Actual and Ideal Entrustable Professional Activities of Newly Graduated Nurses in Thailand as Perceived by Both Educators and Users

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Abstract— This descriptive research aimed to study both the perceived Actual and expected Ideal levels of Entrustable Professional Activities (EPAs) across a range of skills required of new nurses in Thailand (graduated within the past 2 years). The instrument used is a questionnaire consisting of 147 specific EPAs scored on a 5-point Likert scale. 15 experienced nurses (users) and 15 graduate program instructors (nurse educators) were asked to provide Actual scores in line with their overall perceptions of the level demonstrated by newly graduated nurses for each of the EPAs in actual practice. The same participants were also asked to provide Ideal scores in line with their overall expectations of the level for each of the EPAs that should be held upon graduation. To collect the data from all 30 participants (15 users and 15 nurse educators), the Delphi technique was used. Data analysis was conducted via median and paired t-test. The results show that the Actual EPAs were most commonly perceived to be at a level 4, followed by levels 3, 5, and 2, respectively. None of the participants perceived any of the EPAs to be at level 1. The perspectives of the users and the nurse educators show that expected Ideal levels of EPAs among the new nurses is consistently higher than Actual levels with a statistical significance at the level of 0.01. In conclusion, for the safety of clients, nurses measuring below an Actual level 4 should receive more practice before being released to work with patients, both in educational institutions and in clinics.

Keywords— Entrustable professional activities, graduated nurses, perception, psychomotor skill, nursing competencies.

I. INTRODUCTION

The required levels of each Entrustable Professional Activities (EPAs) of Thai Nursing and Midwifery Professionals who graduated from undergraduate programs is clearly defined by the Thai Nursing Council which has a role in quality control of nursing education institutions in the production of nurses. The curriculum to achieve this is regulated by the Office of the Higher Education Commission in Thailand, which has a role to control the quality of education at the bachelor degree level. Therefore, nursing education institutions need to have a curriculum management process in place so that nursing graduates achieve a minimum level of skill in each of the EPAs. Therefore, upon graduation, new nurses are expected to meet that minimum level in actual practice. To be considered to be at a professional level of competency, a newly graduated nurse must reach a minimum of level 4 (National Education Personnel Health Development Foundation, 2017).

The nursing education institutes must have curriculum administration and learning and teaching processes for graduated nurses have meet required competencies and expected characteristics. For the purposes of this present study, new nurses are those who have graduated within the past 2 years. Despite having completed their education, nurses still require guidance to be able to apply learned knowledge to actual practice. Due to the lack of tangible experience, nurses at this stage are really only qualified to perform basic nursing practices without supervision (Benner, 1984). This may be the cause of the gap between expectation and actual realized skill levels of new graduates (Anema & McCoy, 2010). The resulting gap often leads to a situation where newly hired nurses do not receive satisfactory evaluations of EPAs from more experienced clinical nurses. The Thai Nursing experience has found that experienced clinical nurses rate their satisfaction with newly graduated nurses as only moderate to good (with very good being the ideal) (Phaosoonthorn & Aumtani, 2008). Findings from a prior study have demonstrated that the newly graduated nurses still lack tangible work experience, have difficulty applying knowledge learned in the classroom to real life situations and feel stress associated with changing roles from nursing students to professional nurses (Kanhadilok, Punsumreung & Malai, 2017). This is consistent with the findings of other research that identified problems often found with recent graduates of nursing programs 1). New graduated nurses have limitations in applying knowledge 2). New graduates have limited skills in problem solving, leadership, communication and critical thinking. 3). Newly graduated nurses are hesitant in facing clinical situations when starting work. 4). Nurses on duty must spend time helping new nurses adjust from being students to professional nurses, and 5). The nursing department needs a lot of time and money during the first year to train new graduates to get the clinical skills they need (Lowden, Hall, Elloit & Lewin, 2011).

The above problems are perceived as being common within the Thai nursing profession. Thus, Thai nursing educational institutes and nursing departments are continuously trying to minimize these issues through the close monitoring of EPA development of new nurses. Towards this end, Thai nursing educational institutes have developed learning and teaching processes and focused on experience

training for nursing students to develop skills that will prepare students to be able to make the transition from student to clinical nurse (Anema & McCoy, 2010; Leelakraiwan, Sayawat, Duangbubha, Saedkong & Pitschart, 2019).

