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Applicable Performance Criteria to Evaluate Clinical Nurses

Emin KAHYA[*]
Nurten ORAL[**]

ABSTRACT

The assessment of nurse performance plays an important role in guaranteeing high quality clinic care to achieve desired patient outcomes. Although many performance criteria have been suggested in the evaluation literature, none is universally accepted for nurse evaluation. The purpose of this study is to select and weight the applicable performance criteria to assess the clinical nurses in a hospital. Some performance criteria were generated from previously cited literature. Twenty-seven task performance and eleven contextual criteria were identified in eight categories. A questionnaire containing 38 criteria was designed to determine the weight of each criterion for nurse evaluation. It was distributed to all the clinical charge nurses in a hospital and they were asked to assign an appropriate weight to each criterion. The findings indicate that the most convenient categories are "Clinical skill", "Professional skill" and "Contextual performance".

Keywords: *Nurse, Performance Criterion, Competency, Performance Evaluation, Contextual Performance*

Klinik Hemşirelerini Değerlemek İçin Uygulanabilir Performans Kriterleri

ÖZ

Hemşire performans değerlemesi, arzulanır hasta sonuçlarını başarmak için yüksek kaliteli klinik tedavisini garantilemede önemli bir rol oynar. Değerleme literatüründe pek çok performans değerleme kriteri önerilmesine rağmen, hiçbiri hemşire değerlemesi için evrensel kabul edilmiş değildir. Bu çalışmanın amacı, bir hastanede klinik hemşireleri değerlemek için uygulanabilir performans kriterlerini seçmek ve ağırlıklandırmaktır. Bazı performans kriterleri, ilgili yazından elde edilmiştir. 27 görev ve 11 bağlamsal performans kriteri 8 kategoride tanımlanmıştır. 38 kriteri kapsayan anket, hemşire değerleme için, her bir kriterin ağırlığını belirlemek amacıyla tasarlanmıştır. Anket, bir hastanedeki tüm klinik sorumlu hemşirelere dağıtılmış ve kendilerinde her kriter için uygun bir ağırlık ataması rica edilmiştir. Bulgular, en uygun kategorilerin "Klinik becerisi", "Mesleki beceri" ve "Bağlamsal performans" olduğunu işaret etmiştir.

Anahtar Kelimeler: *Hemşire, Performans Kriteri, Yetkinlik, Performans Değerleme, Bağlamsal Performans*

I. INTRODUCTION

Along with the increasing complexity of nursing services, hospital employers are demanding qualified and competent staff nurses for high quality clinical practices (Tzeng 2004). Ensuring staff competency is a critical function of today's nurse manager. It reduces the risk of error and improves the quality of care (Taylor 2000).

According to Webster, competence is defined as "having requisite or adequate ability or qualities". This definition implies that a standard for the requisite ability and quality should

[*] *Prof. Dr., Eskisehir Osmangazi University, Engineering and Architecture Faculty, Department of Industrial Engineering, Eskisehir, ekahya@ogu.edu.tr*
[**] *Nursing Manager, Eskişehir Osmangazi Hospital, Eskişehir, noral@ogu.edu.tr*

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be predetermined and defined. Unit specific nursing standards of care and practice fulfill these criteria (Western 1994). Competency has been defined as "the ability to perform the task with desirable outcomes under the varied circumstances of the real world (Benner 1982; Dunn et al. 2000). The Manpower Service Commission described competency as a "description of something which a person who works in a given occupational area should be able to do" (Watkins 2000). Competence, competency, and competencies have been used in literature to describe various clinical or business skills as related to nurses' performance, including quality of care and productivity (Tzeng, Ketefian 2003). Performance is clearly concerned with demonstrated ability to do something. The relationship between competence and performance is unclear (O'Connor et al. 2001) not only in nursing but also in the fields of medicine. Watson et al. (2002) discussed difference between competence and performance. While (1994) made an important distinction between the concepts of "competence" and "performance". She concluded that since competence is concerned with perceived skills, it can not be directly measured, whereas performance as actual situated behavior is open to measurement and reflects what nurses actually do in clinical practice (Robb et al. 2002). Performance is a more observable concept. Performance evaluation is a measurement of efficiency, competency, effectiveness of the nursing process, and the activities used by the individual nurse in the care of patients.

