences. Further strong self-confidence can be applied to improve their nursing care in clinical

practice. Lubbers and Rossman (2017) pointed out that increased self-confidence with appropriate skills and abilities is expected to increase the quality of nursing care performed by nursing students in real-life clinical situations.

In line with this thought, Chesser-Smyth and Long (2012) found the influences on self-confidence among first-year undergraduate nursing students was factors in clinical practice. The nursing students' self-confidence fluctuated during their first clinical attachment and progressively developed towards academic achievement. Moreover, Samawi, Miller and Haras (2014) study supported an increase in self-confidence was the overall experience gained from simulation scenario and quality of the simulation design. Thus, this finding implied the factor which contributed to student self-confidence significantly was the educational practice. Omer (2016) agreed nursing students build their self-confidence after clinical simulation experiences which enabled them to recognise clinical manifestations of their patients and perform the necessary nursing care as required.

DiGiacomo (2017) results supported the current literature that compares simulation and traditional lab settings in that the undergraduate nursing students who received the simulation were more confident than those that did not receive the simulation. Similarly, a recent study by Brasil et al. (2018) revealed that self-confidence among nursing students in the maternal-child realistic simulation was increased among the group followed simulation design. In 2016, Lacue identified that educators should initiate deliberate practice methods that would be suitable for the learner at their current level of skill development to enhance their self-confidence. In this quantitative method with a

descriptive, non-experimental, comparative design provided information about the effect of a repeated simulated clinical experience on student self-confidence and competence.

5.3.7 Research Question 7: What is the difference between VAL and DL to simulation design on accuracy of nursing diagnosis formulation among nursing students?

In nursing education, the use of simulation as a pedagogy is both to transform student learning and respond to scarcity of clinical sites (Lubbers & Rossman, 2016); enhance satisfaction (Celikkan et al., 2013); self-confidence (Hayden et al., 2014) and (Bambini et al., 2009). In this study in order to test the fifth hypothesis “There will be no significant difference in simulation scores of nursing students between VAL and DL” the independent t test was conducted to describe the findings of the study. Simulation design scores of nursing students with VAL and DL did not show any statistically significant differences between them in this study.

The researcher conclude that the possible explanation for this insignificant result could be the nature of the study. Each group had been exposed to the subject matter by relevant instructional designs such as the VAL and DL respectively. Therefore, each group of this nursing students are contended with their teaching methods. According to Campbell, Gantt and Congdon (2009) video as a simulation presenting tool has been used in three broad categories: as a substitute for live instruction, as an adjunct to other teaching methods, and as a means for providing skills training to healthcare professionals. In this

study the video was used as an adjunct to other teaching methods, which implies that both the teaching methods were effective between the groups.

In this current study, video simulation was created to substitute for live instruction. Since the nursing students were not exposed to the clinical attachment so they have no experiences dealing with real patients. In order for the nursing students to assess and formulate accurate nursing diagnosis, it was important to provide them with a simulation high in visual and real-world fidelity. Hence, the scenarios chosen for the study were medical and surgical scenarios which were real patient scenarios. In the videos both the audio visual information pertaining the patients were realistic to follow by the VAL nursing students. Meanwhile, in the DL group, the information about the patients' cues were detailed implicitly as to ease the nursing students understanding of the scenarios. Campbell and Daley (2013) pointed out that in order to enact a reality-based simulation, initially the simulation must be believable for the students and secondly it can be translated into their practice.

Apparently, in the teaching and learning process, the instruction using simulation is student-centred whereby they must be self-directed and motivated (Jeffries, 2005). At this juncture, Dick, Carey and Carey (2014) in order to motivate learners to the subject matter it was necessary to follow Attention, Relevance, Confidence and Satisfaction (ARCS) Model by Keller (1987). In simulation all these components are crucial for the novice nursing students to attain knowledge on nursing diagnosis which is a prerequisite for subsequently nursing subjects.

The first component is to gain attention of the learners and sustain it subsequently so that they attend to learn and perform it especially using human-interest examples. In this regard the scenarios were real client case studies for both the groups. The second component is relevance which will be difficult to sustain if one perceives it not relevant. The topic on nursing diagnosis is relevant to all first year nursing students and they must attain deep understanding for further application in the other nursing subjects.

The third component is confidence which learners can achieve when they can master the objectives of the instruction. At this juncture the nursing students' capability to formulate accurate nursing diagnosis according to NANDA will enhance their self-confidence. Finally the last component is satisfaction which the learner derives from the learning experiences. Particularly intrinsic satisfaction which can be acquired by mastering new skills and being able to utilise it. In this study the nursing students' satisfaction can be measured from the learning experiences via VAL and DL.

Therefore, simulation as a learning activity in nursing education with scenarios that mimic the reality of the clinical environment encourages nursing students to develop cognitive, psychomotor and affective skills prior to their clinical attachments (Faulcon (2015)). It is much argued that simulation training provides the nursing student with opportunities for active involvement in learning without causing harm to patients in the clinical area. It also enables nursing students to gain new knowledge and build upon previous skills. Most importantly simulation training also provides self-paced learning and

affords nursing students the opportunity to make mistakes and learn from them, which cannot be accomplished in the clinical setting.

Associated with this discourse, Foronda, Siwei and Bauman (2013) stated satisfaction with simulation as a teaching method apparently increased nursing students' confidence level. Similarly Norman (2012) supported simulation was useful in creating a learning environment which contributes to knowledge, skills, safety and confidence in nursing education. In the similar vein, Aebersold, Tschannen and Bathish (2012) concluded virtual simulation enhances nursing students' communication skill and satisfaction in undergraduate nursing program.

Similarly, Yuan, Williams and Fang (2011) found that using simulation in nursing education can engaged them to active learning process which further enhance their confidence and competence. This was due to the fact whereby simulation based learning provided a safety environment for them to incorporate cognitive, psychomotor and affective skill acquisition. In their study it implied that a nurse educator must acquire the knowledge and skills to develop realistic case scenarios as simulation to enhance the required knowledge and skill to formulate accurate nursing diagnoses. Apparently, in this study, the researcher had utilised two different methods of simulation for the nursing students in their teaching learning process. But both simulation methods seemed to show no differences in their satisfaction, self-confidence and simulation design preference.

Meyers et al. (2011) reported the effect of simulation on clinical performance which revealed their nursing students had improvements in scores at weeks 5 and 6. This concluded that their nursing students with simulation exposure acclimated more quickly to the clinical unit and were able to achieve the performance expectations more quickly. This findings supported that Dale's Cone of Experience which stated the retention of memory with simulation was at least two weeks. In comparison the researcher also found an increased in the scores after two weeks of VAL and DL to the nursing students. Thus this study demonstrated improvement in clinical performance as a result of a simulated learning experience even beyond two weeks.

Implementation of simulation in nursing program received positive feedback from the students in terms of attaining valuable experiences and allowing simulation offered them a safe environment for improving their competence (Garrett, MacPhee & Jackson, 2010). In the similar vein, study by Howard, Englert, Kameg and Perozzi (2011) found that the use of simulation was beneficial to the achievement of learning objectives and their students responses related to the experience were overwhelmingly positive. Hence, simulation engagement in nursing education is worthy for the benefits of students.

5.4 Implications

5.4.1 Nursing Education

The educators in the nursing academia play an important role in producing knowledgeable, safe and competent nursing students. Nursing curriculum has been always adapting to the changes in the health care system and clients' demographic changes. A pertinent point to consider during the first semester of new nursing students in nursing

schools is their ability to strong grasp of nursing foundation subjects. This is crucial for their subsequent subjects because the nursing foundation subjects are the prerequisites for the other subjects on medical-surgical nursing. Hence, the nursing process is one of the core subject to be included in the first semester, and the topic on nursing diagnosis needs more focus as it is the basis for the nursing care plan of the patients.

According to Cavalcante, Botelho, Cavalcanti and Garcia (2016) stated the nursing students' ability to identify and formulate the nursing diagnosis often showed different nursing diagnosis being related. Thus they proposed more investigations and discussions to identify the teaching methods best suited to teach the nursing diagnosis. In line with this thought, more simulation can be included in teaching the nursing diagnosis. More videos of real clients can further assist the nursing students to understand the patients' situation, even though if they were not exposed to clinical areas yet.

5.4.2 Nursing Research

The current study provides some statistical evidence that the VAL method can be used to teach nursing students to identify and formulate accurate nursing diagnosis. The exposure to the video simulation of the patients in the scenario enables nursing students to visualise and capture pertinent clinical manifestations to formulate their nursing diagnosis formulation. These nursing students (the pioneer cohort) using VAL and DL should be tested at later time frames to determine whether improvements in accuracy of nursing diagnosis are sustained following their subsequent years in nursing. Moreover, this study should be replicated in other nursing schools in this country for comparing research findings.

5.4.3 Nursing Practice

Clinical areas are excellent place for nursing students to gain experiential learning. However, currently, learning that takes place in the clinical setting is limited by the patients who are in the hospital. Knowledge learned in classroom must be transferred to clinical practice. Therefore, competencies of nursing diagnosis knowledge application at clinical areas must be synchronised with what is being taught in nursing education. Although nursing students may learn about a disease process but never have the opportunity to provide nursing care to patients with that condition. Lack of application may limit the nursing student's ability to learn and develop the necessary skills to be a safe practitioner

The creation of simulation scenarios for any disease process can provide an opportunity to present nursing students with the experience. As a result, simulation training can provide standardized learning experiences to all nursing students by enabling active experience. Hence, retention of knowledge on nursing diagnosis can be sustained during their clinical attachments. Further it also can being enhanced with continuous nursing faculty presence at the clinical areas. This is to ensure the nursing students and nurses in clinical areas are capable of formulating accurate nursing diagnosis. Thus, they can contribute to proper nursing care during their clinical attachment.

5.5 Limitations of the Study

In this study, the researcher recognized that there were some limitations. The first limitation of this study was the NLN 2005 questionnaire measurement which was only measured at the end of the study. Thus the researcher was unable to measure the between Post Test 1 and Post Test 2 comparison for satisfaction, self-confidence and simulation design of the study. It was not measured after Post Test 1 because it was not planned by the researcher. In addition the idea of measuring at this time was too early for the nursing students to answer the questionnaire. This was because they were not exposed to this subject earlier on.

The second limitation was the study's small sample size which impacts the power of the study (33 participants in each group). This was unpredictable because the previous intake for the diploma nursing students was around 50 - 100 candidates per intake but for the current semester intake was dropped to 34 candidates. Thus, to randomize the sample into two groups as control and intervention was not feasible because a sample of 17 in each group does not meet the mid theorem theory. Apparently, the undergraduate candidates per intake was dropped to 32 candidates for the current semester intake as compared to previous years at 40-42 candidates. Therefore, in both groups of nursing students there were 33 participants in each intervention and control groups of the study.

The third limitation was the location of the study which was conducted only in one nursing program. Hence, a possible contamination may have occurred since both the

diploma and undergraduate nursing students studied in the same nursing program and same School of Health Sciences.

5.6 Directions for Future Research

Further experimental studies need to be conducted with other nursing schools or programs using VAL and DL to formulate accurate nursing diagnosis. The findings from that study can add rigor to the pedagogy of teaching in nursing education. Furthermore, this sort of experimental study should be replicated with a larger sample size in both undergraduate and diploma nursing students. Moreover, it can be replicated in multiple sites and more diverse student population in terms of gender and race.

A follow up of the nursing students during their clinical postings to determine their retention of knowledge via simulation on accurate formulation of nursing diagnosis. The information from this type of study can evaluate whether simulation helps nursing students ability to formulate accurate nursing diagnoses. Apparently, a qualitative exploration of the nursing students' reactions and experiences to video assisted lecture on nursing diagnosis should be explored. Themes derived from the qualitative research can enriched the research further.

5.7 Findings and Its Relationship to Conceptual Framework

The Kolb's ELT 1984 and the Kirkpatrick Model were applied in this study to determine the differential effects of VAL and DL on the accuracy of nursing diagnosis formulation as well as satisfaction, self-confidence and simulation design during training of the nursing students. The definition of *experiential learning* is a "process whereby knowledge is created through the transformation of an experience" (Kolb, 1984, p. 38). Kolb further stated that the learner initiates the action of learning through experience by assigning meaning to the experience. The Kolb's ELT 1984 was selected to describe the interaction between the four domains.

