

**CRITICAL THINKING SKILLS AMONG TRAINED NURSES
ON PATIENT DIABETIC CARE MANAGEMENT:
A CASE STUDY**

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UNIVERSITI SAINS MALAYSIA

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IF YOU ARE DOING SOMETHING GOOD, DO IT. DON'T WAIT.

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**KEMAHIRAN PEMIKIRAN KRITIS DALAM KALANGAN JURURAWAT
TERLATIH TERHADAP PENGURUSAN PENJAGAAN PESAKIT
DIABETIK: SATU KAJIAN KES**

ABSTRAK

Kajian ini bertujuan untuk mengkaji tahap pemikiran kritis dalam kalangan jururawat terlatih dalam pengurusan penjagaan pesakit diabetik dengan menggunakan Lapan Elemen Pemikiran Paul (2006). Kajian ini mengkaji tahap asal pemikiran peserta sebelum perbincangan tentang pengurusan penjagaan diabetik pesakit dan bagaimana tahap pemikiran mereka berubah semasa dan selepas perbincangan tentang pengurusan penjagaan diabetik pesakit dengan menggunakan elemen-elemen pemikiran. Reka bentuk kajian kes digunakan dengan persampelan bertujuan untuk memilih enam orang peserta kajian daripada empat-belas pelajar siswazah jururawat yang mengikuti program kejururawatan di sebuah kolej perubatan tempatan. Soal selidik terbuka dan berstruktur, *health talks* dan temu bual separa struktur individu digunakan untuk memperoleh data dari peserta sebelum, semasa dan selepas perbincangan tentang pengurusan penjagaan diabetik pesakit. Kesemua data yang diperolehi melalui *health talks* dan temu bual telah dirakamkan sebelum dianalisis mengikut lapan elemen pemikiran secara *within-case* and *cross-case analysis*. Dapatan kajian menunjukkan kesemua peserta berada dalam tahap pemikiran satu di fasa satu atau sebelum mereka berbincang mengenai pengurusan penjagaan diabetik pesakit dengan menggunakan lapan elemen pemikiran. Di fasa dua atau semasa perbincangan mengenai pengurusan penjagaan diabetik pesakit, tiga orang peserta didapati masih dalam tahap pemikiran satu manakala terdapat tiga orang peserta lagi yang berada dalam tahap pemikiran ketiga. Di fasa tiga iaitu peserta telah tamat perbincangan mengenai pengurusan penjagaan diabetik pesakit, dapatan kajian menunjukkan hasil kajian yang sama dengan fasa dua, iaitu terdapat

tiga orang peserta dalam tahap pemikiran ketiga dan tiga peserta lagi masih didapati dalam tahap pemikiran satu. Dapatan kajian telah menyumbang kepada kesedaran agar pengajar dan pentadbir kanan jururawat perlu menitikberatkan fokus pada pembentukan awal kemahiran berfikir kritis semasa latihan pelajar jururawat supaya mereka boleh menggunakan kemahiran tersebut dalam situasi yang memerlukan mereka membuat keputusan dan menyelesaikan masalah dalam amalan kejururawatan. Bagi jururawat yang terlatih dan dalam perkhidmatan, dapatan kajian mencadangkan bahawa dengan adanya aktiviti-aktiviti pengajaran dalam kursus induksi pendek, mereka boleh mendapat kemahiran berfikir untuk menggunakan ilmu pengetahuan yang ada bagi memperbaiki lagi amalan kejururawatan.

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ABSTRACT

The purpose of this study was to investigate the stage of critical thinking of trained nurses in patient diabetic care management using Paul's Eight Elements of Thoughts (2006). This study examined the participants' initial stage of thinking prior to their discussions on patient diabetic care management and how their stage of thinking change during and after their discussions on patient diabetic care management using the elements of thoughts. A case study design was used with a purposive sampling of six participants selected from a group of fourteen trained nurses who were following the degree nursing programme at a local medical college. Open-ended structured questionnaires, health talks and semi-structured individual interviews were utilized to gather data from the participants prior to, during and after discussions on patient diabetic care management. All the data gathered from the health talks and interviews was audio-taped before analysis according to the eight elements of thoughts using with-case and cross-case analysis. The findings had indicated that all the participants were in stage one of thinking in phase one or before they had discussed about patient diabetic care management using the eight elements of thoughts. In phase two or during discussions about patient diabetic care management, there were three participants in stage one of thinking while the remaining three participants were in stage three of thinking. In phase three where they had completed their discussions about patient diabetic care management, study findings had indicated results that were similar to those of phase two, that is there were three participants in stage three of thinking and the remaining three participants were still in stage one of thinking. The findings of the study

contribute in creating awareness among educators and senior nurse administrators of the need to place more focus on early development of critical thinking skills in the training of student nurses so that these skills could be utilized in situations that call for decision-making and problem-solving in nursing practice. For the nurses who are already trained and in service, the findings suggest that structured teaching-learning activities through short induction courses could be carried out so that nurses could put their knowledge to work to further improve nursing practice.

