



Full Length Research Paper

Correlational study on staffing in the nursing service department of Baguio general hospital and medical center, Baguio City, Philippines

June Il A. Kiblasan^{1*}, Florence D. Dao-ayen², Minda B. Bahug³, Mary Grace G. Villaruz⁴, Jane P. Fabian⁵, Jersica P. Calderon⁶, Agnes T. Leuterio⁷

^{1/4}Faculty of Nursing, Misurata University, Misurata, Libya

^{2/3/7}Faculty of Nursing, El-Mergib University, Al Kohms, Libya

^{5/6}Faculty of Nursing, University of Tripoli, Libya

*Correspondence Author's E-mail: jjiak0321@yahoo.com

Abstract

This study was conducted to assess the pattern of currently utilized staffing and the importance of factors that can possibly affect the process in the nursing service department of Baguio General Hospital and Medical Center (PHILIPPINES). A descriptive normative survey was employed with a reliable questionnaire constructed by the authors answered by one hundred thirty (130) available nurses. Gathered data were tallied and subsequently subjected to descriptive statistical treatment using the Statistical Package for Social Sciences Version 20.0 (SPSS) employing a Pearson product-moment correlation coefficient (PPMCC). Most of the patterns were frequently utilized and most of the factors that can possibly affect the staffing were very important. There is a strong significant relationship between the currently utilized staffing pattern and the factors that affect the process of staffing.

Key Words: Nursing, Nursing Service, staffing, staffing system, staffing pattern

INTRODUCTION

Health care is one of the most prioritized concerns worldwide for it affects people how to deal with their lives. This interest made all health care facility aware that primary care must be rendered on its highest level. Some authors claimed that public and private health care payers nationwide are testing whether making primary care more patients centered, accessible, coordinated, and comprehensive will improve health care quality, cost, and patient and clinician experiences. (Bodenheimer & Pham, 2010; Berenson, 2010; Meyers & Clancy, 2009) In this instance, staffing plays a vital role where staffs in different levels to cater the health needs of clients are necessary. A team that is expected to collaborate in the delivery of high-quality, comprehensive care efficiently. One member in the said team that is crucial is in nursing. Staffing in nursing is directly related to nurse to patient ratio, nursing skill mix, academic preparation, specialized training, and experience. Nurse staffing is dependent upon staffing patterns and composition which

influence the workplace culture and impact the ability of the nurse to provide adequate care. Whereas, staffing in nursing is a critical concern for nurse leaders and administrators as it is directly related to nursing management where appropriate nurse staffing is focused to patient's safety and well-being. It is a big challenge to assure worth and consistent service by deploying nursing staff to secure quality nursing care.

Staffing can be challenging, especially in industries where personnel requirements change continuously, and where availability and skill sets of casual and/or temporary workers must be taken into consideration. Nurse staffing is an actual and critical concern that brings a big challenge to most health care facilities in many countries. Effective staffing is one of the critical success factors for a health care facility and alike. Across this and other industries, the market for temporary staffing has seen tremendous growth. According to Fagerstrom, (2012), one prerequisite for the sustainable development

of a health care system is the optimal allocation of care resources, in both quantity (number of nurses) and quality (competence of nurses). Nurse staffing and patients' satisfaction are critical concerns for nurse leaders and administrators as these factors are directly related to nursing management. With nursing care being a primary factor in patient satisfaction and little relief from shortages, nursing leaders are compelled to establish methods of measuring staffing effectiveness. Thus, it is crucial to circumnavigate outcomes of rendered nursing care to be able to identify the exact and systematic pattern of staffing. As such, an institution operating in dynamic environments like health care facilities need effective staffing for it is one of the critical factors that affect operational workflow. Without sufficient numbers of doctors and nurses, hospitals cannot properly manage patient care.

Nursing is a vital service in any health care facility where nurses provide non-stop direct and indirect care. It has an obligation to society which can be accorded with recognition and respect. Nurses are professionals meant to cater health needs of patients and are accountable not only to their profession and institutions, but to society as a whole. Nursing integrates all the hospital's vital services as it interfaces with all the other support services such as medicine, dietary, dental, laboratory, pharmacy, medical, social services, housekeeping, maintenance, record-keeping, etc. In Japan, Medical Service Law Study Group (2005) stipulates the required number of nursing staff (e.g., registered nurses and practical nurses) at a general hospital. Notwithstanding this guidance, actual nursing staff deployment is left to the discretion of each medical institution. The provision of nursing is burdened with the expansion of the nurse's functions, rapid turnover, and the structural constraints within the health care facility and may include understaffing, poor working conditions and inadequate supplies and equipment. Despite all these constraints and problems, nursing is still expected to render quality services. Without an effective nursing service, patient care will suffer.