As for the nursing services, there is currently a nursing mentor system in place that is intended to help teach and give advice to new nurses in order to assist with the transition from student to practicing nurse as well as mitigate the stress caused by the nature of nursing work. However, bridging the gap between what is learned in school and what is required to effectively practice nursing places a huge burden on the mentors. Some attempts have been made to address this gap. But, thus far, the attempts have focused on the perspective of a single party, either that of the nurse educators or that of the users. Despite attempts to insure nursing skills levels through the assessment of EPAs, this lack of coordination between the two parties may be a source of continued discrepancies between the skill levels of new nurses as perceived by the nurse educators and users. To address this issue, it is necessary to understand where the gaps are largest. A study of the full range of EPAs of the new nurses would shed some light on the professional competency level from the perspective of both users and nurse educators. These data are expected to be useful for informing both teaching strategies and for assigning jobs according to the professional skill levels.

II. OBJECTIVE

This study aimed to study the *Actual* and *Ideal* levels, and the difference between *Actual* and *Ideal* levels of EPAs of the new nurses in Thailand as perceived by users and nurse educators.

III. CONCEPTUAL FRAMEWORK

Entrustable Professional Activities (EPAs) have been developed in the medical arena to help with the transition of skills learned in theory to skills used in practice. An EPA is a task or responsibility that the educational institute references a minimum skill level allowing newly graduated nurses sufficient capacity to provide care without supervision (ten Cate, 2014). EPAs a corpus of skills necessary for the routine unsupervised work of professional nurses which must be observed and measurable. Therefore, the goal of achieving a higher measured level of an EPA is to be confident in the ability of nurses to carry out that specific skill without supervision (Englander, Flynn, Call, Carraccio, Cleary, Fulton & Aschenbrener, 2016). *Actual* EPAs refers to the level of psychomotor skills that at which new nurses can actually practice in the workplace. In contrast, *Ideal* EPAs refers to the level of psychomotor skills of the new nurses expected upon graduation. (ten Cate, Hart, Ankel, Busari, Englander, Glasgow & Wycliffe, 2016; ten Cate, 2013). This present study makes use of the concept of dividing each EPAs into 5 levels of proficiency (Amy, Scott, Caitlin, Jean, Mega & Jordan, 2016; ten Cate, 2014). At Level 1, a nurse is not able to perform an EPA without direct assistance. At Level 2, a nurse is able to perform an EPA with close supervision. At Level 3, a nurse is able to perform an EPA with a supervisor nearby that is ready to help immediately. At Level 4, a nurse is able to perform an EPA with a supervisor observing from a

distance. Finally, at Level 5 a nurse is able to perform and EPA with no need for supervision and is able to supervise others. This present study makes use of the Delphi technique with both users and nurse educators evaluate the level of each EPA for recently graduated Thai nurses, similar to previous studies. (Bhuyan, Miser, Dickson, Jarvis, Maxwell, Mazzone & Tuggy, 2014; Wagner & Reeves, 2015).

IV. METHOD

This present study is a descriptive research study that employs the Delphi technique to study the perceived level of EPAs of newly graduated Thai nurses.

Sample

It is generally accepted that a minimum of 15 participants are necessary for effective use of the Delphi technique (Macmillan, 1971). Thus, to ensure that perspectives of both parties are properly considered, the sample consists of 15 participants identified as nurse educators and 15 identified as users (total of 30 participants). The 15 participating nurse educators were drawn from nursing instructors currently working in a nursing educational institution with at least 10 years of combined experience working as a teacher and working in the clinic, who were nursing experts (Benner, 1984). Purposive sampling was used to ensure that there were 3 participants from each of the 5 formal nursing disciplines, including the program of Adult and Elderly Nursing, program of Midwifery, Children Nursing program, Community Nursing program, and Mental Health and Psychiatric nursing program. The resulting sample of 15 nurse educators were drawn from the public university, the private university and the College of Nursing of the Ministry of Public Health. To gain perspectives from a wider range of viewpoints, the 15 participating users as a professional nurse, who graduated more than 10 years ago and is now working in a ward within a hospital or clinic with a new nurse. There were 3 participants from each of the 5 nursing disciplines, which were drawn from the Regional Hospital, General hospital, and 5 state health promotion hospitals across 3 provinces.

Research Instrument

Instrument used in this present study is a two-part questionnaire. *Part 1* of the questionnaire gathers general information. *Part 2* of the questionnaire was developed from the experience manual of the Bachelor of Nursing students from the first year 1-4 of the 2 public universities, 2 private universities and 4 College of Nursing of the Ministry of Public Health, giving a total of 8 institutions covering the Northeast, Central region Northern and Southern Thailand. Each of these experience manuals contain a "pass/not pass" evaluation checklist which consists of a number of EPAs. The authors combined all eight checklists to create a closed-end questionnaire consisting of 147 distinct EPAs that cover all five nursing disciplines. Furthermore, based on the concepts of Amy et al (2516) and ten Cate (2014), rather than the original "pass/not pass" system, each of the EPAs was now measured on a 5-point Likert scale. The levels are defined as follows:

Level 1: not able to perform without direct assistance

Level 2: able to perform with close supervision

Level 3: able to perform with a supervisor nearby that is ready to help immediately

Level 4: able to perform with a supervisor observing from a distance

Level 5: able to perform with no need for supervision and able to supervise others

To examine its content validity and reliability, the questionnaire was evaluated by 3 nursing experts. The experts consisted of a Nursing Instructor from Khon Kaen University and 2 nurses who are head of their respective wards at Khon Kaen Hospital and Srinagarind Hospital respectively. The evaluation found the content validity index to be 0.997.