CHAPTER 1

INTRODUCTION

1.1 Introduction

Rapid changes in the healthcare environment have expanded the decision-making role of the nurse. Critical thinking is essential when making decisions and solving problems when carrying out nursing care for patients or when carrying out nursing managerial functions. It is an active process involving the nurse in sifting data, choosing the relevant components that are vital and then assessing and filtering them to form a decision process that will outcome in safe nursing interventions and practice. This process is important because the nurse has to decide on the information obtained which can be complex and include not only a clinical complaint but also of the family and may involve his / her culture (Simpson & Courtney 2003). Any decisions made after thinking critically on it would reflect in the expected provision of care for the best patient outcome. However, if the nurse is unaware of these mental processes and who does not evaluate inferential knowledge critically, he/she tends to become overconfident and exaggerate the extent of what they know as correct which could result in negative implications in patient care (Hoffman & Elwin, 2004).

Nurses are expected to know how to think and to find out if they are not clear on what is expected of them, such as in situations like being not clear on the calculation of insulin dosage when they are required to give insulin injections to their patients. 2572 medication errors had been reported by the Malaysian Medication Error Reporting System that was started in 2009 by the Ministry of Health (Ismail Merican, 2010).

Among the causes identified had been the dosage factor. This was due to miscalculation of the dosage by the medication administrators which included nurses. Insulin is given as replacement therapy to compensate for the lack of insulin in diabetic patients. The dosage for insulin to be given is not pre-set but is calculated on the patient's individual need and is given via injections with insulin pens. Confusion in the calculation could occur when different pens are used.

Besides the giving of insulin injections, diabetic patient management also includes the delivery of health education to the patients and their family. Among the aspects to be given is regarding the taking of oral hypoglycaemic drugs. Routine health education is just for the nurse to inform the patient about the importance of the medication and not on how to counteract the side effects of taking those drugs such as abdominal distension. Advice should include the method of taking those drugs to reduce those side effects so that the patient will continue to take them.

This chapter serves as a prelude to this case study on the usage of critical thinking among trained nurses when carrying out patient diabetic care management. As the nurses in this study were part of a group of experienced nurses undergoing the bachelor degree programme, their syllabus had included the nursing management of patients with diabetes mellitus. Teaching-learning activities including discussions had taken place whereby the participants' prior nursing knowledge, skills and clinical nursing experience had tied in to new knowledge and skills obtained, hence creating new meaning for their knowledge. To carry that out, contextual teaching strategies such

as relating, experiencing, applying, co-operating and transferring (Crawford and Witte, 1999) had been used as part of the normal teaching-learning discussion process. But whether the nurses had internalized the subject of diabetic care management critically was left to be determined. The aim of this chapter is to discuss on the issues of thinking among these trained nurses before they commenced on discussing about diabetic care management, the changes evident in the participants after they had discussed the topic as well as after completing their discussion on the topic.

1.2 Background to the Study

Patients are becoming better consumers of health care than patients of the past. With internet access and the ability to use it effectively, patients are becoming more self – empowered by taking greater charge of themselves and their lives (Hopson & Scally, 1981). This has resulted in patients becoming more demanding about receiving information on their health conditions and treatment as they are now more aware of their rights in decision making regarding their own health care management.

Nurses too seek to deliver holistic care for their patients. However, where the delivery of care in nursing practice is concerned, much needs to be improved. The notion nurses have of having carried out their responsibility as nurses is that they have carried out all the routine care while their patients are in hospital (Rankin & Stallings, 1990).