This theory proposed high inter-relation between VAL and DL, satisfaction, self-confidence and formulation of accurate nursing diagnosis. Simulation training allows the active participation of students in their learning by physically conducting the clinical techniques they learn about in the classroom. Nursing students are expected to provide safe and competent care throughout their education, as well as when they enter the nursing profession as licensed registered nurses. Nursing students must be able to apply the knowledge they have gained through didactic learning to become safe and competent practitioners. One way this can be achieved is with experiential learning strategies through the use of simulation training.

In the first domain to establish a concrete experience whereby the learner has an actual experience, a new style of teaching was introduced to the subject on nursing diagnosis. This stage incorporates a student having an experience through doing and

feeling. The new experience was VAL to identify and formulate accurate nursing diagnosis from the video scenarios. The simulation scenario provides concrete experience for a nursing student. Both the medical and surgical simulation scenarios conducted at the lecture providing nursing students an opportunity to identify the accurate nursing diagnoses. In addition, to identifying the correct nursing diagnoses, nursing students also used psychomotor and cognitive skills to provide appropriate nursing interventions.

The reflective observation in the second domain when the nursing student reflects back and develops meaning from the experience. This required nursing students to think critically to identify accurate nursing diagnosis for the medical and surgical scenarios. Hence, nursing students were satisfied with the new learning approach, which developed the third domain of abstract conceptualization when the nursing students' understands the meaning and different applications to new information that earns them to formulate nursing diagnosis. Finally, in the last domain which is active experimentation when the nursing students' puts to test the newly learned information, the nursing students were able to apply the concrete understanding and self-confidence to formulate accurate nursing diagnosis in any circumstances.

Learning occurs when a connection is made from new knowledge to past experiences. Kolb (1984) stated that learning is ongoing, and the creation of understanding occurs when learners transform the experience, changing the way in which they think and behave. Experiential learning theory begins with the learner having an experience and ends with the learner applying the newly learned information. According to Kolb (1984)

simulation, as an educational learning technology, was aligned with Kolb's cyclical experiential learning theory model by requiring the student to be an active participant in a simulated scenario, reflect back on the simulated experience, think about strengths and weaknesses recognized during the experience, and plan for future experiences.

When the researcher implemented the VAL simulation, this learning strategy aligned with Kolb's cyclical experiential learning theory by incorporating the abstract conceptualization (Post Test 1/Post Test 2), requiring the nursing student to be an active participant in the simulation scenario (medical and surgical scenarios) and reflecting back on the simulated experience, thinking about strengths and weaknesses recognized during the experience, and planning for future experiences. Kolb's Experiential Learning Theory (1984) advocates an education program which promotes the development of all types of learners by providing experiences in a variety of learning environments, including a simulation lab setting. Results of this study confirm the need to provide diverse learning experiences in a variety of learning environments.

Whereas, the Kirkpatrick Model is the worldwide standard for evaluating the effectiveness of any type of formal or informal training across four levels (Gjeraa, Moller & Ostergaard, 2014). Hence, Kirkpatrick's four levels conceptual framework was appropriate framework which guided this educational study: Level 1, Reaction (participants' satisfaction), Level 2, Learning (knowledge, skills, and attitude), Level 3, Behaviour (translation of learning to clinical setting) and Level 4, Results (Benefit for the patient), (Kirkpatrick & Kirkpatrick, 2009).

In the reaction level, participants' thoughts about the training experience in each group of the two different methods of teaching on accuracy of nursing diagnosis, a subject crucial for nursing profession can be identified. Obviously, it was important to measure the satisfaction, self-confidence and simulation learning design because it helps the researcher to understand how well the training was received by the nursing students. In this study although there were differences in accuracy of nursing diagnosis scores between the VAL and DL, but there were no statically significant differences between the groups. Similarly, there were differences between the VAL and DL on satisfaction, self-confidence and simulation design scores, but there were no statically significant differences between the groups.

Learning in the level 2 showed an increase in knowledge and skills on accuracy of nursing diagnosis formulation. The student's learning from the training experience of two different methods of teaching increased in knowledge. Hence, at this level, the students' knowledge further determined the depth and quantity of their knowledge being increased as a result of the teaching with VAL and DL. It was important to measure this, because knowing what the students had learnt and what they had not will help to improve future teaching. When students are satisfied with the learning method, they tend to build self-confidence on their simulation design to formulate correct nursing diagnosis (Rizolo, 2015).

The student's behavioural change that show the transfer of knowledge, skills, and/or attitudes from classroom to the job. This change can be evaluated whether nursing students have changed their behaviour, based on the training they received from VAL and DL. This was determined by testing the nursing students' accuracy of nursing diagnosis scores from the Post Test 1 and Post Test 2 (2 weeks later) evaluation. Therefore, it can be assumed that the nursing students have learned something and the teaching was effective.

The final results that occurred because of attendance and participation in a teaching program as a performance based. This meant the results of the student's performances had gained on the subject matter which was on nursing diagnosis. At this level, the Post Test 1 and Post Test 2 scores on nursing diagnosis can analyse the final results of their training. This include the outcomes which was the teaching methods used in this study have determined to be good for study, good for the students, or good for the subject matter.

The researcher found that the four Kirkpatrick levels of evaluation for educational training support this study. Level 1, Reaction is the reaction of nursing students to the VAL and DL. While Level 2, Learning which occurred during lectures of nursing process and nursing diagnosis with VAL and DL. In Level 3, Behaviour which is the accuracy of nursing diagnosis for the medical and surgical scenarios. Finally, at the Level 4, results can be evaluated in the accuracy of nursing diagnosis for the medical and surgical scenarios as well as their satisfaction, self-confidence and simulation design after two weeks.

Therefore the two theories guided in this study embedded the findings and the relationship as in Figure 5.2.

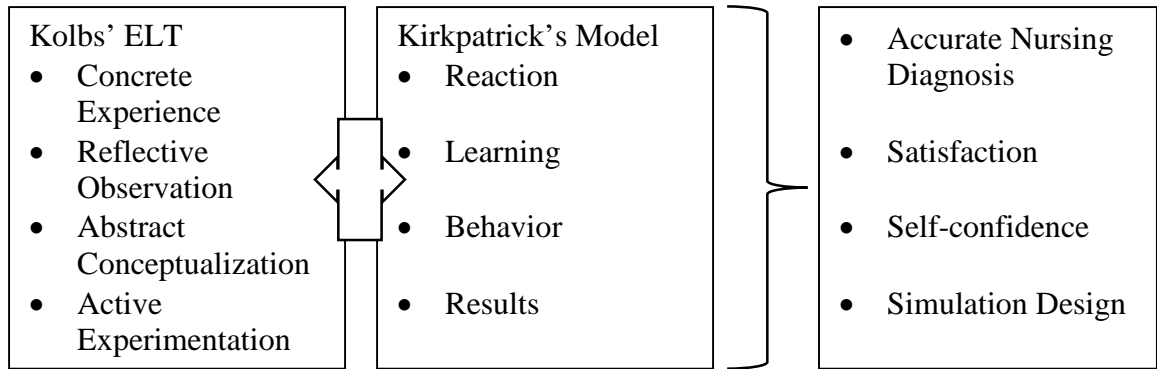


Figure 5.2. Conceptual Framework of the Study

5.8 Summary

In conducting this experimental study revealed that VAL may be an important addition to the successful delivery of teaching method to formulate accurate nursing diagnosis. Hence, in this study the accuracy of nursing diagnosis for medical and surgical with VAL was higher than DL. The study only showed significant difference for Post Test 1 for surgical scenario ($p < .001$). The difference within VAL for surgical scenario showed a significant difference ($p < .001$). Similarly, the difference within DL for surgical scenario showed a significant difference ($p < .001$). Thus, these findings conclude that both the VAL and DL are apparently effective for teaching the subject on nursing diagnosis. On the other hand in this study also revealed that the nursing students' satisfaction, self-confidence and simulation design scores with VAL and DL did not show any significant differences between them. In a nutshell, this research supports simulation training in enhancing learning in nursing academia. Moreover, the nursing students need to feel safe while they are learning to gain the most from their experience in the initial stage.

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NANDA-I TAXONOMY 2015-2017 LIST

2015-2017

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**NURSING
DIAGNOSES**

NANDA International



DEFINING THE
KNOWLEDGE OF NURSING

Definitions and Classification

NANDA nursing diagnosis list 2015-2017

NANDA stands for North American Nursing Diagnosis Association. This organization was founded in 1982 for the purpose of standardizing the nursing terminology. The organization develops, researches, disseminates and refines the nomenclature criteria, and taxonomy of nursing diagnoses. This article contains the complete **NANDA nursing diagnosis** list 2015-2017. This list is an update the oldest **NANDA nursing diagnosis** list 2012-2014. This last edition of **NANDA nursing diagnosis** contains 235 nursing diagnoses where 26 of them are newly introduced, and 16 are revised diagnoses. See attached forms.

Domain 1: HEALTH PROMOTION

Class 1. Health awareness

- Deficient diversional activity
- Sedentary lifestyle

Class 2. Health management

- Frail elderly syndrome
- Risk for frail elderly syndrome
- Deficient community
- Risk-prone health behavior
- Ineffective health maintenance
- Ineffective health management
- Readiness for enhanced health management
- Ineffective family health management
- Noncompliance
- Ineffective protection

Domain 2: NUTRITION

Class 1. Ingestion

- Insufficient breast milk
- Ineffective breastfeeding
- Interrupted breastfeeding
- Readiness for enhanced breastfeeding
- Ineffective infant feeding pattern
- Imbalanced nutrition: less than body requirements
- Readiness for enhanced nutrition
- Obesity
- Overweight
- Risk for overweight
- Impaired swallowing

Class 2. Digestion

None at present time

Class 3. Absorption

None at present time

Class 4. Metabolism

- Risk for unstable blood glucose level
- Neonatal jaundice
- Risk for neonatal jaundice
- Risk for impaired liver function

Class 5. Hydration

- Risk for electrolyte imbalance
- Readiness for enhanced fluid balance
- Deficient fluid volume
- Risk for deficient fluid volume
- Excess fluid volume
- Risk for imbalanced fluid volume

Domain 3: ELIMINATION AND EXCHANGE**Class 1. Urinary function**

- Impaired urinary elimination
- Readiness for enhanced urinary elimination
- Functional urinary incontinence
- Overflow urinary incontinence
- Reflex urinary incontinence
- Stress urinary incontinence
- Urge urinary incontinence
- Risk for urge urinary incontinence
- Urinary retention

Class 2. Gastrointestinal function

- Constipation
- Risk for constipation
- Chronic functional constipation
- Risk for chronic functional constipation
- Perceived constipation
- Diarrhea
- Dysfunctional gastrointestinal motility
- Risk for dysfunctional gastrointestinal motility
- Bowel incontinence

Class 3. Integumentary function

None at this time

Class 4. Respiratory function

- Impaired gas exchange

Domain 4: ACTIVITY/REST

Class 1. Sleep/rest

- Insomnia
- Sleep deprivation
- Readiness for enhanced sleep
- Disturbed sleep pattern

Class 2. Activity/exercise

- Risk for disuse syndrome
- Impaired bed mobility
- Impaired physical mobility
- Impaired wheelchair mobility
- Impaired sitting
- Impaired standing
- Impaired transfer ability
- Impaired walking

Class 3. Energy balance

- Fatigue
- Wandering

Class 4. Cardiovascular/pulmonary responses

- Activity intolerance
- Risk for activity intolerance
- Ineffective breathing pattern
- Decreased cardiac output
- Risk for decreased cardiac output
- Risk for impaired cardiovascular function
- Risk for ineffective gastrointestinal perfusion
- Risk for ineffective renal perfusion
- Impaired spontaneous ventilation
- Risk for decreased cardiac tissue perfusion
- Risk for ineffective cerebral tissue perfusion
- Ineffective peripheral tissue perfusion
- Risk for ineffective peripheral tissue perfusion
- Dysfunctional ventilatory weaning response

Class 5. Self-care

- Impaired home maintenance
- Bathing self-care deficit
- Dressing self-care deficit
- Feeding self-care deficit
- Toileting self-care deficit
- Readiness for enhanced self-care
- Self-neglect

Domain 5: PERCEPTION/COGNITION

Class 1. Attention

- Unilateral neglect

Class 2. Orientation

None at this time

Class 3. Sensation/perception

None at this time

Class 4. Cognition

- Acute confusion
- Risk for acute confusion
- Chronic confusion
- Labile emotional control
- Ineffective impulse control
- Deficient knowledge
- Readiness for enhanced knowledge
- Impaired memory