Data Collection

Data was collected from March 2019 to February 2020 utilizing the Delphi Technique (Macmillan, 1971). Data was divided into 3 rounds as follows:

Round 1: Three nursing experts established content validity.

Round 2: In order to determine the perceived *Actual* and expected *Ideal* levels of EPAs held by newly graduate nurses, the questionnaires were sent to 15 users and 15 nurse educators (total n=30), evenly divided across 5 specialist nursing programs (with 3 users and 3 nurse educators representing each of the 5 programs). The five specialist nursing programs consist of the Pediatric Nursing program, the Adult and Elderly Nursing program, the Community Nursing program, the Midwifery program, and the Mental Health and Psychiatric Nursing program. The questionnaires were sent back within 2 weeks. After that, the questionnaires were analyzed to find the mean, median and standard deviation of each EPA.

Round 3: The questionnaires were notated with the mean, median, and variance of each EPA as computed from the responses of all 30 participants. These notated questionnaires were then sent back to the same group of participants that had completed them in Round 2. The participants were asked to use this new information to either confirm their original score or provide a different answer. This round of questionnaires were returned within 2 weeks. Once all questionnaires were collected, a meeting of the research team was held to produce a final conclusion.

Data Analysis

To derive an overall grade for each EPA, the researchers calculated the median of scores across all 30 participants. A comparison of competency levels for each nursing skill between *Actual* performance and expected *Ideal* scores was made by using paired t-test statistics (all data displayed a normal distribution).

V. ETHICAL CONSIDERATION

This research study was approved by the Khon Kean University ethical committee, Thailand. The number of this approval is HE 612275, granted on October 2, 2019.

VI. RESULTS

The vast majority of participants were female (93.33%), with an average age of 50.53 ± 6.97 years (ranging from 38 to 66). There were 2 participants (6.66%) aged more than 61 years old who were nurse educators. Most of the participants graduated with a master degree (53.33%), and followed respectively by a bachelor degree and PhD (30.00% and 16.67% respectively). Most of them worked in public institutes (73.33%) (Table I)

TABLE I. General data of participants

Items	Number (30)	Percentage
gender		
female	28	93.33
male	2	6.66
age (years)		
38-50	17	56.67
51-60	11	36.67
61-66	2	6.66
Average age (years)	50.53±6.967	
highest education		
Bachelor degree	9	30.00
Master degree	16	53.33
PhD	5	16.67
working places		
Public	22	73.33
Private	8	26.67

From the corpus of 147 EPAs, 94 (63.95%) were perceived to be possessed at a Level 4. The remaining proportion of EPAs were divided among Level 3, Level 5 and Level 2 (31.29%, 4.08% and 0.68%) respectively. No EPAs were perceived to be at Level 1 (Table II). Only 6 of the 147 EPAs could be carried out at Level 5. Some examples include: hair washing, measuring and recording vital signs, and arranging various postures. Notably, these are skills that present little risk of harm if done wrong and are among the more frequent tasks, often encountered by nurses on a daily basis.

An EPA measured at Level 4 is a psychomotor skill that can be practiced with a supervisor observing from a distance and only stepping in to provide assistance when needed. Many of the 94 *Actual* EPAs perceived to be at this level are similarly basic nursing skills that present little risk of harm if done wrong. Some examples include: caring for clients' comfort, disease prevention and control, collection of secretion and specimens, basic care and procedure that is not complicated, which are nursing skills required across all 5 of the specialist nursing programs.

An EPA measured at Level 3 is a psychomotor skill that can be performed with a supervisor nearby that is ready to help immediately. Of the 45 *Actual* EPAs perceived to be at this level, some still represent basic skills. However, most are skills that require additional practice and expertise, such as a new client admission, and discharge, physical examination, lung knocking, and eye washing.

An EPA measured at Level 2 is a skill that can performed with close supervision. Only one *Actual* EPA was perceived to be at this level: arranging and delivering surgical instruments.