However, patients are all individuals with different needs and this requires the nurse to be able to deliver nursing care tailor-made for the individual patient. Hence, there is a need for nurses to be able to think critically in order to manage any patient situation (Taylor, Lillis & LeMone, 2004; Dewit, 2009). However, before the nurse can do problem-solving, he /she has to “think about thinking” so that he/she can apply the “parts-whole thinking” (Swartz et al, 2008) to the problem faced. This would enable the nurse to be conscious of the steps and strategies of thinking that could be used during the act of problem-solving as well as to reflect and re-evaluate the productiveness of these strategies so that they could be changed if necessary. Therefore, critical thinking skills are important as they are engaged in skilful problem-solving. However, from the nurse training point of view, this thinking perspective is not focused upon though it has been implied (Rashidah Mohamed, 2006). If one takes a look into the curriculum for diploma nursing conducted by the nursing colleges under the flagship of the Ministry of Health, Malaysia, one will find that there is not much focus placed on developing the thinking and decision-making skills of student nurses (*Kementerian Kesihatan Malaysia, 2005*).

Critical thinking can be defined as “that mode of thinking about any subject, content or problem, in which the thinker improves the quality of his or her thinking by skillfully analyzing, assessing and reconstructing it” (Elder & Paul, 2006, p 19). It entails a systematic way of thinking such as looking into the purpose for specific thinking, the various perspectives and assumptions that have to be considered, and the implications as consequence of behaviour arising from a specific thought. Thinking

critically is the essence of an individual's identity through which he/she knows who they are through interactions with one another in a group of people.

1.2.1 Importance of Critical Thinking

Critical thinking in nursing refers to the “purposeful, informed reasoning both in and outside the clinical setting” (Alfaro-LeFevre, 2004). Being able to think critically is essential for nurses as they have to deal with information overload, multiple priorities and new challenges that require them to learn and to adapt. Not anybody can be nurses without adequate training and preparation. Nurses are also different from other professions, the difference being that the nurses view their patients and the types of problems they deal with in their practice when engaging in patient care. To think like a nurse requires one to learn the content of nursing, the ideas, concepts and theories of nursing and to develop the individual's capabilities and skills to become a disciplined self-directed critical thinker. Heaslip (1993) believed that with critical thinking, nurses would be able to think in a systematic and logical manner to reflect on the reasoning process in order to ensure safe nursing practice and quality care. Therefore, learning and applying critical thinking requires nurses to have a broad knowledge base of the health, behavioural and nursing sciences. Critical thinking is of import for the following reasons:

Firstly, the nursing profession and the healthcare delivery system have changed for in addition to their traditional role as caregivers, nurses are responsible for a unique dimension of healthcare services such as fulfilling specialized roles as care managers,

teachers, counselors and researchers (Kelly-Heidenthal, 2003). As nursing has changed from being an altruistic entity to a business entity, nurse employees have identified interdependent work components and are charged to design collaborative practices and processes that could enhance efficiency across the entire business enterprise. Therefore when nurses have internalized critical thinking skills, they could be used in other perspectives of nursing and not necessarily only confined to problem-solving in the patient context. Consequently, nurses are expected to accept more responsibilities, collaborate with diverse individuals and make independent decisions on a wider perspective (Daniels, Nosek & Nicoll, 2007).

Secondly, nurses are knowledgeable, competent and independent professionals who work collaboratively with other healthcare professionals to design and deliver holistic care. Therefore, acquiring critical thinking skills helps to give nurses the confidence to know when to act independently and when to ask for help. They are often involved in complex situations that require in-depth thinking. Nursing is unlike other disciplines for it is a practice discipline which requires the nurse to be able to make meaningful decisions in order to carry out competent nursing for real patients with real problems (Siti Rabikhatun Datuk Mohd Zain, 2010). In the nursing curriculum (Document 4, *Curriculum Review* 2009), there is a strong focus on the learning of practical nursing skills where student nurses are being taught standard basic nursing procedures in caring for their patients in their activities of daily living. There has not been enough emphasis on inculcating in the student nurses higher-level thinking skills such as problem-solving, decision-making and critical thinking skills. Based on this

researcher's experience as nurse and educator, she agreed with Rashidah Mohammad (2006) that if nurses have been trained using the present local Malaysian nursing curriculum, then they are knowledge workers who are task-oriented rather than being thought-oriented (Kementerian Kesihatan Malaysia, 2005). Brennan (1991) too had supported this issue in that nurses must be educated to think so that they can practice nursing.