Some authors (e.g. Lin et al. 2010; Tzeng 2003; Tzeng, Ketefian 2003; Zhang et al. 2001) have identified underlying competencies which contribute to effective nursing performance. Watson et al. (2002) investigated the evidence for use of clinical competence assessment in nursing. A review using systematic methods of literature pertaining to clinical competence was conducted on defined dates, databases, and search terms. It is highlighted that despite a 40-year history of researching and developing an instrument for measurement of clinical competencies in nursing, there is none that is universally accepted for this purpose. In these studies, basic competencies have frequently been categorized in the following groups; professional/technical skill, clinical skill, interpersonal communication, critical problem solving, ethic, leadership. Other competencies depend on the type, aim, policy of health organization, the health knowledge level of the manager.

One challenge health care manager face is the evaluation of work performance. Underlying the challenge is the struggle for objective and fair work evaluations (Timmreck 1998). An apparent confusion exists regarding how performance is distinguished from competence (Fitzpatrick et al. 1994). Performance word (criterion) is a method of measuring achievement of competency. The reliability of the performance evaluation, basically, depends on the competencies chosen. The evaluation system is used for two critical purposes; (i) to justify wage increases linked to salary, rewards, bonuses and promotion, and (ii) to determine weak and strong behaviors of staff in an assessment period. The health organizations should support training programs to improve staff' deficient areas. Qualified and competent nurses provide high quality clinical care and then enhanced patients because skilled nurses are close to their patients and able to handle their needs. The basic problem is which criteria can be used to evaluate a nurse. The criteria vary from two to seven for each competency. One of the last studies defining the performance criteria is that Zhang et al. (2001) investigated the underlying competencies which contributed to effective nursing performance. They determined 47 successful criteria classified in ten groups.

There are many studies investigating the performance criteria to assess clinical nurses and developing a tool together with key literature and expert opinion. Several studies have reported on research into the testing of a tool's validity and reliability implementing such a tool for clinically based assessment and integrative reviews of the literature on nursing competency standards (Halcomb et al. 2016; Chiarella et al. 2008; Robb et al. 2002).

Schwirian (1981) used factor analysis to develop a six dimension scale of performance, which incorporated 52 behaviors and skills in six underlying dimensions; leadership, critical care, teaching/collaboration, planning/evaluation, interpersonal relations/communication, and professional development (Utley-Smith 2004).

Fitzpatrick et al. (1997) developed a scale to measure clinical nurse performance by combining the Slater Nursing Competencies Rating Scale, which consists of 84 observable items arranged into six groups (psychosocial individual, psychosocial group, physical, general, communication, and professional implications), with key literature and the use of expert opinion. They classified the criteria into seven groups; (i) physical, (ii) psychosocial, (iii) professional, (iv) promotion of health and teaching skills, (v) care management skill and organization of workload, (vii) communication skills, and (viii) use of the nursing process in planning care. The scale was tested in three separate institutions in the Southeast of England to look at the performance.

Timmreck (1989) investigated how hospitals assess work performance of employees and how their performance appraisal systems are managed (e.g. How are the employees informed of the performance appraisal results?) in 47 small rural hospitals in the Western United States. The research findings showed that in some hospitals one purpose for conducting a performance appraisal was to increase quality of care.

Robb et al. (2002) presented a critical review of the research, which has been carried out to explore the measurement of nurses' clinical performance using the criteria stipulated by the Cochrane Research Database. They deduced that although several thorough pieces of research have been carried out and a variety of tools developed, none has met with universal approval.

A job evaluation (NHS JE – National Health Service Job Evaluation) and pay (AfC – Agenda for Change) systems and also staff evaluation (KSF – Knowledge and Skill Framework) tool was developed by Department of Health in UK (www.dh.gov.uk). The NHS KSF tool (http://www.nhsemployers.org) provides a means of recognizing the skills and knowledge that a person needs to apply to be effective in a particular NHS post. It consists of six core dimensions and 24 specific dimensions. These dimensions have been developed so as to assess all the staff in health organization.