Class 5. Communication

- Readiness for enhanced communication
- Impaired verbal communication

Domain 6: SELF-PERCEPTION

Class 1. Self-concept

- Readiness for enhanced hope
- Hopelessness
- Risk for compromised human dignity
- Disturbed personal identity
- Risk for disturbed personal identity
- Readiness for enhanced self-concept

Class 2. Self-esteem

- Chronic low self-esteem
- Risk for chronic low self-esteem
- Situational low self-esteem
- Risk for situational low self-esteem

Class 3. Body image

- Disturbed body image

Domain 7: ROLE RELATIONSHIPS

Class 1. Caregiving roles

- Caregiver role strain
- Risk for caregiver role strain
- Impaired parenting
- Readiness for enhanced parenting
- Risk for impaired parenting

Class 2. Family relationships

- Risk for impaired attachment
- Dysfunctional family processes
- Interrupted family processes
- Readiness for enhanced family processes

Class 3. Role performance

- Ineffective relationship
- Readiness for enhanced relationship
- Risk for ineffective relationship
- Parental role conflict
- Ineffective role performance
- Impaired social interaction

Domain 8: SEXUALITY

Class 1. Sexual identity

None at present time

Class 2. Sexual function

- Sexual dysfunction
- Ineffective sexuality pattern

Class 3. Reproduction

- Ineffective childbearing process
- Readiness for enhanced childbearing process
- Risk for ineffective childbearing process
- Risk for disturbed maternal–fetal dyad

Domain 9: COPING/STRESS TOLERANCE

Class 1. Post-trauma responses Post-trauma syndrome

- Risk for post-trauma syndrome
- Rape-trauma syndrome
- Relocation stress syndrome
- Risk for relocation stress syndrome

Class 2. Coping responses

- Ineffective activity planning
- Risk for ineffective activity planning
- Anxiety
- Defensive coping
- Ineffective coping
- Readiness for enhanced coping
- Ineffective community coping
- Readiness for enhanced community coping
- Compromised family coping
- Disabled family coping
- Readiness for enhanced family coping
- Death anxiety
- Ineffective denial
- Fear
- Grieving
- Complicated grieving
- Risk for complicated grieving
- Impaired mood regulation
- Readiness for enhanced power
- Powerlessness
- Risk for powerlessness
- Impaired resilience
- Readiness for enhanced resilience
- Risk for impaired resilience
- Chronic sorrow
- Stress overload

Class 3. Neurobehavioral stress

- Decreased intracranial adaptive capacity
- Autonomic dysreflexia
- Risk for autonomic dysreflexia
- Disorganized infant behavior
- Readiness for enhanced organized infant behavior
- Risk for disorganized infant behavior

Domain 10: LIFE PRINCIPLES**Class 1. Values**

None at this time

Class 2. Beliefs

- Readiness for enhanced spiritual well-being

Class 3. Value/belief/action congruence

- Readiness for enhanced decision-making
- Decisional conflict
- Impaired emancipated decision-making
- Readiness for enhanced emancipated
- Decision-making
- Risk for impaired emancipated decision-making
- Moral distress
- Impaired religiosity
- Readiness for enhanced religiosity
- Risk for impaired religiosity
- Spiritual distress
- Risk for spiritual distress

Domain 11: SAFETY/PROTECTION**Class 1. Infection**

- Risk for infection

Class 2. Physical injury

- Ineffective airway clearance
- Risk for aspiration
- Risk for bleeding
- Risk for dry eye
- Risk for falls
- Risk for injury
- Risk for corneal injury
- Risk for perioperative positioning injury
- Risk for thermal injury
- Risk for urinary tract injury
- Impaired dentition
- Impaired oral mucous membrane
- Risk for impaired oral mucous membrane
- Risk for peripheral neurovascular dysfunction
- Risk for pressure ulcer
- Risk for shock
- Impaired skin integrity
- Risk for impaired skin integrity
- Risk for sudden infant death syndrome
- Risk for suffocation
- Risk for delayed surgical recovery
- Impaired tissue integrity
- Risk for impaired tissue integrity
- Risk for trauma
- Risk for vascular trauma

Class 3. Violence

- Risk for other-directed violence
- Risk for self-directed violence
- Self-mutilation
- Risk for self-mutilation
- Risk for suicide

Class 4. Environmental hazards

- Contamination
- Risk for contamination
- Risk for poisoning

Class 5. Defensive processes

- Risk for adverse reaction to iodinated contrast media
- Risk for allergy response
- Latex allergy response
- Risk for latex allergy response

Class 6. Thermoregulation

- Risk for imbalanced body temperature
- Hyperthermia
- Hypothermia
- Risk for hypothermia
- Risk for perioperative hypothermia
- Ineffective thermoregulation

Domain 12: COMFORT**Class 1. Physical comfort**

- Impaired comfort
- Readiness for enhanced comfort
- Nausea
- Acute pain
- Chronic pain
- Labor pain
- Chronic pain syndrome

Class 2. Environmental comfort

- Impaired comfort
- Readiness for enhanced comfort

Class 3. Social comfort

- Impaired comfort
- Readiness for enhanced comfort
- Risk for loneliness
- Social isolation

Domain 13: GROWTH/DEVELOPMENT

Class 1. Growth

Risk for disproportionate growth

Class 2. Development

Risk for delayed development

Nursing Diagnoses accepted for Development and Clinical Validation 2015–2017

Disturbed energy field

MEDICAL AND SURGICAL VIDEOS (CD)

MEDICAL AND SURGICAL SCENARIOS (HANDOUTS)

There are two scenarios: one is medical condition (asthma) and another one is surgical condition (fracture of cervical 3-4).

Please kindly identify at five (5) nursing diagnoses (4 actual and 1 potential) relevant to Mr. Jelan and Mr. Semandun using PES NANDA-I format.

Example: Problem r/t etiology aeb s/symptoms.

Scenario 1 (Asthma): Mr. Jelan

Mr. Jelan is 15 years old teenager has been admitted to A&E unit with a complaint of difficulty in breathing. He was accompanied by his mother who looked anxious and worried over her son's condition. On admission, Mr. Jelan is alert and conscious but in shortness of breath. From his general assessment he looked cyanosed.

The following are his vital signs:

RR= 26 bpm, HR= 156 bpm, BP= 112/88 mmHg and Body Temperature= 36.5° C.

Scenario 2 (MVA with fracture of C3 and C4): Mr. Semandun

Mr. Semandun is 65 years old man has been admitted to surgical ICU for postoperative management. He was knocked by a motorcar while crossing the road. He had abrasion on both legs and fracture to his cervical spine C3 and C4. He could not move his lower limbs. From his general assessment, he is conscious and alert. He has tracheostomy mask with 4l/min oxygen; nasogastric tube feeding 4 hourly; intravenous fluid normal saline 0.9% for maintenance regime and on continuous bladder drainage (CBD) free flow.

The following are his vital signs:

RR=20 bpm; HR=118 bpm; B/P= 120/83 mmHg and Body Temperature=36.5° C.

DGN113/4: Basic Nursing Skill (Activities Daily Living): Course Information**SCHOOL OF HEALTH SCIENCES****TEACHING AND LEARNING PLAN****SEMESTER 1
ACADEMIC SESSION 2017/2018**

A. COURSE DETAIL	
Course Code	: DGN 113
Credit Unit	: 4
Course Title	: BASIC NURSING SKILLS (ADL)
Day/Time	: Monday (1400-1600); Tuesday (1400-1600) Thursday (0900-1000) &(1400-1600)
Venue	: DK 6 & Nursing Skill Lab 1
Course Coordinator	: Pn. Norliza Husin
Lecturer	: Pn. Jayah K. Pubalan
Number of students	: 34
Aim	: As a core course to students in diploma program.
B. COURSE OUTCOMES	
CO1	Explain the role of nurses, nursing practices, mapping concept and basic human needs.
CO2	Demonstrate activities of daily living procedure skill for patients
CO3	Relate basic human needs concept to fulfill holistic care in activities of daily living.
CO4	Communicate effectively with the patient and family while doing health assessment using nursing process
C. COURSE SYNOPSIS	
This course introduces the history and the development of nursing profession in Malaysia and at the international level, health care system in Malaysia and	

alternative insurance delivery systems. It will focus on the nursing problem solving process based on the nursing process. Students are exposed with activity human daily life include human needs as breathing, eat and drink, sleep and rest, safe environment, mobilization, personal hygiene and elimination, communication, belief base basic need Virginia Henderson. Students will practice the skills taught in the nursing laboratory and implement the skills in clinical area. Student also exposed to nursing process related to assessment, nursing diagnosis, planning, intervention and evaluations.

D. COURSE SYLLIBUS

Understand the Nursing Process

Specific Outcomes:

1. Define the nursing process
2. Identify the phases of nursing process
3. Explain the major characteristics of the nursing process
4. Identify activity in each phase of nursing process
5. Appreciate the importance of nursing process in clinical practice

E. TEACHING AND LEARNING SCHEDULE

WK Day	Date/Time	Topic	Venue
1 Mon	11/9/2017 1400-1600		
Tues	12/9/2017 1400-1600		
Thurs	14/9/2017 1400-1600		
2 Mon	18/9/2017 1400-1600		
Tues	19/9/2017 1400-1600		
Thurs	21/9/2017 1400-1600		
3 Mon	25/9/2017 1400-1600	Introduction to Nursing Process	
Tues	26/9/2017 1400-1600	Introduction to Nursing Diagnosis	
Thurs	28/9/2017 1400-1600		
4 Mon	02/10/2017 1400-1600	Behavioural Test	
Tues	03/10/2017 1400-1600		

Thurs	05/10/2017 1400-1600		
5 Mon	09/10/2017 1400-1600	Nursing Diagnosis Post Test 1	
Tues	10/10/2017 1400-1600		
Thurs	12/10/2017 1400-1600		
6	13/10/2017	Mid semester break	
7 Mon	23/10/2017 1400-1600		
Tues	24/10/2017 1400-1600		
Thurs	26/10/2017 1400-1600		
8 Mon	30/10/2017 1400-1600	Nursing Diagnosis Post Test 2	
Tues	31/10/2017 1400-1600		
Thurs	02/11/2017 1400-1600		
9 Mon	06/11/2017 1400-1600		
Tues	07/11/2017 1400-1600		
Thurs	09/11/2017 1400-1600		
10 Mon	13/11/2017 1400-1600		
Tues	14/11/2017 1400-1600		
Thurs	16/11/2017 1400-1600		
11 Mon	20/11/2017 1400-1600		
Tues	21/11/2017 1400-1600		
Thurs	23/11/2017 1400-1600		
12 Mon	27/11/2017 1400-1600		
Tues	28/11/2017 1400-1600		
Thurs	30/11/2017 1400-1600		
13	03/12/2017	Practicum	

14	10/12/2017	Practicum	
15	17/12/2017	Practicum	
16	22/12/2017	Practicum	
17	31/12/2017	Revision week	
18-19	07-14/01/18	Final Examination week	
20	19/01/2018	Semester Break	

GTJ101/4: Nursing Foundation 1 (Course Information)



SCHOOL OF HEALTH SCIENCES

TEACHING AND LEARNING PLAN

SEMESTER 1
ACADEMIC SESSION 2017/2018

A. COURSE DETAIL	
Course Code	: GTJ 101
Credit Unit	: 4
Course Title	: NURSING FOUNDATION 1
Day/Time	: Sunday (1100-1300); Monday (1000-1300)
Venue	: Nursing Skill Lab
Course Coordinator	: Dr Azlina Mohd Yusuf
Lecturers	: Dr. Soon Lean Keng Pn. Jayah K. Pubalan
Number of students	: 32
Aim	: As a core course to students in degree program.
B. COURSE OUTCOMES	
CO1	Explain history and nursing development, theories and principles of nursing, basic nursing concepts related to nursing practice, health assessment and nursing process.
CO2	Perform health assessment efficiently by using nursing process.
CO3	Apply critical thinking in performing health assessment and vital signs measurement based on nursing process
CO4	Communicate effectively with the patient and family while doing health assessment using nursing process

C. COURSE SYNOPSIS

This course is one of the foundation courses in nursing degree program. This course comprises of three (3) components: (1) history and nursing development; (2) practice and nursing focus; and (3) health assessment and nursing process. This course provides the nursing student to nursing history and its development, nursing process and health assessment for sustainability of patient's quality of life. The application of evidence-based and nursing process nursing principles is emphasized during laboratory and clinical experiences.