In the local nurse training curriculum, the core of nursing is the use of the nursing process as the mainstay of nursing care. Traditionally, nurses prided themselves in just comforting those who were ill and executing with precision such tasks as dressing wounds, administering medications and bathing, feeding and ambulating patients as ordered by physicians. As the nursing delivery system changes, nursing has become more complex as nurses have to deal with the diagnosis and treatment of human responses to actual or potential nursing problems. Critical thinking is called for as the nursing process is used to understand and to improve the means that nurses use to accomplish their aims for patient care (Taylor, Lillis & LeMone, 2004; Kimmel, 2007).

The nursing process is a systematic method which directs the nurse and the patient as together they accomplish the following: assessing to determine the need for nursing care, determining nursing diagnosis for actual and potential health problems, identifying outcomes and planning care, implementing the care and evaluating the care results (Taylor, Lillis & LeMone, 2004). This nursing process had been legitimized by the American Nursing Congress for Nursing Practice in 1973 and by the Canadian

Nurses Association in 1987 as the standard to guide nursing practice (Taylor, Lillis & LeMone, 2004). The nursing process has since been adapted and adopted in the Malaysian nursing practice. Therefore, it is being included in the nurse-training syllabus. However, though the students may be taken through the nursing process in providing holistic patient care during their training, its application in real time nursing is blurred. The theory of the nursing process encompassing assessment, diagnosis, objectives, interventions and evaluation, may be learned but once the student nurses become staff nurses, the entire nursing process may not get carried out. Only the necessary nursing procedures may be used during the day-to-day nursing care of patients. Therefore, whether the nursing process gets to be practiced or not would depend very much on the nursing sisters or ward managers themselves in their supervision of their nurses and patient care.

Thirdly, critical thinking is the key to preventing potential problems as well as resolving actual ones. If nurses cannot think critically, they become part of the problem themselves. From this researcher's experience as a nurse tutor with the Ministry of Health, Malaysia, for 18 years, she had had the experience of teaching students who were trained nurses and medical assistants with a minimum of 12 to 14 years of clinical experience in various healthcare settings. These students were observed to be mostly "robotic workers" who memorized all the appropriate procedures and equipment as well as the required nursing interventions and just dished them out to their patients without thinking. An example which involved a patient who had had myringotomy done for 4 times due to infection because the nurse had not informed the patient about the post-

operative care of the wound after discharge from hospital. This example seemed to support Brennan's opinions (1991) that even uneducated and unintelligent individuals could be good nurses in following orders and understanding the patient's normal needs but that in the varied patient context, these nurses would only go by feelings and lack judgment in dealing with specific situations. Therefore nursing a patient without thinking about the individual context could contribute to the patient's potential problem.

Finally, critical thinking is essential to passing the many tests that nurses have to take to demonstrate knowledge such as the Malaysian Nursing Board's pre-registration examination. Formerly, these pre-registration examination questions tested the candidates on lower levels of thinking at the recall and comprehension cognitive levels. Currently the Nursing Board Malaysia had stipulated that questions for all its examinations would be set according to a new format whereby 70% of the test questions would be on the application cognitive level in Bloom's taxonomy, 20% on the analysis level and 10% on the higher level of synthesis. All the questions set are based on the ward or community set-ups with nursing scenarios for the candidates to use their critical thinking in order to "problem-solve" in the scenarios given (Ministry of Health, Malaysia, February 2010). It is hoped that with this change in format, the candidates would have to learn to think more in depth during their training in order to be able to answer those questions during examination time.

1.2.2 Critical Thinking as Important Component in Nursing Practice

Problems such as medication errors, have arose when due consideration has not been given to the individual context of a situation. In a study carried out to determine nurses' reported thinking during medication administration, it was established that the safe administration of medications was more than just a technical mechanical process. The results also showed that situations requiring dosage, timing or selection of specific medications indicated the participants' use of critical thinking and clinical judgment (Eisenhauer, Hurley & Dolan, 2007). In 2010, 2572 medication errors were reported by the Malaysian Medication Error Reporting System that was started in 2009 by the Ministry of Health (Ismail Merican, 2010) and this number had increased by 47 in 2011 (Khalid Ibrahim, 2011). The figures given of medication error had been provided by the public healthcare sector and had excluded the private healthcare providers as medication error to this system was on a voluntary basis. The system had identified causative factors associated with medication errors and they had been related to professional practices, healthcare products, procedures and systems and this had included the administration technique of medication error. An example illustrated was the administration of oral paracetamol syrup through the intravenous line by a 6-year patient's father since the nurse had left the medication on the patient's table while he was sleeping. The father had claimed that the nurse was aware of his administration of the medication (Khalid Ibrahim, 2011). One of the recommended actions to be taken was that corrective and preventive measures should be reviewed by the respective heads of sections. This example had clearly illustrated the lack of critical thinking in problem-solving on the part of the nurse.