Baguio General Hospital and Medical Center is a national government owned tertiary referral hospital as per DOH licensing and PHIC accreditation. The hospital was approved for the mean time to function as four hundred fifty (450) beds but is still on the process of reevaluation to increase its bed capacity as the result of the submitted additional requirements. However, due to fluctuating in-patients and referrals from nearby hospitals; unfilled vacant nurse positions in department due to fast turnover of nurses; official leave and absences; less trained nurses; and other circumstances that affect the pattern of currently utilized nursing staffing, inevitable problems related to the matter exist that may affect the function of the entire department. On the other hand, an effective and efficient standardized staffing in the nursing service department is essential for it affect the deliverance of quality nursing care to clients. With this,

the researchers would like to assess the status of currently utilized staffing system in the nursing service department for a belief that staffing greatly influences the performance as well as the delivery of quality nursing care to all clientele. Wherein, factors affecting the staffing that arise have a big impact that could results into problems and ends up to vain that can affect the performance not only the staff but the entire department. The findings of this study can serve as an indicator of the quality and systematic staffing in nursing practice and an eye-opener in handling staffing leading to quality nursing care delivery.

METHODS

The study made use of a descriptive normative approach. The total enumeration of nurses assigned to different units or departments of the Baguio General Hospital and Medical Center in Baguio City, Philippines was the source of data needed and purposive sampling was employed in the completion of this study. A self-made questionnaire based on the scope of the study was pre-tested to ten (10) nurse supervisors, head nurses/senior nurses and staff nurses of the nearby private hospital with same level and category according to the Department of Health (DOH) licensing and accreditation from Philippine Health Insurance Corporation (PHIC) to determine its reliability and validity making use of Kuder-Richardson Instrument reliability test ($r_k - R = 0.99$) was utilized as the main data-gathering tool with three (3) parts; first is personal information relevant to the purpose of this study followed by dimensions relative to the currently utilized staffing pattern and the factors that can possibly affect the process of currently utilized staffing in the nursing service department.

Data Source

There were three positions (Nurse IV, Nurse V, and Nurse VII) that were not included because of their concerns are on other administrative functions. During the time that this study was conducted, there were 170 full time nurses' as per plantilla (list of positions approved by the Civil Service Commission and Department of Health, Philippine) of the said hospital but only 130 nurses were available during data gathering. There are 19 nurse supervisors (Nurses III) but only 13 were available. Furthermore, there are 44 head or senior nurses (Nurse II) but only 33 were accommodated. Lastly, the most numbered among the respondents are the staff nurses (Nurse I) with total number of 107 but only 84 were available

Data Analysis

Collected data were tallied and subsequently subjected to

Table 1: Pattern of staffing utilized in the nursing service department

Staffing Pattern	Frequency	Descriptive Equivalent
1. Nursing Care per shift: Hours per Patient		
a. 10 - 30 minutes	115	Always
b. 30 minutes – 1 hour	116	Always
c. 1 – 1 ½ hours	94	Frequently
d. 1 ½ to 2 hours	96	Frequently
e. 2 – 2 ½ hours	85	Frequently
f. 2 ½ - 3 hours	86	Frequently
g. Others: Please specify :		
- 3-4 hours	26	Rarely
- depend on condition of client	86	Frequently
2. Ratio: Registered Nurse to Asst. Nurse		
a. 1 nurse, 2 nursing assistants	97	Frequently
b. 2 nurse, 1 nursing assistant	125	Always
c. 3 nurses, 2 nursing assistants	88	Frequently
d. Others: Please specify		
- 1 nurse, 1 nursing assistant	94	Frequently
- 3 nurse, 1 nursing assistant	36	Sometimes
3. Distribution of Nurses		
a. 3 nurses per shift in big areas/units	104	Frequently
b. 1 nurse per shift in smaller areas/units	130	Always
c. 2 nurses per shift in all areas/units	98	Frequently
d. 3 nurses per shift in all areas/units	25	Rarely
e. 1 nurse per shift in all areas/units	98	Frequently
f. Others: Please specify		
- 2 nurses in AM, 1 nurse in PM & night shift.	35	Sometimes
- 1 nurse in 2 small areas/units	4	Rarely

Note: Always = 105 – 130; Frequently = 79 – 104; Occasionally = 53 – 78; Sometimes = 27 – 52; Rarely = 1 – 26

descriptive statistical treatment using the Statistical Package for Social Sciences Version 20.0 (SPSS) employing Pearson product-moment correlation coefficient (PPMCC) to test if there is significant relationship between the currently utilized staffing pattern and factors affecting the staffing in the nursing service department of Baguio General Hospital and Medical Center.