D. COURSE SYLLIBUS

Understand the Nursing Process

Specific Outcomes:

1. Define the nursing process
2. Identify the phases of nursing process
3. Explain the major characteristics of the nursing process
4. Identify activity in each phase of nursing process
5. Appreciate the importance of nursing process in clinical

E. TEACHING AND LEARNING SCHEDULE

WK Day	Date/Time	Topic	Venue
1 Sun	10/9/2017 1100-1300		
Mon	11/9/2017 1000-1300		
2 Sun	17/9/2017 1100-1300		
Mon	18/9/2017 1000-1300		
3 Sun	24/9/2017 1100-1300	Introduction to Nursing Process	
Mon	25/9/2017 1000-1300	Introduction to Nursing Diagnosis	
4 Sun	01/10/2017 1100-1300		
Mon	02/10/2017 1000-1300	Behavioural Test	
5 Sun	08/10/2017 1100-1300		
Mon	09/10/2017 1000-1300	Nursing Diagnosis Post Test 1	
6	13/10/2017	Mid semester break	

7 Sun	22/10/2017 1100-1300		
Mon	23/10/2017 1000-1300		
8 Sun	29/10/2017 1100-1300		
Mon	30/10/2017 1000-1300	Nursing Diagnosis Post Test 2	
9 Sun	05/11/2017 1100-1300		
Mon	06/11/2017 1000-1300		
10 Sun	12/11/2017 1100-1300		
Mon	13/11/2017 1000-1300		
11 Sun	19/11/2017 1100-1300		
Mon	20/11/2017 1000-1300		
12 Sun	26/11/2017 1100-1300		
Mon	27/11/2017 1000-1300		
13 Sun	03/12/2017 1100-1300		
Mon	04/12/2017 1000-1300		
14 Sun	10/12/2017 1100-1300		
Mon	11/12/2017 1000-1300		
15 Sun	17/12/2017 1100-1300		
Mon	18/12/2017 1000-1300		
16	22/12/2017	Revision week	
17	31/12/2017	Final Examination week	
18-19	07-14/01/18	Final Examination week	
20	19/01/2018	Semester Break	

D-Catch GUIDE A FOR DIAGNOSES

Quantity (Main question: “Are the PES components of the diagnosis present?”)

(P= Problem, E= Aetiology, S= Signs and Symptoms, I= Reference to a potential intervention)

4 points: (P+E+S)→(I) Complete

3 points: (P)+(E)+(S)→(?) or (P)+(E)+(?)→(I) or (P)+(?)+(S)→(I) Partially complete

2 points: (P)+(?)+(?)→(I) or (P)+(E)+(?)→(?) or (P)+(?)+(S)→(?) Incomplete

1 point: (P)+(?)+(?)→(?) None

Quality (Main question: “What is the quality of the description with respect to relevancy, unambiguity, and linguistic correctness?”)

4 points: (relevant) + (completely unambiguous) + (linguistically correct) Very good

3 points: (relevant) + (not unambiguous) + (linguistically correct) Good

2 points: (unclear but relevant) + (ambiguous) + (linguistically incorrect) Moderate

1 point: (not relevant) + (ambiguous) + (linguistically incorrect) Poor

D-Catch GUIDE B FOR DIAGNOSES

1. A diagnosis should form a textual whole. This means that the text should be clear and cohesive and should contain link words such as “because”, “owing to”, “subsequently”, “therefore”, “because of” “related to (r/t)”, etc. The diagnostic label should precede link words. (Link words may be substituted with arrows, commas, hyphens).

2. Consecutive sentences and/or phrases without link words but clearly forming comprehensive whole text may be read as one diagnosis. E.g., “Patient was in acute pain. Patient was fumbling with the sheets. Patient was restless.” It is clear from this example that the diagnostic label is acute pain and that the subsequent sentences refer to signs /symptoms.

3. Vague sentences without link words are not considered as a coherent whole but as separate sentences. Therefore, each of these types of sentences is scored separately.

4. Diagnostic terms associated with parentheses, brackets, or commas—for example, “tissue damage (wound)” or “tissue damage, wound”—are scored as diagnostic labels not as signs / symptoms. However, signs / symptoms can be enclosed within parentheses or brackets—for example, “tissue damage, wounds on feet (poor blood circulation peripheral vessels, varying blood sugar levels)”. In this example, the diagnostic label is followed by the basis for the diagnosis, which is stated within parentheses. Assess the use of brackets on a case-by-case basis.

5. In records in which the diagnoses and resulting interventions are stated in different places but it is evident that these diagnoses are part of the identified interventions, text is treated as clear and coherent text, as in point no. 1, and scored accordingly.

NO SCORE:

- All nursing entries that clearly report an observation without a diagnostic label. For example: “250 ml urine in container”, “patient smokes”, “patient walked in the corridor”.
- All nursing entries that refer to technical activities. For example: “cannot insert drip”, “drain is blocked”, “dressing has leaked”.

NLN 2005 Questionnaire

Respondent Code:

QUESTIONNAIRE

Research Title: The differential effect of video assisted lecture versus didactic lecture on accurate formulation of nursing diagnosis, satisfaction, self-confidence and use of simulation design among nursing students.

Section A: Personal Demographic Data

Please fill in a few general questions about yourself (socio-demographic data). Please tick (√) in the box below:

1. Gender : Male Female

2. Education: SPM STPM Matric

Introduction: This questionnaire is a series of statements about your personal opinion about the instruction you receive during your learning activity. Each item represents a statement about your opinion toward your satisfaction with learning and self-confidence in obtaining the instruction you need.

Instructions: For Section B and C, please indicate your own personal truthful feelings about each statement below by marking the numbers that best describe your opinion.

Mark with an X:

1 = Strongly Disagree (SD)

2 = Disagree (D)

3 = Undecided (UN)

4 = Agree (A)

5 = Strongly Agree (SA)

Section B: Student Satisfaction in Learning

No	Satisfaction with current learning	SD	D	UN	A	SA
1	The teaching methods used in this simulation were helpful.					
2	The teaching methods used in this simulation were effective.					
3	The simulation provided me with a variety of learning materials to promote my learning the nursing diagnosis.					
4	I enjoyed how my nursing tutor taught the simulation.					
5	The teaching materials used in this simulation were motivating me to learn.					
6	The teaching materials used in this simulation helped me to learn.					
7	The way my instructor taught the simulation was suitable to the way I learn.					

Section C: Student Self-Confidence in Learning

No	Self-Confidence In Learning	SD	D	UN	A	SA
1	I am confident that I am mastering the content of the simulation activity that my instructors presented to me.					
2	I am confident that this simulation covered critical content necessary for the mastery of formulating accurate Nursing Diagnosis.					
3	I am confident that I am developing the skills from this simulation to perform necessary tasks in a clinical setting.					
4	I am confident that I am obtaining the required knowledge from this simulation to perform necessary tasks in a clinical setting.					
5	My instructor used helpful resources to teach the simulation.					
6	It is my responsibility as the student to learn what I need to know from this simulation activity.					
7	I know how to get help when I do not understand the concepts covered in the simulation.					
8	I know how to use simulation activities to learn critical aspects of these skills.					
9	It is the instructor's responsibility to tell me what I need to learn of the simulation activity content during class time.					

Instruction: In order to measure if the best simulation design elements were implemented in your simulation, please complete the survey below as you perceive it.

Mark with an X:

1 = Strongly Disagree (SD)

2 = Disagree (D)

3 = Undecided (UN)

4 = Agree (A)

5 = Strongly Agree (SA)

Section D: Simulation Design

No	Simulation Design	SD	D	UN	A	SA
	Objectives And Information					
1	There was enough information provided at the beginning of the simulation to provide direction and encouragement.					
2	I clearly understood the purpose of the simulation.					
3	I clearly understood the objectives of the simulation.					

4	The simulation provided enough information in a clear matter for me to problem-solve the question.					
5	There was enough information provided to me during the simulation.					
6	The cues were appropriate and geared to promote my understanding.					
	Support	SD	D	UN	A	SA
7	Support was offered in a timely manner.					
8	My need for help was recognized by my teacher.					
9	I felt supported by the teacher's assistance during the simulation.					
10	I was supported in the learning process.					
	Problem Solving	SD	D	UN	A	SA
11	Independent problem-solving was facilitated.					
12	I was encouraged to explore all possibilities of the simulation.					
13	The simulation was designed for my specific level of knowledge.					
14	The simulation was designed for my specific level of skills.					
15	The simulation allowed me the opportunity to prioritize nursing assessments and care.					
16	The simulation provided me an opportunity to goal set for my patient					
	Feedback/Guided Reflection	SD	D	UN	A	SA
17	Feedback provided was constructive.					
18	Feedback was provided in a timely.					
19	The simulation allowed me to analyse my own behaviour.					
20	The simulation allowed me to analyse my own actions.					
21	There was an opportunity after the simulation to obtain guidance /feedback from the nursing tutor in order to build knowledge to another level.					
	Realism	SD	D	UN	A	SA
22	The scenario resembled a real-life situation.					
23	Real life factors, situations and variables were built into the simulation scenario.					

MCQ for Behavioural Test

Choose ONE correct answer.

Answer All Questions.

1. Once a nurse assesses a client's condition and identifies appropriate nursing diagnoses, a

- A. physical assessment begins.
- B. list of priorities is determined.
- C. plan is developed for nursing care.
- D. review of the assessment is conducted with other team members.

2. Planning is a category of nursing behaviours in which the

- A. client determines the care needed.
- B. physician determines the plan of care for the client.
- C. nurse determines the health care needed for the client.
- D. client-centered goals and expected outcomes are established.

3. Priorities are established to help the nurse anticipate and sequence nursing interventions when a client has multiple problems or alterations. Priorities are determined by the client's

- A. physician.
- B. future well-being.
- C. urgency of problems.
- D. non Emergent, non-life threatening needs.

4. A client-centered goal is a specific and measurable behaviour that reflects a

- A. physician's goal for the specific client.
- B. client's desire for specific health care interventions.
- C. client's highest possible level of wellness and independence in function.
- D. client's response when compared to another client with a similar problem.

5. For clients to participate in goal setting, they should be

- A. able to read and write.
- B. ambulatory and mobile.
- C. able to speak and write.
- D. alert and have some degree of independence.

6. The nurse writes an expected outcome statement in measurable terms. An example is

- A. client will be pain free.
- B. client will have less pain.
- C. client will report pain acuity less than 4 on a scale of 0-10.
- D. client will take pain medication every 4 hours around the clock.

7. As goals, outcomes, and interventions are developed, the nurse must

- A. not change the plan of care for the client.
- B. be in control of all interventions for the client.
- C. be in charge of all care and planning for the client.
- D. be aware of and committed to accepted standards of practice from nursing and other disciplines.

8. When establishing realistic goals, the nurse

- A. must have the client's cooperation.
- B. bases the goals on the nurse's personal knowledge.
- C. must have a client who is physically and emotionally stable.
- D. knows the resources of the health care facility, family, and the client.

9. To initiate an intervention, the nurse must be competent in three areas, which include

- A. skills, finances, and leadership.
- B. leadership, autonomy, and skills
- C. knowledge, function, and specific skills.
- D. experience, advanced education, and skills.

10. Collaborative interventions are therapies that require

- A. nurse and client interventions.
- B. client and physician intervention.
- C. physician and nurse interventions.
- D. multiple health care professionals.

11. Well formulated, client-centered goals should

- A. include rehabilitation needs.
- B. meet immediate client needs.
- C. include preventative health care.
- D. all of the above.

12. The following statement appears on the nursing care plan for an immunosuppressed client: The client will remain free from infection throughout hospitalization. This statement is an example of a (an)

- A. short-term goal.
- B. long-term goal.
- C. nursing diagnosis.
- D. expected outcome.

13. The following statements appear on a nursing care plan for a client after a mastectomy: Incision site approximated; absence of drainage or prolonged erythema at incision site; and client remains afebrile. These statements are examples of

- A. short-term goals.
- B. long-term goals.
- C. expected outcomes.
- D. nursing interventions.