Ko et al. (2007) described a scale to measure nurses performance in the hospital setting. The scale consisted of 4 factors (competency, attitude, willingness to improve, and application of nursing process) and a total of 17 items. In order to test validity and reliability, data was collected from 1.966 nurses in twenty eight hospitals. Data analysis including descriptive statistics, factor analysis and reliability coefficients was satisfied by the SAS 8.0 software.

Osman et al. (2011) developed a data envelopment analysis (model for nurse performance evaluation. The validity of the model was tested on thirty-two nurses in an intensive care unit at one of the most recognized hospitals in Lebanon.

Park and Lee (2011) developed a performance appraisal tool to assess the registered nurses in the neonatal intensive care unit. They identified 76 indicators classified into 4 domains of nursing: professional practice (49 items), responsibility of education (5 items), research (3 items) and leadership (19 items). The tool would be very to assess nurse performance and facilitate the professional growth of nurses.

Lee (2016) developed a performance appraisal tool for postoperative anesthesia care unit nurses. Subsequent to a review of the literature on nursing performance of nurses, a questionnaire including 63 items was developed. Through factor analysis, criteria were derived in 3 domains with 8 factors; a) Professional nursing practice (31 items) (2 factors) (High frequency nursing practice, Low frequency nursing practice), b) Education & Management (20 items) (4 factors) (Education & communication, Management of drug & equipment, Management of material & safety, Management of infection) and c) Research & Competency (12 items) (2 factor) (Research, Competency).

Aslan and Yıldırım (2017) developed a "Self-Report Contextual Performance Scale" which measures contextual performance levels of nurses working at hospitals. The target population was 500 nurses from two hospitals (one public and one private) on the European side of Istanbul. Exploratory factor analysis of the scale showed a Kaiser-Meyer Olkin (KMO) coefficient of 0.97 and the result of the Barlett test was found to be significant. It was noticed that items were best distributed around two factors. The Cronbach's alpha coefficient was found to be 0.97 for the total scale.

Other essential studies were presented by authors (Schwirian 1978; Fitzpatrick et al. 1994; Riggio, Taylor 2000; Zhang et al. 2001; Tzeng 2004; Kalb et al. 2006; Chiarella et al. 2008; Lin et al. 2010; Nicholson et al. 2013; Halcomb et al. 2016).

Job performance is measured in terms of each employee's **task and contextual performance**. Task performance relates to the proficiencies with which incumbents perform core technical activities that are important for their jobs (Arvey 1998). Contextual performance is defined as individual efforts that are not directly related to their main task function but are important because they shape the organizational, social, and psychological context that serves as the critical catalyst for task activities and processes (Werner 2000). In nursing literature, the authors have revealed the performance criteria as the behaviors on nursing competencies to measure the effectiveness of a nurse. In other words, job performance has been measured by the criteria coming from task performance set. Any study considering the contextual performance, and classifying these criteria in structural groups has not been seen.

Applicable measures and their weights for nurse evaluation depend on the type of hospital and care service and the preferences of the managers. Weighting assures equitable results when the relative importance is compared. Not weighting criteria means that each criterion will have the same relative importance on performance, which is never the case. To produce the weights, each criterion is assigned a proportional value – a percentage of the total – of the performance evaluation plan. One way to weight the criteria is to let each committee member offer his/her opinion of a percentage distribution. The average of the weights to find the consensus value for each criterion is calculated, which is named as Delphi technique.

In this study, the purpose is to select and weight the applicable performance criteria by using Delphi technique in a hospital. Some performance criteria were generated from previously cited literature. Twenty-seven task performance and eleven contextual criteria were identified in eight categories. A questionnaire containing 38 criteria was designed to determine the weight of each criterion for nurse evaluation. It was distributed to all the clinical charge nurses in a hospital and they were asked to assign an appropriate weight to each criterion. The average weights for each criterion to assess the clinical nurses was determined.

II. THE NATURE OF THE TASK AND CONTEXTUAL PERFORMANCE

Performance evaluation is the process that compares employees' job performance with job standards to measure how well the job is performed. There are two types of job performance: task performance and contextual performance.