For the *Ideal* level of EPAs expected upon graduation, it was found that most are expected to be practiced at a Level 5 (83.67%) and the remainder at a Level 4 (16.33%). All expected *Ideal* levels of EPAs were at level 4 or greater, thus Levels 1 to 3 are unrepresented (Table II).

TABLE II. The level of EPAs of new nurses based on the perspective of the graduate users and the nurse educators.

Level of EPAs	Actual Number(%)	Ideal Number(%)
Level 1	0	0
Level 2	1(0.68)	0
Level 3	46(31.29)	0
Level 4	94(63.95)	24(16.33)
Level 5	6(4.08)	123(83.67)
Total	147 (100)	147 (100)

All of EPAs (n=147) showed significant differences between *Actual* levels and *Ideal* levels (t = 2.644 - 8.449, P ≤ .01).

VII. DISCUSSION

To attain a reasonable level of proficiency, almost all EPAs related to nursing and midwifery require repeated training or multiple instances of practical, on the job, experience. More opportunity to practice will increase proficiency. However, opportunities for some skills can be hard to arrange, For instance, because some skills also need to be practiced by medical students who are given preference for training opportunities, nursing students have fewer chances to practices them. Some examples of these skills are CPR, CPR in newborns, wart or corn removal, excision at the no dangerous area, nail avulsion, local anesthesia administration, and incision and drainage, etc.

The skills at level 4 (64.63% of the actual EPAs in this present study) can be carried out with no close supervision, allowing supervisors to assign these activities with safety and no need for close supervision (Mulder et al, 2010). Level 4 is also the standard that is expected by the nursing educational institutes (National Education Personnel Health Development Foundation, 2017). On the other hand, skills at level 3 (30.61% of the actual EPAs in this present study) must be carried out with the supervisor ready to step in. These actual skills found to be at a Level 3 or Level 2 are the areas where newly graduated require additional experience in practice. But, because students are required to have a practicum in all five nursing programs, the time available to practice in their specific area of study is considerably reduced.

For instance, *surgical instrument handling* (Level 2) is such a unique skill that it requires substantial additional practice to master. Thus, new nurses must receive specific additional training if they are expected to work in the operating room. Depending on the duration and frequency of such activities, even new nurses who have worked in the operating room for 1-2 years may not yet have developed sufficient fluency or expertise if such assignments are sporadic.

As skill is built by practical experience, nursing student need as much exposure to real situations as possible. If we expect newly graduated nurses to attain a Level 4 or 5, additional time and learning opportunities must be provided for those particular skills. Intuitively, one could reasonably argue that the performance of new graduated nurses can be progress continuously through each level (1 through 5) given enough duration of training and practical experience. If a new nurse has the opportunity to practice skills and the opportunity to repeatedly do that skill, it will lead to learning and skills. But if practice is not applied or is not implemented in practice continuously, then skills will not occur (ten Cate, 2013; Haberlandt, 1997). However, even if nursing students practice in a laboratory setting and have practicum experience under close supervision in hospital wards, they still require hands on experience with actual patients before they can truly qualify to work on their own. This qualitative difference between experience in a lab and experience on the job might explain the reason for the gap between Ideal and actual levels of EPAs. Measuring Ideal EPAs in a lab does no fully inform how newly graduated nurses will measure with regard to actual EPAs.

In recognition of the challenge presented in making the transition from student to practicing nurse, a mentoring system was put into place in order to provide additional training to new Thai nurses during their first 2 years. Mentoring is provided until new nurses have demonstrated that they can perform an EPA without supervision. Given this, it was entirely expected that actual work performance of new nurses would be lower than expected ideal performance. This leads to the argument that teaching and learning of nursing must take place both in the classroom and the clinic. An essential component of nursing education must include practice in both the laboratory and clinical environments.

Future Study

EPAs should be more closely examined separately according to each of the specific formal nursing disciplines. This will provide deeper insight into where focus should be placed on EPAs in order to produce new graduates with actual levels of 4 and 5 in each field of nursing.

The Implications of Study Results

Graduate users and nurse educators must understand the professional competency level of new nurses. They must have an understanding of which skills or activities will be assigned to new nurses based on their skill level and also understand when to trust a new nurse to do nursing activities freely and when to provide assistance or advice. Both users and educators must prepare activities or experiences that enable new nurses to participate actively. This will require an alteration of perspective, transitioning their roles from mere knowledge transfer towards being active facilitators of an environment that provides new nurses with many more opportunities to practice their nursing skills. More practice will foster a higher level of competency in skills critical to modern healthcare.

VIII. CONCLUSION

The newly graduated nurses should be continuously assessed both in educational institutions and in clinics, with any measured EPAs below a Level 4 requiring additional training to increase proficiency before being released for actual work requiring that specific skill.

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