RESULTS

Profile of nurses

There were 46 (35.35%) nurses' with more than five (5) year experience as nurse which is the leading followed by 45 or 34.62% nurses with below one year experience; and the least are 39(30.00%) nurses who have been working for one to five years. On the other hand, there are 77 (59.23%) nurses' assigned to general wards followed by nurses assigned in the special areas with 49 (37.69%) and the last is in the nursing clinics with 4

(03.08%) nurses. For the job positions in the nursing department, 84 (64.62%) are staff nurses which has the most numbered workforce followed by 33(25.38%) head nurses then by 13(10%) nurse supervisors.

Pattern of Currently Utilized Staffing

Table 1 showed the pattern of currently utilized staffing in the nursing service of Baguio general hospital and medical center. There are three (3) dimensions in the pattern of currently utilized staffing involved in this study, the number of nursing care hours needed per patient, ratio of professional nurse to non-professional nursing personnel, and the distribution of staff by shift according to average number of in-patient per area of assignment.

Along with the dimensions, majority of nurses claimed that most of the patterns were frequently utilized. As to duration of rendering nursing care to patient, nurses asserted that 10 minutes to 1 hour has been always utilized in meeting the health needs of their patient. 1 to 3 hours and depending on patient condition has been

Table 2: Factors Affecting the Staffing Pattern in the Nursing Service Department

Factors	F	Descriptive Equivalent
A. Quality of care		
a. Application of the nursing process	111	Extremely Important
b. Level of care of client/patient	98	Very important
B. Competence		
a. Educational attainment	88	Very Important
b. Knowledge on special nursing procedures or treatment	117	Extremely Important
c. Accurate documentation	89	Very Important
d. Insufficient exposure to area of assignment	92	Very Important
C. Interpersonal Relationship		
a. Smile and communicate with colleague frequently	90	Very Important
b. Communicate directly and consistently to patient	114	Extremely Important
c. Frequent contact for nursing purpose with the patient	95	Very Important
d. Attitude and behavior of the nurse towards the client	104	Very Important
e. Attitude and behavior of the nurse towards colleague	92	Very Important
D. Administrative related concern		
a. Number of staff nurses in the plantilla	105	Extremely Important
b. Fast turnover of staff nurses	125	Extremely Important
c. Official leave of any type	78	Moderately Important
d. Training/Seminars	87	Very Important
e. Have part time job outside	70	Slightly Important
f. Absenteeism	111	Extremely Important
g. Hiring of job order/contractual nurses	93	Very Important
h. Nurse fellow program	87	Very Important
i. Others: Nurse-client ratio	58	Slightly Important

Note: Extremely Important = 105 – 130; Very Important = 79 – 104; Moderately Important = 53 – 78; Slightly Important = 27 – 52; Least Important = 1 – 26

frequently utilized and it is a rare scenario when 3 – 4 hours was being utilized. In regards to the ratio of the professional nurse to non-professional nursing personnel, 2 nurses and a nursing assistant was always utilized with a score of 125.

Furthermore, 1 nurse and 2 nursing assistant; 1 nurse to 1 nursing assistant and 3 nurses to 2 nursing assistants has been frequently utilized with scores of 97, 94 and 88 respectively. But sometimes, ratio of 3 nurses is to 1 assistant nurse was utilized. Relative to the area of assignment, all nurses' asserted that 1 nurse is assigned in smaller areas. Moreover, 3 nurses per shift in big areas, 2 nurses and/or one nurse in each of all areas has been frequently utilized with score of 104 and 98 respectively. Assigning 2 nurses in morning shift, 1 nurse each in afternoon and night shift has been also utilized sometimes with score of 35 while 3 nurses per shift in all areas/units and 1 nurse in 2 small areas/units were rarely utilized with scores of 25 and 4.