The lack of critical thinking in decision making among practicing nurses may be among the factors contributing to patient complaints of the nursing service even in earlier times (Liow Tiong Lai, 2008; Chua Soi Lek, 2006). The Nursing Board Malaysia has recognized the importance of this critical thinking component in nurse training. It has revised and compiled specific examination guidelines pertaining to the application of critical thinking in nursing in its pre-registration examination format which all student nurses have to sit and pass before being conferred the status as “trained nurses” and allowed to practice in Malaysia (Ministry of Health, Malaysia, 2010).

Even the Malaysian Qualifications Agency or MQA has realized the importance of self-directed learning and critical thinking and has come up with guidelines on the MQA Credit System (Malaysian Qualification Agency, 2010). This system emphasizes on student learning time which requires students to be self-directed in their quest for knowledge within set guidelines. This teaching-learning approach has removed the teacher focus in learning and encourages students to be more responsible in their own learning process. The expected outcome is that students would develop more intellectually as well as cultivate a more matured way of thinking. However, the following factors provide a different scenario where nursing is concerned.

1.2.2.1 Handling Nursing Situations

Students may have done very well when they have passed the Malaysian Nursing Board’s pre-registration examination even with the change in examination format. This was due to the practice of getting students to do assignments and other

self-directed learning activities when they had advanced to Semester 4 to prepare them for the Nursing Board examination during this researcher's tenure as a nurse tutor with the Ministry of Health, Malaysia. By then, the students were assumed to have known how to think to answer those questions in the examination. This method had proven to be very successful as government colleges usually would record high percentages in their passing rates. But then this researcher opined that critical thinking should be inculcated early in the training in Semester 1 and not just in Semester 4 as it needed to be internalized in stages in order to be effective (Elder & Paul, 1996).

Though the students had passed the required pre-registration examination and had become registered trained nurses in the various healthcare settings, it would not guarantee that all of them would practice critical thinking in their nursing care delivery. An example of weak critical thinking was when a trained nurse had transfused four units of platelet to a patient without orders from the attending doctor although this doctor had placed the blood in reserve for that particular patient in case the need arose (Sharifah, 2013). Another example was when a baby's eyes were wrongly instilled with oral drops instead of eye drops (Afifah Azizan, 2013). The third example was when the medication Salbutamol was given instead of Paracetamol (Safura Basri, 2013).

1.2.2.2 Student Entry Qualifications

For entry into nurse training, the entry requirements are 5 credits at the *Sijil Pelajaran Malaysia* or Malaysian Certificate of Education level, the credits being in mathematics, science and any other 3 subjects with a pass in *Bahasa Malaysia (Malay*

language) and in the English language (Nursing Board Malaysia, 2010). Though students may have credits in Mathematics, they generally encounter problems in their calculation of medication dosage in the course of their nurse training. With a pass in the English language, the students had constraints in expanding their knowledge and thinking skills as their command of the language would not help them to develop the level of their critical thinking further since most of the materials on thinking are in the English language.

1.2.2.3 Large Student Intake

To meet local demands for trained nurses, the training division at ministry level had increased its student intake. This increase in number had taken its toll on the teaching manpower compromising on teaching quality since the teachers would be more concerned with completing the nursing syllabus content and clinical placement on time rather than on the development of the students' higher cognitive functions.

Besides the student nurse training programme, nurse teachers also had to conduct the assistant and community nurses' upgrade programmes. With such tight schedules, the nurse teacher could only ensure that these mature students pass the Malaysian Nursing Board pre-registration Examination. Focus was not given to the development of critical thinking skills on the assumption that they could think critically as they had had prior working experience.

1.2.2.4 Diploma Nursing Curriculum

The diploma nursing programme accredited by the Nursing Board Malaysia, provides comprehensive preparation and a sound foundation in the health, behavioural and nursing sciences enabling the theory components to be integrated in clinical practice. The basis of the nursing sciences is the nursing process which is the core thread running throughout the curriculum aimed at preparing the nurse to be sensitive to the needs of patients and their families. In the nursing process, the problem-solving approach is also utilized in the students' clinical practice.