In the current work psychology literature, task performance is defined as "the proficiency with which incumbents perform activities that are formally recognized as part of their jobs; activities that contribute to the organization's technical core either directly by implementing a part of its technological process, or indirectly by providing it with needed materials or services" (Borman, Motowidlo 1993). The task performance involves job related aspects that a particular employee is supposed to do at a given job. The job activities may include the quantity of work, quality of work done, speed of performing tasks, accuracy in work done and variety of the tasks being done or performed by the employee (Tufail et al. 2017; Edwards et al. 2008). Appropriate items to measure the efficiency of an employee depend on the nature of a job. In healthcare units, task performance is assessed by such items as "Managing nursing activities in time" and "Delivering well-prepared or careful nursing service to patient".

Contextual performance is defined as individual efforts that are not directly related to their main task function but are important because they shape the organizational, social, and psychological context that serve as the critical catalyst for task activities and processes (Werner 2000). Contextual performance including citizenship behaviour entails for activities other than core job and is mostly related to factors such as peers, work place and supervision. Common examples of contextual performance behaviors include helping coworkers, volunteering for task, and defending the organization (Griffin et al. 2000). The activities such as helping and supporting peers at work place, showing keen and learning attitude towards assigned tasks, defending and obeying supervision available at work, doing tasks for others which are not one's responsibility, sharing of information and managing work and responsibilities willingly (Tufail et al. 2017; Van Scotter 2000).

Coleman and Borman (2000) settled these behaviors on three groups;

1. Interpersonal citizenship: Behaviors that assist, support, and develop organization members through cooperative and facilitative efforts that go beyond expectations includes two sub-groups.

- **i. Altruism**: Assisting and supporting organization members such as "helping other organization members".
- **ii. Conscientiousness**: Assisting and supporting the performance of organization members through cooperation and facilitation efforts that go beyond expectations such as "Cooperating with other organization members".

2. Organizational citizenship: Citizenship behaviors that demonstrate commitment to the organization through allegiance and loyalty to the organization and organization objectives, and compliance with organizational rules, policies, and procedures include two sub-groups.

- **i. Allegiance/Loyalty**: Assisting and supporting the organization by demonstrating a personal commitment to the organization such as "Endorsing, supporting, or defending organizational objectives".
- **ii. Compliance**: Confirming and adhering to the organizational rules, policies, and procedures, demonstrating impersonal behavioral commitment to the organization and organizational objective such as "Following organizational rules and procedures".

3. Job/Task Conscientiousness (job dedication) : Extra efforts that go beyond role requirements, demonstrating dedication to the job, persistence, and the desire to maximize one's own job performance such as "Putting extra effort on own job".

Although task performance traditionally has received more attention than contextual performance, researchers have begun to empirically demonstrate that contextual performance yields a competitive advantage for organizations (Witt et al. 2002). Such helpful, considerate, and cooperative behaviors are expected to increase the effectiveness of workers, managers and work groups. They also improve organizational coordination by reducing friction among organizational members. Innovative and voluntary behaviors enhance an organization's ability to solve unanticipated problems and adapt to change.

III. METHOD

The objective of this article is to determine the weights of the performance criteria by using Delphi technique. We conducted a pilot study on a nurse performance evaluation system in a hospital. The hospital, which is the primary teaching and research facility, serves the population of near cities.

3.1. Criteria

In nurse performance evaluation literature, the performance criteria have focused on how the nurses achieve the nursing activities, that is named as task performance. However, contextual behaviors serve as a catalyst for task activities, contributing to better relationship among employees. The majority of manufacturing and service companies tend to add contextual performance to performance evaluation systems. Contextual behaviors have critical importance in health systems, and should settle in performance evaluation system.

The first stage of the study focused on a literature review regarding performance evaluation tools used in nursing to identify appropriate items for nursing activities. The items proving the most accurate and representative description of effective nurse performance in various clinical settings were derived from some cited studies (Liou, Cheng 2014; Ko et al. 2007; Meretoja et al. 2004; O'Connor et al. 2001; Zhang et al. 2001; Fitzpatrick et al. 1997; Schwirian 1978) and accessible tools (NHS KSF tool (www.dh.gov.uk)). Widely highlighted 27 task-oriented items focused on enhanced patient satisfaction, and quality of care were identified to measure nurse performance, and classified into seven categories.