Factors Affecting the Staffing System

In this study, table 2 presented how important those

factors that could possibly affect the pattern of currently utilized staffing in the nursing service department of Baguio general hospital and medical center. There are four elements or aspect of factors that affect the staffing pattern where it allows multiple answers as to the knowledge of nurses that it is an important factor affecting the process of staffing. Generally, most of the factors were deliberated as very important and extremely important to consider. To be specific, fast turnover of nurses (administrative related concern) outnumbered all the factors with total score of 125. Other extremely important factors and these are: knowledge on special procedure or treatment (competence); communicate directly and consistently to patient (interpersonal relationship); application of nursing process (quality care); absenteeism (administrative related concern); and number of staff nurse positions in the hospital plantilla (administrative related concern); with scores of 117, 114, 111, and 105 respectively. On the other hand, attitude and behavior of the nurse towards the client (administrative related concern), 104; level of care of client/patient (quality of nursing care), 98; frequent contact for nursing purpose with the patient (interpersonal

Table 3: Relationship between pattern and factors that can possibly affect the currently utilized staffing

		Pattern	Factors
Pattern	Pearson Correlation	1	.236
	Sig. (2-tailed)		.142
	N	40	40
Factors	Pearson Correlation	.236	1
	Sig. (2-tailed)	.142	
	N	40	40

relationship), and hiring of job order/contractual nurses (administrative related concern), 93; insufficient exposure to area of assignment (competence), 92; attitude and behavior of the nurse towards colleague (interpersonal relationship) are both with score of 92; smile and communicate with colleague frequently (interpersonal relationship), 90; accurate documentation (competence), 89; educational attainment (competence), 88; and training/seminars (administrative related concern), and nurse fellow program (administrative related concern) with both score of 87 are very important factors affecting the staffing pattern.

Relationship of currently utilized pattern and factors affecting staffing

Table 3 showed the relationship between the patterns and factors affecting the currently utilized staffing in the nursing service department of Baguio general hospital and medical center. The statistical derived values essential in validation using the Pearson product-moment correlation coefficient are as follows: the Pearson's r is 0.236 $n = 40$; $p = .142$. The correlation between pattern and factors affecting the currently utilized staffing is significant at the 0.01 level (2-tailed) and at 0.05 level (2-tailed).

DISCUSSION

It is imperative to discerna personnel's expertise and other qualifications that are essential in staffing. Taking into consideration the length of work experience, nurses' were nearly distributed equally. It's good that commonest of the them have more than 5 years length of work experiences but there might be reasons why they stayed long. Anyhow, the possible positive effect of this is expected for the longer the exposure of an individual to a repetitive process, the higher the level offamiliarization leading to expertise on the process. However, almost half of the total nurses have below one year experience which is almost the same to the number of nurses with more than 5 year length of work experience.

This is so alarming but it is still good news for more than one-fourth of the nurses have been working for one

to five years. This distribution is quite good because those more experienced can assist those less experienced in terms not only to staffing but to the entire nursing department routine. Nurses with more than 6 year length of work experience claimed that they prefer to stay for their family.

On the other hand, majority of the nurses are assigned in big areas such as in the general wards. It is understandable because the general ward is the largest section that can accommodate more patients/clients that sometimes go beyond the maximum of its bed capacity. It implies the fact that general ward must be with huge number of nurses for it is where clients with different illness be found. Thus, it needs more nurses to maintain the standard ratio of a nurse is to clients. Likewise in the special areas, the ratio of nurse to clients should be maintained because patients in these areas are in critical conditions unlike the nursing clinics that cater health needs of out-patient during day.

Staffing can be challenging, especially in industries where personnel requirements change continuously, and where availability and skill sets of casual and/or temporary workers must be taken into consideration. It is also the effectiveness of staffing is one of the critical factors in the success of companies operating in dynamic environments like hospitals for the shifts of doctors and nurses. Without sufficient number of doctors and nurses, hospitals cannot properly manage patient care.

Along with the dimensions of currently utilized staffing pattern, majority of nurses claimed that most of the patterns were frequently utilized. As to duration of rendering nursing care to patient, nurses asserted that 10 minutes to 1 hour has been always utilized in meeting the health needs of their patient. 1 to 3 hours and depending on patient condition has been frequently utilized and it is a rare scenario when 3 – 4 hours is being utilized. This is similar to the study of Needleman, Buerhaus, Mattke, Stewart and Zelevinsky (2002) that the mean number of hours of nursing care per patient-day was 11.4, of which 7.8 hours were provided by registered nurses, 1.2 hours by licensed practical nurses, and 2.4 hours by nurses' aides. Follow up observation were conducted to validate how could be a nurse meet the health needs of a patient in short duration. It was great because incoming nurse usually report earlier than the usual time where systematized planning of nursing care was done just after

proper endorsement from outgoing nurse. Moreover, nurses are assigned to different areas/units that most of them are in the general wards that made variability in nursing care hours needed. In addition, there are areas with fluctuating number of patients/clients resulting to excess in the average number of in-patient. On the other hand, some of the areas render more than maximum time per client for they were assigned to area with minimal number of client/patient that needs closer supervision such as coronary care unit and alike.