14. The planning step of the nursing process includes the following activities

- A. Assessing and diagnosing
- B. Evaluating goal achievement.
- C. Setting goals and selecting interventions.
- D. Performing nursing actions and documenting them.

15. The nursing care plan is a

- A. documentation of client care.
- B. tool to set goals and project outcomes.
- C. projection of potential alterations in client behaviour.
- D. written guideline for implementation and evaluation.

16. After determining a nursing diagnosis of acute pain, the nurse develops the following appropriate client-centered goal

- A. Determine effect of pain intensity on client function.
- B. Pain intensity reported as a 3 or less during hospital stay.
- C. Encourage client to implement guided imagery when pain begins.
- D. Administer analgesic 30 minutes before physical therapy treatment.

17. When developing a nursing care plan for a client with a fractured right tibia, the nurse includes in the plan of care independent nursing interventions, including

- A. apply a cold pack to the tibia.
- B. elevate the leg 5 inches above the heart.
- C. perform range of motion to right leg every 4 hours.
- D. administer aspirin 325 mg every 4 hours as needed.

18. Which of the following nursing interventions are written correctly?

- A. Change dressing once a shift.
- B. Perform neurovascular checks.
- C. Elevate head of bed 30 degrees before meals.
- D. Apply continuous passive motion machine during day.

19. After assessing the client, the nurse formulates the following diagnoses. Place them in order of priority, with the most important (classified as high) listed first.

- A. Constipation.
- B. Anticipated grieving.
- C. Ineffective tissue perfusion.
- D. Ineffective airway clearance.

20. Which of the following statements about the nursing process is most accurate?

- A. The nursing process is a four-step procedure for identifying and resolving patient problems.
- B. Beginning in Florence Nightingale's days, nursing students learned and practiced the nursing process.
- C. Use of the nursing process is optional for nurses, since there are many ways to accomplish the work of nursing.
- D. The state board examinations for professional nursing practice now use the nursing process rather than medical specialties as an organizing concept.

PATIENT CONSENT FORM (Video Shooting)



UNIT PERHUBUNGAN AWAM DAN PENDIDIKAN KESIHATAN
 HOSPITAL UNIVERSITI SAINS MALAYSIA
 16150 KUBANG KERIAN, KELANTAN

KEBENARAN MENEMURAMAH/MENGAMBIL GAMBAR PESAKIT

Saya PARLOAH BINTI JAAFAR No. K/P 61119-03-5204
 ibu/bapa/penjaga kepada pesakit SEMANDUN @ SHAMSUDIN BIN ISMAIL
 R/N _____ Wad 2 Zamrud memberi
 kebenaran kepada pihak Hospital Universiti Sains Malaysia/Akhbar/Radio/TV/
 Majalah _____ mengambil gambar/
 menemuramah pesakit di atas untuk tujuan disiarkan/simpanan. Dalam hubungan
 ini saya tidak akan membuat sebarang tuntutan kepada USM.

Tarikh : 2/10/17

[Signature]
 (Tandatangan/Cap Ibujari)

INJAN BADIURI BADRI
 Disaksikan Oleh:

[Signature]
 (Tandatangan Saksi)

(No. K/P: 79017-03-5412)

* Potong yang tidak berkaitan

LECTURE NOTES ON NURSING PROCESS

Introduction To Nursing Process

Objectives

- Understand Nursing Process
- Explain the 5 components of Nursing Process
- Enhance critical thinking during nursing care by utilising Nursing Process.
- Perform effective nursing care for a client using the Nursing Process.
- Appreciate the importance of applying Nursing Process during the nursing care for a client.

Introduction

- Healthcare is delivered by various types of healthcare professionals
- Each healthcare discipline brings its unique body of knowledge to the care of the client.
- In fact, a unique body of knowledge is often cited as a defining characteristic of a profession
- Collaboration, and at times overlap, occurs between professionals in providing care
- Each health profession has a way to describe "what" the profession
- Knows and "how" it acts on what it knows.

Introduction

- A profession uses common language to describe and code its knowledge.
- Physicians: International Classification of Disease taxonomy, ICD-10.
- Psychologists, psychiatrists, and other mental health professionals treat mental health disorders and use the Diagnostic and Statistical Manual of Mental Disorders, DSM-V.
- Nurses treat human responses to health problems and/or life processes and use the NANDA International, Inc. (NANDA-I) nursing diagnosis taxonomy.

- The NANDA-I taxonomy provides a way to classify and categorize areas of concern to nursing (i.e., foci of the diagnoses). It contains 235 nursing diagnoses grouped into 13 domains and 47 classes.
- A domain is a "sphere of knowledge; examples of domains in the NANDA-I taxonomy include: Nutrition, Elimination/Exchange, Activity/Rest, or Coping/Stress Tolerance (Merriam-Webster, 2009).
- Domains are divided into classes (groupings that share common attributes).

- Nurses deal with responses to health conditions or life responses among individuals, families, groups, and communities.
- Such responses are the central concern of nursing care and fill the circle ascribed to nursing.
- A nursing diagnosis can be problem-focused, or a state of health promotion or potential risk (Herdman, 2012):
- Nursing Process – owned by NURSES
- THE only profession apart from medicine which has the rights to come out for a diagnosis for the client/patient Nursing Diagnosis

Nursing Process

- Specific to the nursing profession
- A framework for critical thinking
- It's purpose is to:

"Diagnose and treat human responses to actual or potential health problems"

Nursing Process

- Organized framework to guide practice
- Lets the nurse develop a plan of care for the client and gives the nurse direction
- Problem solving method - client focused
- Helps to determine the client's problems and ways to help the client overcome these problems
- Systematic- sequential steps
- Based on 5 specific steps which need to be completed in order

Nursing Process

- Goal oriented- outcome criteria
- Based on goals to determine if client's needs have been met. Designed on monitoring the outcomes of the process
- Dynamic-always changing, flexible
- Continually looked at, reviewed, and changed based on the client's condition
- Utilizes critical thinking processes
- Guides the nurse to assist the client with reaching their greatest level of health

How the Author of problem solving

- ID problem
- Collect data
- Form hypothesis
- Plan of action
- Hypothesis testing
- Interpret results
- Evaluate findings

Nursing process is very much like the scientific method of problem solving

Nursing process is **UNIQUE** to the nursing profession

Advantages of Nursing Process

- Provides individualized care
- Client is an active participant
- Promotes continuity of care
- Provides more effective communication among nurses and healthcare professionals
- Develops a clear and efficient plan of care
- Provides personal satisfaction as you see client achieve goals
- Professional growth as you evaluate effectiveness of your interventions

5 Steps in the Nursing Process

- Assessment
- Nursing Diagnosis
- Planning
- Implementing
- Evaluating

Each step needs to be completed before we can progress further in the process

Assessment

- First step of the Nursing Process
- Systemically collects, verifies, analyzes and communicates data
- Gather Information/Collect Data
 - Primary Source - Client / Family
 - Secondary Source - physical exam, nursing history, team members, lab reports, diagnostic tests:
 - Subjective - from the client (symptom)
 - "I have a headache"
 - Objective - observable data (sign)
 - Blood Pressure 130/80
- Establishes a data base about client needs, health problems, responses, related experiences, health practices, values, lifestyle, & expectations

Assessment Data

- Subjective Data
- Objective Data
- Sources of Data
- Methods of Data Collection-Interview
- Interview initiates nurse-client relationship
- Use open-ended questions
- Nursing health history

Assessment - collecting data

- Nursing interview (history)
- Health Assessment -Review of Systems
- Physical Exam
 - Inspection
 - Palpation
 - Percussion
 - Auscultation

Assessment-collecting data

- Make sure information is complete & accurate
- Validate prn
- Interpret and analyze data
Compare to "standard norms"
- Organize and cluster data

Example of Assessment

- Obtain info from nursing assessment, history and physical (H&P) etc.....
- Client diagnosed with hypertension
- B/P 160/90
- 2 Gm Na diet and antihypertensive medications were prescribed
- Client statement " I really don't watch my salt" " It's hard to do and I just don't get it"

*** one factor effecting the client's uncontrolled hypertension is lack of maintaining sodium intake restrictions

Nursing Diagnosis

- Second step of the Nursing Process
- Statement that describes the client's actual or potential response to a health problem
- Focuses on client-centered problems
- First introduced in the 1950's
- 1982- Nursing Diagnosis (NANDA : North American Nursing Diagnosis Association)- Statement of how the client is RESPONDING to an actual or potential problem that requires nursing interventions to individualize care

Nursing Diagnosis vs Medical Diagnosis

Nursing Diagnosis	Medical Diagnosis
<ul style="list-style-type: none"> • Within the scope of nursing practice • Identify responses to health and illness • Can change from day to day 	<ul style="list-style-type: none"> • Within the scope of medical practice • Focuses on curing pathology • Stays the same as long as the disease is present

Formulating a Nursing Diagnosis

- Composed of 3 parts:
- **Problem statement**- the client's response to a problem
 - what's causing/contributing to the client's problem
- **Defining Characteristics**- what's the evidence of the problem

Formulating Nursing Diagnosis

- **Problem(Diagnostic Label)**-based on your assessment of client...(gathered information), pick a problem from the NANDA list...
- **Etiology**- determine what the problem is caused by or related to (R/T)...
- **Defining characteristics**- then state as evidenced by (AEB) the specific facts the problem is based on...

Types of Nursing Diagnoses

- **Actual**
Imbalanced nutrition; less than body requirements RT chronic diarrhea, nausea, and pain AEB height 5'5" weight 105 lbs.
- **Risk**
Risk for falls RT altered gait and generalized weakness
- **Wellness**
Family coping; potential for growth RT unexpected birth of twins.

Example of Nursing Dx

- **Ineffective therapeutic regimen management**
R/T difficulty maintaining lifestyle changes and lack of knowledge
AEB B/P= 160/90, dietary sodium restrictions not being observed, and client statements of "I don't watch my salt" "It's hard to do and I just don't get it".
- First part is the clients problem taken from the NANDA list
- Second part is a reason why the client has the problem
- Third part is the evidence of the problem

Planning


- Third** step of the Nursing Process
- When the nurse organizes a nursing care plan based on the nursing diagnoses.
 - Nurse and client formulate goals to help the client with their problems
 - Expected outcomes are identified
 - Interventions (nursing orders) are selected to aid the client reach these goals.

Nursing Care Plans

- Written guidelines for client care
- Organized so nurse can quickly identify nursing actions to be delivered
- Coordinates resources for care
- Enhances the continuity of care
- Organizes information for change of shift report

Planning – Begin by *prioritizing* client problems

- Prioritize list of client's nursing diagnoses using Maslow
- Rank as high, intermediate or low
- Client specific
- Priorities can change



The diagram shows Maslow's Hierarchy of Needs pyramid with five levels from top to bottom: Self-actualization, Esteem, Love and Belongingness, Safety, and Physiological. Below the pyramid, it states: 'Maslow's Hierarchy of Needs: The order of hierarchy, from top to bottom, is: Self-actualization, Esteem, Love and Belongingness, Safety, and Physiological.' At the bottom of the pyramid, it says: 'Maslow's Hierarchy of Needs: The order of hierarchy, from top to bottom, is: Self-actualization, Esteem, Love and Belongingness, Safety, and Physiological.'

Planning. Developing a goal and outcome statement

- Goal and outcome statements are client focused.
- Worded positively
- Measurable, specific, observable, time-limited, and realistic
- Goal = broad statement
- Expected outcome = objective criterion for measurement of goal

EXAMPLE

- **Goal:** Client will achieve therapeutic management of disease process....
- **Outcome Statement:** AEB B/P readings of 110-120 / 70-80 and client statement of understanding importance of dietary sodium restrictions by day of discharge.

Planning- Types of goals

- Short term goals
- Long term goals
- Cognitive goals
- Psychomotor goals
- Affective goals

Planning-select interventions

- Interventions are selected and written
- The nurse uses clinical judgment and professional knowledge to select appropriate interventions that will aid the client in reaching their goal.
- Interventions should be examined for feasibility and acceptability to the client
- Interventions should be written clearly and specifically.