Thirty-one contextual performance criteria (Appendix 1) were generated from several studies (Moorman, Wells 2003; Van Scotter 2000; Coloman, Borman 2000; Goodman, Svyantek 1999), and some applications. After achieved a consensus, eleven of them were included into contextual performance set. A total of 38 items were selected for the tool. Some minor refinements of items wording to enhance readability were incorporated into the final version (see Appendix 2) (Kahya, Oral 2018).

3.2. Participants

The participants in this study were comprised of the charge nurses of intensive care (8), medical clinics (13), surgical clinics (12), emergency, and operating room units so that they can predict the required criteria much more than the nurses. In order to determine the weights of the criteria, a questionnaire containing all 38 criteria under eight main criteria groups and personal information was designed. A cover sheet detailed instructions on how to apply the weight was also attached to questionnaire and was distributed to all (35) charge nurses in the hospital of Eskişehir Osmangazi University. They were asked to assign a

weight to the main criterion from 0 to 100% such that the total weight would be 100%. Thirty-one questionnaires were returned for a response rate of 88.57%.

3.3. Ethical Considerations

Second author, the nursing manager, briefed the hospital management about the aim and the procedure of the study. During the distribution of the questionnaires to charge nurses, it was guaranteed that their responses would remain confidential and anonymous, and also each one had the right not to respond to the questionnaire.

IV. RESULTS

The analysis of the data including descriptive statistics, was performed using SPSS software version 24. "One-way ANOVA: Post Hoc Multiple Comparison" Tukey test analyze, with 95% confidence level was employed to test whether the weights were significantly different between clinics of each criterion category.

The demographic characteristics were shown in Table 1. All participants were female. The majority has served in available clinic as a charge nurse for more than 6 years (9.53±5.39), with ages ranging from 28 to 54 years (38.72 ±5.19). The average lengths are 18.66 years for nursing experience, and 9.53 years for clinical supervisor experience. Among them, 16 (50%) had associate degree, 12 (37.5%) had graduated from college, and 4 (12.5%) were in a nursing master's degree program.

Table 1. General Characteristics of Participants

Characteristics	Levels	Number
Clinics	Medical clinics	12
	Surgical clinics	12
	Intensive care	7
	No answer	4
Education	Masters degree	3
	B.Sc. graduate	12
	Associate degree program graduate	16
	Nursing occupational high school	-
Working experience	1-10 years	2
	11-20 years	21
	21- years	8
Working experience as a charge nurse	1-5 years	7
	6-10 years	14
	11- years	10

4.1. The Weights of Main Criteria

As can be seen from Table 2, the average weights of the main criteria indicate that the order for main criteria was clinical skill (21.53%), professional skill (16.05%), contextual (12.97%), problem solving, interpersonal skill, teamwork, ethic, and leadership. The weights for four criteria; interpersonal skill, problem solving, professional ethic, and teamwork, were almost same (10%). Thus, the most important criteria to evaluate the nurses were clinical skill, professional skill, contextual, and problem solving.

Table 2. Weights for Main Criteria

Criterion Category	Mean	SD	Minimum	Maximum
Contextual	12.97	7.45	5	40
Professional skill	16.05	5.15	5	30
Clinical skill	21.53	6.92	10	40
Interpersonal skill	10.94	3.78	4	20
Problem solving	11.81	4.29	5	20
Professional ethic	9.00	3.03	3	15
Teamwork	10.32	3.47	4	20
Leadership	7.39	2.90	3	13

In many study (Tzeng 2003), exploring and comparing the scores of competencies or criteria used to evaluate the nurses, first four items have been commonly pointed out among the most preferred items. It is considerable result that one contextual performance criterion is one of the most needed criteria that have been neglected at related investigations. In a humanistic work role such a nursing, being able to do a task is not in itself enough; the task must be carried out by individuals who are able to contextualize care by respecting the patients' own values, cultural beliefs and approaches to health and ill-health (Watkins 2000).