Students have been taught the nursing process as the core of nursing care. The nursing curriculum is very well covered with the health, behavioural and nursing sciences where knowledge and skills in these areas are concerned. However, there has not been enough focus on the “how” to think in order that the nursing process could be implemented effectively. To illustrate this point, an incident happened when a student from Semester 4 accompanied an elderly patient to the toilet in a wheelchair prior to his discharge from hospital. The patient had a fall and fractured the head of his femur all because the student nurse had not considered the safety aspect of the patient and had not locked the wheels of the wheelchair while in the toilet. This incident helped to reinforce the notion that the nursing process “is very good on paper” but may not get carried out properly after the students have become trained nurses.

Although the diploma in nursing curriculum has the blessings from the Nursing Board Malaysia, the syllabus coverage is wide given the limited time to carry out the

theory input as well as clinical experience, so much so that it portrays the superficiality of the subjects taught. Moreover, focus has not been placed on promoting in-depth learning of soft skills. These attributes of students are often only implied. The common expectation is that interpersonal skills of effective communication, critical and reflective thinking as well as problem solving need not be explicitly taught as it could be emulated and learnt socially in the teaching-learning environment and in practice areas by students from nursing lecturers and during interactions with trained nursing staff (Ng Yoon Mooi, 2008).

1.2.2.5 Teacher-Centred Instruction

The teaching of student nurses in Malaysia is still very much teacher-centred though various student-centred instructional strategies has been recommended by the training division of the Ministry of Health, Malaysia “to accommodate self-directed learning to a large extent, including continuing education so that the graduates of the programme assume responsibilities for professional and self-development” (Kementerian Kesihatan Malaysia, 2005, p.5). It would be difficult to apply the guidelines pertaining to those instructional strategies due to the time constraints in implementing a very packed curriculum. Hence, usually the nurse tutor in charge of a semester would complete the relevant curriculum using teacher-centred learning methods within the stipulated timeframe. As an example, according to Khoo Yin Yin (2008), teachers tended to take the easy way out by giving the answers without explaining to save time in order to complete the syllabus on time and critical thinking activities were not focused upon. This was reinforced in a study carried out by Thang

and Azarina (2007) on student learning approach when they found that the students of three local universities used a more teacher-centred approach to their learning. Therefore, the introduction of critical thinking skills depends very much on the nurse tutor in his or her planning and preparation of learning activities for the student nurse within the stipulated timeframe.

To compound matters further, there appeared to be a lack of experienced and trained nurse educators due to a drain of experienced and trained nurses to the more lucrative overseas markets (Matsuno, 2007). Besides that, in order to meet demands for nurses in the domestic and international markets, numerous private nursing colleges had been established to provide for nurse training besides those under the purview of the Malaysian Ministry of Health (Lembaga Jururawat Malaysia, 2006). This mushrooming of nursing schools and colleges could be due to the fact that nurse training is currently seen as profit-making enterprises. As a sequel to that scenario, it had resulted in there being fewer qualified, trained and experienced academic nursing staff as well as limited facilities for clinical instruction and experiences. Consequently, the quality of nursing graduates inevitably has been greatly compromised (Matsuno, 2007) and could have resulted in many of these graduates being unemployed (Siti Rabikhatun Datuk Mohd Zain, 2010, *The Star*, 3rd February, 2012)

Fresh nursing graduates who lacked clinical experience had been employed to fill up nurse educator vacancies. They transferred nursing knowledge as according to

the curriculum but they lacked the versatility and creativity to utilize critical thinking learning activities as they rushed to complete the nursing syllabus on time.

Subscribing to this standpoint, students are explicitly taught and expected to learn core component knowledge and related skills in relation to nursing practice. At the same time, they are expected to be able to interact and think critically and effectively to overcome problems at work. But the very fundamental attributes required to effectively guide them in clinical decision-making during nursing practice are not explicitly developed let alone taught. Even if the attributes are offered by nurse tutors in the course of their teaching, it is at best non-comprehensive. Focus is made merely to a couple of attributes, causing students and new graduates to lack total interpersonal and critical thinking ability to offer best practice in an increasingly complex clinical environment (Rashidah Mohammed, 2006).

1.3 Statement of the Problem

Based on the above discussions, there are many factors that need to be considered if nurse training is to improve. An example is the common nursing behaviour of referring to standard textbooks and procedure manuals to handle a patient situation without adequate consideration on the patient's individualized needs. By so doing, there is a level of certainty in the likelihood of producing the desired health outcome. However, the results of one patient situation may not be applicable to another patient situation. A sound reasoning and thinking process is required to resolve patient

problem to produce the knowledge of the likelihood that a nursing action will cause the intended health outcome.