Purpose of Goals and Outcomes

- Provides direction for individualized nursing interventions
- Sets standards of determining the effectiveness of interventions
- Indicates anticipated client behavior or response to nursing care
- End point of nursing care

Goals of care

- Goal: Guideposts to the selection of nursing interventions and criteria in the evaluation of interventions
- What you want to achieve with your patient and in what time frame
- Short term vs. Long term
- Outcome Of Care: What was actually achieved, was goal met or not met

Goals are patient-centered and

SMART

Specific
Measurable
Attainable
Relevant
Time Bound

- Pt will walk 50 ft.
- Pt will eat 75% of meal
- Pt will be OOB (out of bed) 2-4hrs
- Pt will maintain HR<100
- Pt will state pain level is acceptable 6 (0-10)

Implementation (Intervention)

- The **fourth** step in the Nursing Process
- This is the "Doing" step
- Carrying out nursing interventions (orders) selected during the planning step
- This includes monitoring, teaching, further assessing, reviewing NCP, incorporating physicians orders and monitoring cost effectiveness of interventions
- Utilize nursing intervention classification (NIC) as standard

Implementation

- Describes a category of nursing behaviors in which the actions necessary for achieving the goals and outcomes are initiated and completed

- Action taken by nurse



Implementation

- Interventions are selected after goals and outcomes are determined
- Actions designed to assist client in moving from the present level of health to that which is described in the goal and measured with outcome criteria
- Utilizes critical thinking by applying attitudes and standards and synthesizing data

Implementation – 3 types

- **Independent (Nurse initiated)**- any action the nurse can initiate without direct supervision
- **Dependent (Physician initiated)**-nursing actions requiring physician orders
- **Collaborative**- nursing actions performed jointly with other health care team members

Types of Nursing Implementation

- **Standing Orders:**
Document containing orders for the use of routine therapies, monitoring guidelines, and/or diagnostic procedure for specific condition
- **Protocols:**
Written plan specifying the procedures to be followed during care of a client with a select clinical condition or situation (Pneumonia, MI, CVA)

Implementing- "Doing"

- Monitor VS q4h
- Maintain prescribed diet (2 Gm Na)
- Teach client amount of sodium restriction, foods high in sodium, use of nutrition labels, food preparation and sodium substitutes
- Teach potential complications of hypertension to instill importance of maintaining Na restrictions
- Assess for cultural factors affecting dietary regime

Implementing – "Doing"

- Teach the client- hypertension can't be cured but it can be controlled.
- Remind the client to continue medication even though no S/S are present.
- Teach client importance of life style changes: (weight reduction, smoking cessation, increasing activity)
- Stress the importance of ongoing follow-up care even though the patient feels well.

Implementation Process involves:

- Reassessing the client
- Reviewing and revising the existing care plan
- Organizing resources and care delivery (equipment, personnel, environment)

Selection Of Implementations

- Using clinical decision making skills, the nurse deliberates 6 factors:
 - diagnosis,
 - expected outcomes,
 - research base,
 - feasibility,
 - acceptability to client,
 - competency of nurse

Collaborative Problems

- Require both nursing interventions and medical interventions
EXAMPLE: Client admitted with medical dx of pneumonia
Collaborative problem = respiratory insufficiency
Nsg interventions: Raise HOB, Oxygen therapy
MD interventions: Antibiotics IV, O2 therapy

Evaluation- To determine effectiveness of NCP

- **Final step** of the Nursing Process but also done concurrently throughout client care
- A comparison of client behavior and/or response to the established outcome criteria
- Continuous review of the nursing care plan
- Examines if nursing interventions are working
- Determines changes needed to help client reach stated goals.

Evaluation of Goal Achievement

- Measures and Sources: Assessment skills and techniques
- As goals are evaluated, adjustments of the care plan are made
- If the goal was met, that part of the care plan is discontinued
- Redefines priorities

Evaluation

- Outcome criteria met? Problem resolved!
- Outcome criteria not fully met? Continue plan of care- ongoing.
- Outcome criteria unobtainable- review each previous step of NCP and determine if modification of the NCP is needed.
- Were the nursing interventions appropriate/effective?

Evaluation

Factors that impede goal attainment:

- Incomplete database
- Unrealistic client outcomes
- Nonspecific nursing interventions
- Inadequate time for clients to achieve outcomes.

Checkpoint

Identify which stage of the nursing process is being described below:

- The nurse writes nursing interventions
- A goal is agreed upon
- The nurse performs a physical assessment
- A revision is made to the NCP
- The nurse administers antibiotic medication
- A statement is written that outlines the clients response to a potential health problem

Summary

Nursing Actions		Client	Projected Outcome
<p>Assessment</p> <ul style="list-style-type: none"> • Obtain vital signs • Assess for pain • Assess for respiratory status • Assess for skin integrity • Assess for fluid balance • Assess for mental status • Assess for safety • Assess for patient knowledge • Assess for patient expectations • Assess for patient preferences • Assess for patient beliefs • Assess for patient values • Assess for patient culture • Assess for patient religion • Assess for patient ethnicity • Assess for patient sexual orientation • Assess for patient gender identity • Assess for patient gender expression • Assess for patient gender role • Assess for patient gender atypicity • Assess for patient gender dysphoria • Assess for patient gender euphoria • Assess for patient gender consistency • Assess for patient gender authenticity • Assess for patient gender congruence • Assess for patient gender harmony • Assess for patient gender peace • Assess for patient gender joy • Assess for patient gender love • Assess for patient gender respect • Assess for patient gender dignity • Assess for patient gender honor • Assess for patient gender glory • Assess for patient gender fame • Assess for patient gender power • Assess for patient gender influence • Assess for patient gender authority • Assess for patient gender leadership • Assess for patient gender mentorship • Assess for patient gender coaching • Assess for patient gender supervision • Assess for patient gender management • Assess for patient gender organization • Assess for patient gender administration • Assess for patient gender operation • Assess for patient gender maintenance • Assess for patient gender protection • Assess for patient gender defense • Assess for patient gender offense • Assess for patient gender attack • Assess for patient gender war • Assess for patient gender conflict • Assess for patient gender dispute • Assess for patient gender controversy • Assess for patient gender debate • Assess for patient gender discussion • Assess for patient gender dialogue • Assess for patient gender conversation • Assess for patient gender communication • Assess for patient gender interaction • Assess for patient gender relationship • Assess for patient gender connection • Assess for patient gender bond • Assess for patient gender link • Assess for patient gender tie • Assess for patient gender knot • Assess for patient gender rope • Assess for patient gender cord • Assess for patient gender string • Assess for patient gender thread • Assess for patient gender yarn • Assess for patient gender fiber • Assess for patient gender filament • Assess for patient gender strand • Assess for patient gender twill • Assess for patient gender cloth • Assess for patient gender fabric • Assess for patient gender textile • Assess for patient gender material • Assess for patient gender matter • Assess for patient gender substance • Assess for patient gender stuff • Assess for patient gender object • Assess for patient gender thing • Assess for patient gender item • Assess for patient gender article • Assess for patient gender piece • Assess for patient gender part • Assess for patient gender portion • Assess for patient gender share • Assess for patient gender fraction • Assess for patient gender percentage • Assess for patient gender ratio • Assess for patient gender proportion • Assess for patient gender comparison • Assess for patient gender contrast • Assess for patient gender distinction • Assess for patient gender difference • Assess for patient gender similarity • Assess for patient gender resemblance • Assess for patient gender likeness • Assess for patient gender analogy • Assess for patient gender metaphor • Assess for patient gender simile • Assess for patient gender comparison • Assess for patient gender contrast • Assess for patient gender distinction • Assess for patient gender difference • Assess for patient gender similarity • Assess for patient gender resemblance • Assess for patient gender likeness • Assess for patient gender analogy • Assess for patient gender metaphor • Assess for patient gender simile 	<p>Planning</p> <ul style="list-style-type: none"> • Set priorities • Develop goals • Select interventions • Evaluate effectiveness • Revise care plan • Document care • Communicate with team • Educate patient • Provide emotional support • Offer patient choices • Respect patient autonomy • Promote patient independence • Encourage patient participation • Support patient self-care • Assist patient with activities of daily living • Provide patient with information • Offer patient reassurance • Give patient encouragement • Provide patient with feedback • Offer patient praise • Show patient appreciation • Express patient gratitude • Demonstrate patient respect • Show patient empathy • Offer patient understanding • Provide patient with validation • Give patient recognition • Offer patient acknowledgment • Show patient respect • Demonstrate patient empathy • Offer patient understanding • Provide patient with validation • Give patient recognition • Offer patient acknowledgment 	<p>Implementation</p> <ul style="list-style-type: none"> • Perform interventions • Monitor patient response • Adjust care plan • Document care • Communicate with team • Educate patient • Provide emotional support • Offer patient choices • Respect patient autonomy • Promote patient independence • Encourage patient participation • Support patient self-care • Assist patient with activities of daily living • Provide patient with information • Offer patient reassurance • Give patient encouragement • Provide patient with feedback • Offer patient praise • Show patient appreciation • Express patient gratitude • Demonstrate patient respect • Show patient empathy • Offer patient understanding • Provide patient with validation • Give patient recognition • Offer patient acknowledgment 	<p>Evaluation</p> <ul style="list-style-type: none"> • Assess patient progress • Compare patient response to goals • Determine if care plan is effective • Revise care plan as needed • Document care • Communicate with team • Educate patient • Provide emotional support • Offer patient choices • Respect patient autonomy • Promote patient independence • Encourage patient participation • Support patient self-care • Assist patient with activities of daily living • Provide patient with information • Offer patient reassurance • Give patient encouragement • Provide patient with feedback • Offer patient praise • Show patient appreciation • Express patient gratitude • Demonstrate patient respect • Show patient empathy • Offer patient understanding • Provide patient with validation • Give patient recognition • Offer patient acknowledgment

LECTURE NOTES ON NURSING DIAGNOSIS

U-M APEX NURSING

Nursing Diagnosis

Objectives

- Define nursing diagnosis
- State the purpose of nursing diagnosis
- Explain the benefits of nursing diagnosis
- State the type of nursing diagnosis
- Explain the component of nursing diagnosis
- Appreciate the importance of formulating correct nursing diagnosis

Introduction

- Second phase of the nursing process
- Link between assessment and planning interventions
- Use critical thinking during the process
- Care planning activities base on the nursing diagnoses

Critical Thinking

North American Nursing Diagnosis Association [NANDA] Definition....

Is a clinical judgment about the client's, family or community responses to actual or potential health problem.

Nursing diagnoses provide the basis for selection of nursing interventions to achieve outcome for which the nurse is accountable

Purpose of nursing diagnosis

- √ Facilitate individual care
- √ Facilitate communication and care planning
- √ Focus on the role of nursing in client care
- √ Distinguish the nurse role from the physician
- √ Facilitate continuity of care

Benefits of nursing diagnosis

- Give nurses a common language
- Promote identification of appropriate expected outcomes
- Create a standard for nursing practice
- Provide a quality improvement base

Diagnosis Terminology

- 1 The second step of the nursing process
- 2 The reasoning process used to interpret data in order to draw conclusions and make a
- The product: A formal statement of the patient's health status is written, using
- The standardized list of diagnostic terminology approved by NANDA

Before diagnosing

- WHAT ???
 - Analyze - compare against standards
 - Interpret - cluster cues
 - Identify - gaps and inconsistencies
- THEN: Formulate diagnosis

Medical vs. Nursing Diagnosis

Medical Diagnosis	Nursing Diagnosis
Made by physician	Made by nurse
Refer to the disease process	Describe client response
Some what uniform between clients	Responses vary between in individual
Physician orders interventions	Nurse order interventions
Ex: Pneumonia	Ex: Self care deficit

Types of nursing diagnosis (5)

- Actual nursing diagnosis
- Risk / potential nursing diagnosis
- Possible nursing diagnoses
- Wellness diagnoses
- Syndrome diagnoses

Component of a nursing diagnosis

- Qualifiers
 - Additional meaning to a nursing diagnosis
- Altered (a change from base line)
- Impaired (made worse, weakened, damage, reduced deteriorated)
- Decrease (smaller in size, amount or degree)
- Ineffective (not producing the desired effect)
- Acute (severe or short duration)
- Chronic (lasting a long time, recurring or constant)

Diagnostic label (Problem Statement)

- Describe the client's health problem or response
- Specific
- Example:
 - Knowledge deficit (medication)
 - Knowledge deficit (dietary adjustment)

Actual Nursing Diagnosis
 Three-part statement
 format

1. problem
2. etiology
3. signs and symptoms

• Example
 Constipation r/t insufficient fluid intake as evidence (or manifested) by hard stool

Example of actual nursing diagnosis

Nursing diagnosis/ related to/ as manifested by

Ineffective airway clearance/ related to physiologic effects of pneumonia/ as evidenced by increased sputum, coughing, abnormal breath sounds, tachypnea, and dyspnea

Risk diagnosis

- The persons data base contains evidence of related (risk factors of the diagnosis, but no evidence of the defining characteristics
- Problem + etiology
- Risk for impaired skin integrity/ related to obesity, excessive diaphoresis and confinement to bed
- No signs and symptoms

Risk / Potential Nursing Diagnosis

Two part statement
 format

problem + etiology
 The two parts are joined by the word

• Example

1. Ineffective breast feeding engorgement	breast
2. Ineffective breast feeding knowledge	lack of

Related factor and risk factor (Etiology)

- Identifies one or more probable cause of the health problem
- Give direction to the required nursing therapy
- Etiology may include client behaviors or environment factors
- Example.