4.2. The Effect of Clinic Type on Weighting

In order to investigate the effect of clinic type on criterion weighting, clinics were grouped into three categories; medical (14), surgical (10) and intensive care (7) units. Average weights for each category clinic were given in Table 3. The results showed that the nurses from different units were affected from the clinical conditions when giving a decision. "Clinical skill" and "Professional skill" were the most essential criteria for each of three type clinics. The order of the others changed among clinic types. Although problem solving was much more essential (third) for medical clinics, contextual performance was much more important in surgical and intensive care units. It is pointed out that teamwork was one of the first four categories in intensive care units.

Table 3. Average Weights for Clinic Categories

Criterion	Medical	Surgical	Intensive Care
Contextual	10,36	16,20	13.57
Professional skill	15,86	16,80	15.36
Clinical skill	23,36	18,80	21.79
Interpersonal skill	12,21	9,60	10.29
Problem solving	12,71	11,60	10.29
Professional ethic	10,00	9,10	6.86
Teamwork	9,57	9,60	12.86
Leadership	5,93	8,30	9.00

The results of the "One-way ANOVA: Post Hoc Multiple Comparison" Tukey test analyze showed that there was no significant difference between clinic types (all $p>0.05$).

4.3. The Weights of Criteria

Participants were asked to share out the main criterion weight to its criteria (Table 4). After assigned the weights, it was seen that each charge nurse tended to increase the weights of some criteria which were enhanced but differences among the weights for each criterion vary till 5%.

The most important five criteria were found, from high to low mean values as follows:

- "Identify and assessing of the patient's problems" in professional skill group,
- "General Professional skill" in professional skill group,
- "Planning patient care according to individual needs" in clinical skill group,
- "Identifying sudden changes related to the patient's condition" in problem solving group,
- "Managing the nursing activities in time" in clinical skill group,

The ranking of the criteria demonstrates that criteria in professional skill, clinical skill, problem solving are the most ranked; interpersonal skill, ethic, and teamwork are intermediate required criteria, and the ranks of the others; leadership and contextual skill are greater than 20, in general.

Table 4. All the Weights

Category	Criterion	Weight
Contextual	Being thrifty	0.86
	Not complaining about organizational conditions	1.29
	Not keeping others engaged in individual problems	1.20
	Having absent	1.33
	Participating in training meeting	0.79
	Having a neat, clean appearance	0.91
	Taking responsibility for the tasks.	1.67
	Working hard with extra effort	1.42
	Working systematically	1.39
	Engaging in self-development to improve own effectiveness	0.96
	Obeying cleanliness rules	1.16
Professional skill	General Professional skill	**4.62**
	Identify and assessing of the patient's problems	**5.19**
	Calmness	2.81
	Keeping nursing equipment in good condition	3.43
Clinical skill	Planning patient care according to individual needs	**4.56**
	Managing the nursing activities in time	**4.40**
	Delivering well-prepared or careful nursing service to the patient	4.16
	Monitoring the patient's condition constantly and record his/her situation	3.84
	Making an effort to enhance his/her well-being	2.14
	Endorsing and following clinical rules, procedures and hospital policies	2.42
Interpersonal skill	Expressing enthusiasm for nursing work	3.92
	Cooperating with supervisor nurse	3.16
	Behaving in a friendly manner	3.86
Problem solving	Identifying sudden changes related to the patient's condition	**4.56**
	Solving speedy the clinical problems	4.36
	Taking the initiative to solve a work problem	2.89
Professional ethic	Attitude to the patient and his/her family	3.10
	Confidentially	3.64
	Giving information to the patient and his/her family	2.26
Teamwork	Cooperating with the members of other teams	2.44
	Engaging responsibly in meetings and group activities	3.40
	Giving feedback to colleagues in a constructive way	2.83
	Engaging in and contributing to research-based practices	1.65
Leadership	Motivating the other nurses	2.03
	Coaching others in duties	1.78
	Having a supervisor attributes	1.39
	Helping to the entry-to-practice beginning level nurses	2.19

V. CONCLUSION

In this study, we investigated the weights of most preferable performance criteria to measure the performance of the clinical nurses by using a questionnaire to charge nurses in a medial center. The criteria weights were found with traditional method. It advanced the work of previous researchers in exploring the attributes of nurses prepared to meet both current and future demands of the healthcare organizations. The results indicated that "clinical skill" and "professional skill" categories had higher importance than the others. In several studies (Tzeng, Ketefian 2003) where exploring and comparing the scores of competencies or items used to assess nurse performance, the first four items have been commonly pointed out among the most preferred skills. Our results were different but overlapped because of the fact that six of items took place in the most desirable ten items.