Furthermore, majority of the nurses' claimed that there are two nurses and a nursing assistant was always utilized in terms of ratio on registered nurse to nursing assistant. This confirms the verbatim report of nurses during data gathering in which the ratio of professional nurses to non-professional nursing personnel varies according to area of assignment, the average number of in-patient in the previous month and the nursing care needed by each client/patient. On the other hand, most of the distributions of nurses were frequently utilized. All nurses' asserted that 1 nurse is assigned in smaller areas like Coronary Care Unit, Delivery Room, Ophthalmology ward, Ear-Nose-Throat ward and alike has been always utilized. Follow up visit were done to discuss the findings with the involved nurses and to obtain their opinions. Nurses emphasized that distributions was due to exceeding and fluctuating total number of in-patients. Yet, filling up of vacant positions was still on process. Though hospital hires additional nurses in job order/contractual basis or in casual basis to be assigned in big areas/units but only allowed in the morning (7-3) shift. In addition, an advantage that this health facility is an affiliating hospital for nursing, medicine and other allied to medical courses for it is of great help if more interns and apprentice.

There are instances that factors related to the work, place and its administration arise that can possibly affect how manpower is distributed. Generally, most of the factors were deliberated as very important and extremely important to consider in staffing. Among the factors, fast turnover of nurses which is an administrative related concern outnumbered the others. This is an awakening reminder not only to the hospital itself but also to national government because most of the time, highly competent nurses prefer to seek for greener pasture after obtaining experience necessary to work overseas than to stay and serve their countrymen. Moreover, the other factors that were considered as extremely important entail the importance of quality nursing education and the importance of maintaining good rapport in between health workers to clients for good therapeutic professional relationship promotes trust. Looking into the aspect where the factors belong, administrative related concern is plentiful among them followed by competence and interpersonal relationship. The findings indicated how important the function of the hospital administration in

hiring nurses that can affect the staffing pattern in which competence of being a nurse should be one of the most priority in screening applicants during hiring. The administration should also see to it that loyalty and commitment must be promoted to oneself. On the other hand, quality of nursing care (level of care for client/patient) is also very important factor for it holds the dignity of the health care facility. Meanwhile, is there a possibility that the identified factors that can possibly affect the staffing are related to the currently utilized patterns? It is not supposed to be but is important to know because nursing service caters a life related and health sustenance function that is vital. The authors proved that there is a strong relationship between the currently utilized pattern and factors affecting staffing.

CONCLUSION

Staffing is vital for it is the foundation that guides how people work and be distributed and it is important to know factors that may affect and how it is related. Through the statistical survey that was carried and the findings made to assess the pattern of currently utilized staffing and the importance of factors that affect the staffing system in the nursing services department of Baguio general hospital and medical center, the authors arrived with the following conclusions: (1) Nurses' have varying length of work experience in which most of them were assigned in big areas like general ward in particular; (2) The dimensions in the pattern of currently utilized staffing depends on the area of assignment, number of in-patient and the condition of the patient in which most of them were frequently utilized; (3) The elements of the factors affecting the pattern of currently utilized staffing are very important to consider in staffing; (4) There is strong significant relationship between the pattern and factors affecting the currently utilized staffing in the nursing service department of Baguio general hospital and medical center.

REFERENCES

- Berenson RA, Rich ECUS (2010). US approaches to physician payment: the deconstruction of primary care. *J Gen Intern Med.* 25(6):613-618.
- Bodenheimer T, Pham HH (2010). Primary care: current problems and proposed solutions. *Health Aff (Millwood)*; 29(5):799-805.
- Fagerström F (2012). "Nursing—an essential human resource for the sustainable development of health care." *NERP*, vol. 2, no.1, pp1-9.
- Medical Service Law Study Group (2005) *Six codes of healthcare policy*. Chuohoki Publishing, Tokyo.
- Needleman J, Buerhaus P, Mattke S, Stewart M and Zelevinsky K (2002). Nurse-staffing levels and quality of care in hospitals, *The New England J. of Med*, Vol. 346, No. 22, May 30, , www.nejm.org, page 1715