<u>Problems</u>	<u>Etiology</u>
1 Sleep pattern disturbance	lack of privacy
2 Constipation	lack of privacy inadequate fiber intake inadequate fluid intake

Possible diagnosis

- The person's data base doesn't demonstrate the defining characteristics or related factors of the diagnosis, but your intuition tells you the diagnosis may be present

One part statement and simply name the possible problem

• Ex. Possible ineffective individual coping

Wellness diagnosis

- Being able to diagnose wellness diagnoses is based on recognizing when healthy clients indicate a desire to achieve a higher level of functioning in a specific area
- One part statement use the word *potential for enhanced*
Pt says I wish I were a better parent
Nursing diagnosis: Potential for enhanced parenting

Syndrome diagnosis

- There are only two syndrome diagnosis on the NANDA list
-
-
-
- Used a syndrome diagnosis when the diagnosis is associated with a cluster of other diagnosis (often seen in bedridden nursing home care residents)
- It is a one part statement. Simply name the syndrome

Nursing Diagnoses associated with disuse syndrome

- Impaired physical mobility
- Risk for constipation
- Risk for altered respiratory function
- Risk for infection
- Risk for activity intolerance
- Risk for injury
- Risk for altered thought process
- Risk for body image disturbance
- Risk for powerlessness
- Risk for impaired tissue integrity

NURSING CARE PLAN

- Formal guideline for directing nursing staff to provide client care
- Purpose of a nursing care plan is to identify problems of a patient and find solutions to the problems

NURSING CARE PLAN

Patient's Initials _____ Diagnosis _____

Problem list	Nursing Diagnosis	Goals	Implementation/ rationale	Evaluation
		Short term Long term		

NURSING CARE PLAN

Patient's Initials _____ Diagnosis _____

Problem list Assessment Subjective=based on what the patient says Objective= based on your observation, laboratory data, and vitals signs
--

NURSING CARE PLAN
 Patient's initials _____ Diagnosis _____

Nursing Diagnosis

- Problem:** Nanda (North American nursing diagnosis association) Approved Nursing diagnosis
- Etiology:** written as *related to* is often part of the medical diagnosis
- Signs and Symptoms:** written as "as evidenced by" (AEB) = should include your assessment data of how you decided on that particular diagnosis

NURSING CARE PLAN
 Patient's Initials _____ Diagnosis _____

Intervention/ rationale

- Should be based on your scope of practice
- Make sure you know the rationale of your intervention
- Include health teaching

NURSING CARE PLAN
 Patient's Initials _____ Diagnosis _____

Evaluation

Either goal met, partially met or not met

Planning/ expected outcome

- Components of expected Outcome
- Subject: Who is the person expected to achieve the outcome?
- Verb: What actions must the person take to achieve the outcome?
- Condition: Under what circumstances is the person to perform the actions?
- Performance criteria: How well is the person to perform the actions?
- Target time: By when is the person expected to be able to perform the actions?

Planning/ expected outcome

Mr. Smith will walk with a cane at least to the end of the hall and back by Friday

- Subject: Mr. Smith
- Verb: will walk
- Condition: with a cane
- Performance criteria: at least to the end of the hall and back
- Target time: by Friday

Activity 1

Identify what kind of nursing diagnosis

Impaired communication/ related to language barrier/ as evidenced by inability to speak or understand English and use of Spanish

Actual nursing diagnosis

Activity 2

- Risk for aspiration related to impaired swallowing
- Risk nursing diagnoses

Activity 3

- Possible altered sexuality pattern
- Possible nursing diagnosis

Activity 4

- Potential for enhanced care giver
- Wellness diagnoses

Activity 5

- Rape trauma syndrome
- Syndrome diagnosis

Activity # 6

- Identify if the statement is correct. If not correct the statement
- risk for injury related to lack of the side rails on bed
X

do not write statement in such a way that it may be legally incriminating

- risk for injury related to disorientation

Activity 7

- Rape trauma syndrome

One part statement only

Activity 8

- Mastectomy related to cancer

X

do not state the nursing diagnosis using medical terminology Focus on the persons response to medical problems

- Risk for self concept disturbance related to effects of the mastectomy

Activity 9

- Pain and fear related to diagnostic procedure

X

do not state two problem at the same time

- fear related unfamiliarity with diagnostic procedures

- pain related to diagnostic procedure

Activity 10

- Risk for confinement related to confinement to bed

X

One part statement only

Activity 11

- Risk for confinement related to confinement to bed

X

One part statement only

Activity 12

- Spiritual distress related to atheism as evidenced by statements that she has never believe in GOD

X

don't write a nursing diagnosis based on value judgment

- there may be no diagnosis in this situation. The person may be at peace with her beliefs not with yours

Measurable verbs

- | | |
|---------------|--------------|
| · Identify | ·Share |
| · Describe | ·Express |
| · Perform | ·Will loose |
| · Relate | ·Will gain |
| · State | ·Communicate |
| · List | ·Cough |
| · Verbalize | ·Walk |
| · Hold | ·Stand sit |
| · Demonstrate | |

Non measurable verbs (Do not use)

- Know
- Understand
- Appreciate
- Think
- Accept
- Feel

Activity 13

Identify if the statement are written correctly

- John will know the four basic food groups by 6/30/07

X

- The verb is not measurable
- ✓ John will list the four basic food groups by 6/30/07

Activity 14

Identify if the statement are written correctly

- Mrs. S will demonstrate how to use her walker unassisted by Saturday

- Subject: Mrs. S
- Verb: will demonstrate
- Condition: will use her walker
- Performance criteria unassisted
- Target time: by Saturday

Activity 15

Identify if the statement are written correctly

- After 1 hour Mrs. G will verbalize decrease level of pain from 10/10 to 3/10

- Subject: Mrs G
- Verb: will verbalize
- Condition: decrease level of pain
- Performance criteria from 10/10 to 3/10
- Target time: after 1 hour

Activity # 16 write a care plan for the following problem

- 1 Pt who has diarrhea
- 2 Pt who is constipated
- 3 Pt who has a fever
- 4 Pt who has stage II decubitus ulcer
- 5 Pt who is in pain or create a care plan using
 1. ineffective airway clearance
 2. Risk for aspiration
 3. Risk for infection
 4. impaired physical mobility

Activity # 17

1.) A Nurse is assigned to care for a patient receiving enteral feedings. The nurse plans care knowing that which of the following is a highest priority for the client

- 1.) altered nutrition
- 2.) risk for aspiration
- 3.) risk for fluid volume deficit
- 4.) risk for diarrhea

Answer activity # 17

- Any condition in which gastrointestinal motility is slowed or esophageal reflux is possible places a client at risk for aspiration.

Options 1 and 4 maybe appropriate nursing diagnoses but are not of highest priority.

Option 3 is not likely to occur

Activity # 18

- The nurse is teaching a client with diabetes mellitus about dietary measures to follow. The client express frustration in learning the dietary regimen. The nurse would initially

1. Identify the cause of the frustration
2. Continue with the dietary teaching
3. Notify the physician
4. Tell the client that the diet needs to be followed

Answer Activity # 18

- Use the steps of the nursing process. Assessment is the first step.
- Of the four options presented, the only assessment is option 1.
- Option 2, 3 and 4 are implementation.
- The initial action is to identify the cause of the frustration

Activity # 19

- Pain related to surgical incision as manifested by moaning, guarding incision site, pain 10/10
- which part is etiology?
- which part is the problem?
- which part is the signs and symptoms?

Activity# 20

- What are the possible nursing diagnoses for someone who has the following condition?

- Pt who has a tracheostomy
- Pt who has a stroke
- Post operation patient

Summary

Nursing Diagnosis

- Important component for nursing education
- Critical for nursing service
- Updates crucial by nurses
- Holistic care for the patients.

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Date: Respondent Code:

RESEARCH INFORMATION FOR RESPONDENTS

Research Title : Differential effects of video assisted lecture and didactic lecture on accuracy of nursing diagnosis, satisfaction, self-confidence and simulation design among nursing students.

Researcher's Name : Jayah K. Pubalan

Researcher's ID Number : AM 50765

INTRODUCTION

You are invited to take part voluntarily in a research study entitled **differential effects of video assisted lecture and didactic lecture on accuracy of nursing diagnosis, satisfaction, self-confidence and simulation design among nursing students**. This experimental study will be conducted to evaluate the effect of video assisted lecture and didactic lecture in enhancing nursing students' ability to formulate accurate nursing diagnosis in their first year of nursing program. The teaching and learning process of nursing diagnosis will be delivered to nursing students with videos of patient scenario and vignette scenario in power points. The accuracy to formulate nursing diagnosis data will be taken from the nursing students answer sheets. Nursing students' participation in this study is expected to last up to 1-2 teaching weeks and a total of six hours of learning. This study will need 72 nursing students to participate in this study. Whereby 36 nursing students will be in the interventional group and another 36 nursing students will be in the control group. Apart from formulating the nursing diagnosis, the nursing students also need to answer the questionnaire. Before agreeing to participate in this research study, it is important that you read and understand this form. It describes the purpose, procedures, benefits, risks of the study and your qualification in the study. It also describes the alternative procedures that are available to you and your right to withdraw from the study at any time. If you participate, you will get a copy of this form to keep for your records.

PURPOSE OF THE STUDY

The purpose of this study is to evaluate effect of video assisted lecture and didactic lecture in enhancing nursing students' ability to formulate accurate nursing diagnosis in their first year of nursing program.

QUALIFICATION TO PARTICIPATE

You are eligible to participate if you are:

- All first year Diploma Nursing students of Academic Session 2017/2018 Semester 1
- Enrolled in the Nursing foundation 1 subject Code DGN 113/4 and GTJ205/4
- Consented to participate in the study

You are not eligible to participate if you are:

- Qualified with other diploma or degree

STUDY PROCEDURES

If you agree to participate in the study, you will be required to follow the teaching of theory of nursing diagnosis and practical of formulating nursing diagnosis from the video scenarios and vignette scenarios according to your lecture schedules. Students in interventional group will be taught this subject matter with video assisted lecture method. However the control group will follow the didactic lecture method. Both the teaching will be scheduled in a different time. The study will involve you to formulate the nursing diagnosis according to the respective scenarios in the documents provided. The study also requires you to participate in answering the self-administered questionnaire regarding your satisfaction, self-confidence and the simulation design of the teaching method as distributed by the researcher. Following informed consent, you will complete self-administered questionnaires. The time taken to complete the questionnaire will be approximately 15-30 minutes.

BENEFITS

The nursing diagnoses are useful to improve the quality of assessment document which include the description of patient problems, their aetiology and the planning of diagnostic-specific procedures to care for the patients. Hence a strong foundation of knowledge acquisition to nursing diagnosis plays an important role in developing appropriate nursing care plan by nursing students. The study data obtain from nursing student will help nursing education to determine the diversity of teaching and learning. This study also may collaborate as guidance to improve the education given to nursing students regarding accurate formulation of nursing diagnosis to promote ideal nursing care plan for their patients.

RISKS

If you participate in this study, you may have some risks that are not harmful to your health. You may experience fatigue and boredom when formulating the nursing diagnosis or answering the questionnaire. The feelings of guilt or embarrassment may be aroused from thinking about your level of accuracy to formulate nursing diagnoses, satisfaction over the new method of learning and self-confidence to formulate accurate nursing diagnoses when filling out the questionnaire. However, there will be no term of identification from you in this research project. You will be informed the option to participate or not without fear of loss of knowledge gained from the teaching session on nursing process and nursing diagnosis. All information will be kept confidential and use for research purposes only.