Despite the efforts made by the Malaysian Nursing Board to ensure that the nurses who have passed their examination are nurses who are able to think, it was not represented in the public perception of Malaysian nurses. In a study carried out by Pek (2009) to explore the public perception toward the nursing profession among 100 respondents, it was found that only 9 % had agreed that nurses make decisions for themselves in the nursing arena and that only 50 % of the respondents had considered nurses as professionals. The results of this study had indicated that much need to be done to improve on the image of nursing as a profession and nurses as being knowledgeable, critical thinkers, decision-makers and empowered practitioners in the healthcare system (Pek, 2009).

Efforts have to be made to ensure that nurses who pass the Malaysian Nursing Board's pre-registration examination are able to comprehend and apply what they have learnt through the examination format which consists of questions based on ward and patient scenarios. They would be required to think through the various ward and patient scenarios in order to come to a logical conclusion on the appropriate nursing behaviour required to deal with those situations. One can only assume that these nurses would be able to apply critical thinking skills in their working life later when nursing patients with the different diseases including those with diabetes.

Currently in nursing practice, student nurses are expected to be able to co-relate nursing theory to nursing practice in the clinical set-up. Bandura (1989) had proposed that individuals learn from observing and imitating a model's behaviour. Therefore, student nurses would have learnt their clinical nursing skills through observing role models in their nurse teachers and trained staff nurses in the clinical settings. However, not all nurse teachers and trained staff nurses are exemplary role models resulting in the student nurses "catching" the wrong behaviour or attitudes. Bandura's theory is applicable in students learning on the physical behaviour observed from the role models but not so from the thinking process standpoint. This is undesirable and can affect the quality of nursing care as student nurses generally do not question or think critically the appropriateness of an action in specific situations (Ng Yoon Mooi, 2008). Hence, students are being churned out later to become "robotic workers" who memorize all the procedures and the equipment as well as standard nursing care management for specific nursing situations. Nursing patients then just become a matter of selecting the appropriate care management for specific patients from a pre-memorized pre-prepared checklist without the nurses having to go through the complex process of thinking.

Nurses do not need to think as there are the various standard procedures and interventions to choose from when they are posed with a specific situation. According to Walsh (2002), nurses only require a superficial kind of thinking to get by day after day. However, though nurses may have some kind of thinking based on the nursing experiences they have had, they may not know how to use those thinking skills that they possess. With such shallow thinking, they would decide upon a standard course of

action as a response to more or less similar problems regardless of the uniqueness of each individual patient (Ng Yoon Mooi, 2008). This aspect was reinforced by Rashidah Mohamed (2006) when she noted student nurses, who would be trained nurses in future, rote-learned standard management interventions in handling specific nursing situations. The development of nursing care plans can, at least on paper, be evidence of some type of critical thinking. However, this is not a reliable indicator of the trained nurses' clinical reasoning abilities as standardized care plans and clinical skills can be memorized as sequences of actions. Moreover, those care plans may not get implemented as they are dependent on the charge personnel of the ward. When confronted with patient real-life clinical problems that are not "listed" in the nurses' standard operating procedures, it would affect the quality of care if the nurse is unable to consider her patient's context when following those standard operating procedures. The nurse may be placed in a dilemma to decide on the appropriate interventions and to carry out them since they have been nurtured on a diet of structured instructions during their training.

Lack of critical thinking may result in problems such as medication errors, which may arise if due consideration is not given to the individual context of a situation. In a study carried out to determine nurses' reported thinking during medication administration, it was established that the safe administration of medications was more than just a technical mechanical process. The results also showed that situations requiring dosage, timing or selection of specific medications indicated the participants' use of critical thinking and clinical judgment (Eisenhauer, Hurley & Dolan, 2007).

From a personal standpoint, this researcher had had the experience whereby the question of the presence of critical thinking as well as the attitude factor were brought into focus by the care-giver, the nurse tutor and the nursing sister involved in a ward critical incident (Refer to Appendix A). From this critical incident, this researcher could opine that the attitude factor is very individualistic while the thinking factor is under-explored in student nurse training.