Nurses working in medical center perceived that their jobs required more complicated skills than those nurses who worked in the other types of hospitals. In medical centers, care procedure is clearly defined and nursing knowledge is much more important than the others because of critical care activities. Interpersonal skill, problem solving and teamwork varied depending on type of clinic. While "Interpersonal skill" and "Problem solving" were much more important for the medical clinics, "Contextual" and "Problem solving" were the preliminary for the surgical clinics. We can deduce from these results that the requirement level of an criterion, more or less, varies dependent on type of clinic; some criteria can take much more dominant than the others.

The major limitation to this study is the generalizability. Although the study was applied in a big hospital and may not be generalized to nurses in other hospitals, the findings indicate that the weights can partly vary dependent on type of care service. A criterion can take much more important than the other clinic. This is not a dilemma. Organizational culture is efficient to select the criteria. In recent studies, teamwork, communication, and leadership begin going fore than before. It is not difficult to predict that both organizational culture such as mission, vision, and values of the hospital and innovation which are contextual performance measures should be new competencies in near future.

For the next attempts, two suggestions are essential as follows;

a) While the number of nurse in a unit increases, it is required much time to evaluate the nurses. Between 15 and 20 criteria is ideal number to evaluate. Hospital management can select the criteria tracing the order in Table 4. When the number of criteria is decreased, the new weights can be calculated with consideration of the group weight or revised to be 100%.
b) In traditional weighting methods, the decision makers, subjectively, assign a rough weight such as 5%, 10%, or 15% to a criterion. In this assignment, the consistency of the decision maker is not very high. No one gives a value like 8.25%. However, in Analytic Hierarchy Process (AHP) method, a new decision making method, a decision maker compares a criterion to another one and gives his/her individual preference as equal or moderate importance. Hence, it is expected that the weights determined by using AHP are much more consistent.

In conclusion, applicable criteria to measure nurse performance are, probably, one of the biggest challenges for broads of nursing. Our findings addressed the current scope of nursing; nurses are higher accountable for contextual performance, problem solving and interpersonal skill dimensions of nursing posts. In the next attempts to design a tool, it is expected that criteria linked to mission, vision, and values of organization will be considered.

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Appendix 1: Contextual Performance Criteria

Dimension	Sub-dimension	Criterion
Interpersonal Citizenship	**Altruism**	Assisting co-workers with personal matters
		Altruism in helping individual organization members
	Conscientiousness	Spending resources with effectively
		Cooperating with others to solve problems
		Engaging responsibly in meetings and group activities.
Organizational Citizenship	**Allegiance/Loyalty**	Not complaining about organizational conditions
		Not keeping others engaged in individual problems
		Treatment the supervisor with respect
		Exhibiting punctuality arriving at work on time in the morning and after lunch breaks
		Absenteeism
		Participating in training meeting
		Suggesting procedural, administrative, or organizational improvements
	Compliance	Display proper appearance or bearing
		Following organization rules and procedures
		Exercise personal discipline and self-control
		Participating responsibility in the organization
		Complying with organizational values or policies
		Working safely
		Protecting equipment
Job Dedication	**Job Dedication**	Carrying out tasks in time
		Effectively handling new situations
		Volunteering to carry out tasks not part of own job
		Attention to important details
		Quality
		Working harder than necessary (Productivity)
		Working systematically
		Taking initiative to solve a work problem
		Engaging in self-development to improve own effectiveness
		Creativity to solve a work problem
		Generating new ideas to make things (tasks) better (Innovation)
		Planning and organizing posts