PARTICIPATION IN THE STUDY

Your participation is entirely voluntary. You may refuse to take part in the study or you may stop the participation in the study anytime, without any penalty or loss of benefits to which you are otherwise entitled.

QUESTIONS

If you have any question about this study or your rights, please kindly contact:

Ms. Jayah K. Pubalan
School of Health Sciences
Health Campus, Universiti Sains Malaysia,
16150, Kubang Kerian, Kelantan.
Office Number: 609 7677550
E-mail: jayahkp@usm.my

If you have any questions regarding the Ethical Approval, please contact:

Mr. Mohd Bazlan Hafidz Mukrim
Secretary of Research Ethics Committee (Human) USM
Division of Research and Innovation
USM Health Campus
No. Tel: 09767 2354 /09767 2362
Email: jepem@usm.my or bazlan@usm.my

CONFIDENTIALITY

Your personal information will be kept confidential by the researcher and will not be made publicly available unless disclosure is required by law. Data obtained from this study that does not identify you individually will be published for knowledge purposes. Your records may be reviewed by the researcher, the Ethical Review Board for this study, and regulatory authorities for the purpose of verifying data. Your personal information may be held and processed on a computer. By signing this consent form, you authorize the record review, information storage and data transfer described above.

SIGNATURES

In order to participate in the study, you must sign and provide the date on the signature page.

RESPONDENT INFORMATION AND CONSENT FORM

**Respondent Information and Consent Form
(Signature Page)**

Research Title : Differential effects of video assisted lecture and didactic lecture on accuracy of ND, satisfaction, self-confidence and simulation design among nursing students.

Researcher’s Name : **Jayah K. Pubalan**

To join this study, you are required to sign this page. By signing this page, I am confirming the following:

- I have read all the information in this Research Information and Consent Form **including any information regarding the risk in this study** and I have time to think about it.
- All of my questions have been answered to my satisfaction.
- I voluntarily agree to be part of this research study, to follow the study procedures, and to provide necessary information to the researcher as requested.
- I may freely choose to stop being a part of this study at any time.
- I have received a copy of this Research Information and Consent Form as a record for myself.

Respondent name (Full name)	Respondent Initials
Respondent I.C No. (New)	Respondent I.C No. (Old)
Signature of Respondent	Date (dd/MM/yy)
Name and Signature of Individual	Date (dd/MM/yy)
Name & Signature of Witness	Date (dd/MM/yy)

RESEARCH ETHICS COMMITTEE (HUMAN) USM APPROVAL LETTER



Jawatankuasa Etika
 Penyelidikan Manusia USM (JEPeM)
 Human Research Ethics Committee USM (HREC)

Universiti Sains Malaysia
 Kampus Kesihatan,
 16150 Kubang Kerian, Kelantan, Malaysia
 T : (609-767 3000/7354/7362)
 F : (609-767 2351)
 E : jepem@usm.my
 L : www.jepem.usm.my
 www.usm.my

20th September 2017

Mrs. Jayah K. Pubalan
 School of Health Sciences
 Universiti Sains Malaysia
 16150 Kubang Kerian, Kelantan.

JEPeM Code : USM/JEPeM/17070354
 Protocol Title : The Effect of Video Assisted Lecture and Didactic Lecture on Accurate Formulation of Nursing Diagnosis, Satisfaction, Self-confidence and Use of Simulation Design among Nursing Students.

Dear Mrs.,

We wish to inform you that your study protocol has been reviewed and is hereby granted approval for implementation by the Jawatankuasa Etika Penyelidikan Manusia Universiti Sains Malaysia (JEPeM-USM). Your study has been assigned study protocol code **USM/JEPeM/17070354**, which should be used for all communication to the JEPeM-USM related to this study. This ethical clearance is valid from **20th September 2017** until **19th September 2018**.

Study Site: School of Health Sciences, Universiti Sains Malaysia.

The following researchers also involve in this study:

1. Dr. Kasmah Wati Pardi

The following documents have been approved for use in the study.

1. Research Proposal

In addition to the abovementioned documents, the following technical document was included in the review on which this approval was based:

1. Participant Information Sheet and Consent Form (English version)
2. Participant information Sheet and Consent Form (Malay version)
3. Checklist for Vignette Scenarios
4. Questionnaire

Attached document is the list of members of JEPeM-USM present during the full board meeting reviewing your protocol.

While the study is in progress, we request you to submit to us the following documents:

1. Application for renewal of ethical approval 60 days before the expiration date of this approval through submission of **JEPeM-USM FORM 3(B) 2017: Continuing Review Application Form**. Subsequently this need to be done yearly as long as the research goes on.
2. Any changes in the protocol, especially those that may adversely affect the safety of the participants during the conduct of the trial including changes in personnel, must be submitted or reported using **JEPeM-USM FORM 3(A) 2017: Study Protocol Amendment Submission Form**.



3. Revisions in the informed consent form using the **JEPeM-USM FORM 3(A) 2017: Study Protocol Amendment Submission Form**.
4. Reports of adverse events including from other study sites (national, international) using the **JEPeM-USM FORM 3(G) 2017: Adverse Events Report**.
5. Notice of early termination of the study and reasons for such using **JEPeM-USM FORM 3(E) 2017**.
6. Any event which may have ethical significance.
7. Any information which is needed by the JEPeM-USM to do ongoing review.
8. Notice of time of completion of the study using **JEPeM-USM FORM 3(C) 2017: Final Report Form**.

Please note that forms may be downloaded from the JEPeM-USM website: www.jepem.kk.usm.my

Jawatankuasa Etika Penyelidikan (Manusia), JEPeM-USM is in compliance with the Declaration of Helsinki, International Conference on Harmonization (ICH) Guidelines, Good Clinical Practice (GCP) Standards, Council for International Organizations of Medical Sciences (CIOMS) Guidelines, World Health Organization (WHO) Standards and Operational Guidance for Ethics Review of Health-Related Research and Surveying and Evaluating Ethical Review Practices, EC/IRB Standard Operating Procedures (SOPs), and Local Regulations and Standards in Ethical Review.

Thank you.

"ENSURING A SUSTAINABLE TOMORROW"

Very truly yours,



PROF. DR. MOHD SHUKRI OTHMAN

Deputy Chairperson
Jawatankuasa Etika Penyelidikan (Manusia) JEPeM
Universiti Sains Malaysia

DEAN OF SCHOOL OF HEALTH SCIENCES APPROVAL LETTER



Tarikh : 27/09/2017

Prof Dr Norazmi Mohd Nor
Dekan
Pusat Pengajian Sains Kesihatan
USM, Kampus Kesihatan

s.k.
Dr. Dariah Mohd Yusoff
Pengerusi Program Kejururawatan
Pusat Pengajian Sains Kesihatan
USM, Kampus Kesihatan

MEMOHON KEBENARAN MELAKUKAN KAJIAN DI PUSAT PENGAJIAN SAINS KESIHATAN UNIVERSITI SAINS MALAYSIA KAMPUS KESIHATAN

Dengan hormatnya saya merujuk kepada perkara di atas. Saya telah mendapat kelulusan Etika Manusia untuk melakukan kajian bertajuk **Kesan syarahan dengan bantuan video dan syarahan didaktik untuk merumus diagnosis kejururawatan yang tepat, kepuasan, keyakinan diri dan kegunaan simulasi dalam kalangan pelajar kejururawatan**. Dengan ini, saya bercadang untuk menjadikan Pusat Pengajian Sains Kesihatan Universiti Sains Malaysia Kampus Kesihatan sebagai tempat kajian.

2. Sehubungan itu, saya ingin memohon kebenaran Dekan untuk membolehkan saya melakukan kajian tersebut di Pusat Pengajian Sains Kesihatan.

3. Bersama ini disertakan cadangan kajian dan surat kelulusan etika.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Yang benar,

Jayah K. Pubalan
Pensyarah Kejururawatan
Pusat Pengajian Sains Kesihatan
USM Kampus Kesihatan
16150 Kota Bharu

*B. Jayah,
Lulus!*

28/9/17
PROF. MASNA DR. UMA DZON HUAT
Pensyarah Dekan
Pusat Pengajian Sains Kesihatan
Kampus Kesihatan USM
16150 Kota Bharu, Kelantan

PERMISSION FOR D-CATCH GUIDE FOR DIAGNOSES

Dear Dr Paans,

Greetings to you from Ms Jayah K. Pubalan from Malaysia. I am currently will be undertaking a research on Nursing Process/Nursing Diagnosis. I came across your article published in 2009 in Journal of Professional Nursing. I would like to use your questionnaire for my research. Hence would be very grateful if you could email your questionnaire (D-Catch instrument, Knowledge Inventory, CCTDI and HSRT). Thanking you in advance for your kindness and cooperation.

Regards
Jayah K.Pubalan

Dear Jayah,

Thank you for your mail. Please, feel free to use the D-Catch anyway you want it. It is free for use. Please, let me know if I can help you. JANI pdf contains the instrument. Psychometric testing, please see JANII en Psychometric D-Catch.

Lots of luck with your study!

Kind regards,

Wolter Paans.

Dr. Wolter Paans, Lector Verpleegkundige Diagnostiek (Professor Nursing Diagnostics)
School of Nursing, Hanze University of Applied Sciences, Eyssoniusplein 18 (room C017)
9714 CE Groningen, The Netherlands
PO Box 3109, 9701 DC Groningen, The Netherlands
phone: ++31-(0)50-5953534 / ++31-(0)50-5953650 / 06-51979573
www.denkwerkerindezorg.nl
www.hanze.nl/verpleegkundigediagnostiek
Management assistant: Irene Mulder-Arends
T. ++31(0)50 5957531
E. i.mulder-arends@pl.hanze.nl

PERMISSION FOR NATIONAL LEAGUE NURSING 2005

Good day, I am Jayah K Pubalan, a nurse educator and currently pursuing Doctor of Education in Malaysia. I am requesting NLN to grant to me your permission to use the "Student satisfaction and Self-confidence in learning" for my research. I will be conducting a study on ND among nursing students in a local university here. Hoping NLN will grant your permission for me.

Thank you.

Regards, Jayah K Pubalan.

Hello – thank you for your inquiry. The tool is free to download and use for research purposes. Please review the caveats that we ask researcher to acknowledge here: <http://www.nln.org/professional-development-programs/research/tools-and-instruments>

You will also find a link to download the tool on this same page.

Regards, Amy

Amy McGuire | Program Manager | National League for Nursing | www.nln.org | amcguire@nln.org | 202-909-2509 | 2600 Virginia Avenue NW, 8th Floor, Washington, DC 20037

Scheme for Accurate Nursing Diagnoses

Medical Scenario

List of Accurate Nursing Diagnosis

1. Ineffective airway clearance r/t airway spasm, aeb patients' statement difficult to breathe.
2. Ineffective breathing pattern r/t to spasm of the airway, aeb RR 26bpm.
3. Impaired gas exchange r/t bronchospasm, aeb cyanosis
4. Activity intolerance r/t imbalance of oxygen supply aeb pulse rate 156 bpm
5. Knowledge deficit about asthma, r/t lack of information sources aeb patients' first admission.
6. Anxiety r/t inability to breathe effectively aeb RR26bpm
7. Impaired comfort r/t AEBA aeb SOB
8. Ineffective peripheral tissues perfusion related to AEBA evidence by cyanosis.
9. Risk for imbalanced nutrition, less than body requirements r/t an increase in shortness of breath, intolerance to activity.
10. Risk for fall related to restless in bed.

Scenario Surgical

List of Accurate Nursing Diagnosis

1. Ineffective airway clearance r/t increased secretions secondary to tracheostomy aeb by difficulty removing secretions
2. Impaired for tissue integrity r/t MVA aeb abrasion wound on both legs
3. Impaired verbal communication related to inability to speak aeb by patient unable to verbally communicate on assessment
4. Toileting self-care deficit, r/t disease process, bed ridden aeb unable help self
5. Risk for aspiration r/t NG feeding
6. Risk for urinary tract infection r/t placement of an indwelling catheter evidenced by placement of catheter more than 7 days
7. Self-care deficit r/t inability to ambulate autonomously aeb by generalized weakness
8. Risk for infection r/t excessive pooling of secretions and bypassing of upper respiratory tract aeb by patient having a tracheostomy and increased secretions
9. Risk for skin integrity r/t limitation in mobility
10. Risk for infection r/t insertion of intra-jugular catheter