Thinking need not be confined only to physical action. It also includes attitude and spoken words. The actions of thinking, writing, speaking, performing as well as attitude, could help to determine the quality factor in nursing care. But if one considers the passing rates of nursing schools in the Malaysian Nursing Board Registration Examinations, those student nurses who have passed, would be considered to have become qualified nurses as they have been certified to have undergone a rigorous diploma nurse training programme (Lembaga Jururawat Malaysia, 2010) where all those essential components of thinking, writing, speaking, performing as well as attitude have been learned either overtly or covertly. In this researcher's opinion, this may not be the case. Passing the Malaysian Nursing Board Registration Examinations does not guarantee the quality of the nursing care that the graduate diploma nurse will render to the patients (Malaysian Journal of Nursing Online News Portal, 2010). Invisible aspects of nursing such as decision-making and critical thinking will only be demonstrated when the graduate nurse is in actual nursing practice (Huber et al 2000). 98% of 42 students from this researcher's college who sat for the Malaysian Nursing Board Registration on 23 March 2010 had been successful (Lembaga Jururawat Malaysia,

2010). But then the examination was based on the old examination format whereby the questions were from the lower-order thinking skills. A total of 84 students from the same college sat for the Nursing Board Examination in December 2010 when the new format using higher-order thinking skills was used. With an extended revision time whereby questions were presented and discussed, this college recorded a 100% passes in that examination (Rosdalilah Zahari, 2011). In this researcher's personal opinion, this result could not reflect the critical thinking ability of the successful graduates as it could only be developed in stages (Elder & Paul, 1996). The presence of this thinking ability could only be established later when these new staff nurses start to work and a survey done in their respective work places.

Besides the diploma trained nurses, there are many graduate nurses who have entered the nursing profession through the four-year degree nursing programme. The question lies in whether having a degree in nursing makes one a better nurse when compared to a nurse with a diploma in nursing. Whether the nurses had been trained for three years in diploma nursing or four years in degree nursing, the point in question here is that there need to be more focus on their thinking skills. A matron of a public hospital gave an example of the trained nurses in her hospital giving health talks to in-patients on diabetic care management as it was a common condition at her hospital. The trained nurses, whether diploma or degree-trained, were "talking down" to their patients instead of looking into the perspective of each patient critically so that their health talks could be tailor-made to suit individual patient needs. Though, this may be the opinion of this particular matron, what she had observed appeared to support the findings of Ng Yoon

Mooi (2008) regarding the superficiality of the thinking of student nurses who are going to be trained nurses. The thinking skills of these nurses need to be looked into in order to improve nursing practice.

This seems to hold true for the current Malaysian nursing scenario. In a recent national nursing workshop held to identify the challenges in resolving the theory-practice gap, related issues such as theory not being integrated into practice resulting in a gap between service and academics had been identified (National Nursing Workshop, 2014). To resolve this issue, efforts had to be centred on improving the quality of theoretical and practical skills and that nurses should “practice to the full extent of their education and training” and that they “should achieve higher levels of education and training through an improved education system that promotes seamless academic progression” (Wan Marina, 2014). This was further reinforced by Kathijah Lim Abdullah (2014) who emphasized a need to develop nurses who “are able to think critically and question what they and others do”, nurses who “have the ability and motivation to seek answers to these questions and bring practice forward and who have the confidence to resist pressure to conform to traditional ways to practice”

This researcher was interested to conduct this study to know the stage of critical thinking skills of diploma nurses as these thinking skills will to a certain extent, influence their behavior and attitudes toward their patients (Hoffman & Elwin, 2003).

This researcher selected to carry out a case study focusing on diabetic care management due to the growing concern pertaining to diabetes mellitus. The prevalence of diabetes mellitus in Malaysia was found to be 8.2% in the National Health and Morbidity Survey in 1997 when compared to the same survey carried out in 1986. (Rugayah Bakri, 2007). This indicated that diabetes, as a growing health concern in Malaysia, warrants the strengthening of its prevention and control programmes. Diabetes, being a debilitating disease, requires the patient to be given prompt and adequate treatment to prevent or delay complications as the alarming socioeconomic implications of this disease remain a major challenge. Health care professionals have an important role in educating the patients, their relatives and the public in an effort to get full co-operation from patients for their treatment compliance or adherence.

Most of the problems and issues discussed are much related to the problem of lack of critical thinking among the student nurses in their training practice. While this is a significant issue to be addressed in the research problem, there is a need to discuss and address it as a lack of critical thinking will impact on the students albeit the future registered nurses, in relation to academic knowledge and skills to enhance their search for improvement through evidence-based nursing practice. As a nurse and nurse educator, this researcher felt that she could contribute to the aspect of nursing care for the diabetic patient through this study on critical thinking among the trained nurses.