ORİJİNAL ARAŞTIRMA ORIGINAL RESEARCH

DOI: 10.5336/nurses.2022-92073

Nursing Workload: Direct and Indirect Care Practices: Descriptive, Cross-Sectional Research

Hemşirelik İş Yükü: Direkt Bakım ve Dolaylı Bakım Uygulamaları: Tanımlayıcı, Kesitsel Araştırma

Asibe ÖZKAN[a,b], Füsun AFŞAR[b]

[a]Sağlık Bilimleri Üniversitesi Hamidiye Hemşirelik Fakültesi, Doğum ve Kadın Hastalıkları Hemşireliği ABD, İstanbul, Türkiye
[b]İstanbul Başakşehir Çam ve Sakura Şehir Hastanesi, İstanbul, Türkiye

ABSTRACT Objective: Workload is a multidimensional and complex concept that determines the nurse's performance and quality of care. In this study; it was aimed to determine how the workload of nurses working in internal and surgical clinics of A1 training and research hospitals is distributed between direct care and indirect care practices, how much time is allocated to which practices and to form a basis for the relevant clinical nurse employment according to the obtained data. **Material and Methods:** The data form devised for the collection of the study data, prepared within the framework of the job descriptions in Annex 3 of the Nursing Regulation was a result of brainstormings from the daily patient experiences of health care services unit supervisors, special branch nurses, and responsible nurses of the relevant clinics in line with the literature as ten sub-titles with a total of 51 questions. Evaluation was made on 54 forms, and the forms werw filled by the nurses who performed the application. **Results:** The time spent on one-to-one patient care practices such as interventional applications, external practices, diagnosis & treatment, educational activities, emergencies and drug administration was 3,853 minutes. The time spent on consultation, registration, pharmacy transactions, and non-clinical transactions was 1,239 minutes. **Conclusion:** Of the recorded 33,480 minutes of applications, 17,338 (51.7%) minutes were spent on patient care practices, and 5,575 (16.6%) minutes were spent on indirect care practices.

Keywords: Workload; nursing care

ÖZET Amaç: İş yükü, hemşirenin performansını ve bakımın kalitesini etkileyen çok boyutlu ve kompleks bir kavramdır. Bu çalışma; A1 eğitim ve araştırma hastanesi dahili ve cerrahi kliniklerinde çalışan hemşirelerin iş yükünün, direkt bakım ve dolaylı bakım uygulamaları arasında nasıl dağılım gösterdiğinin, hangi uygulamalara ne kadar vakit ayrıldığının saptanması ve elde edilen sonuçlara göre ilgili klinik hemşire istihdamına baz oluşturması amacı ile planlandı. **Gereç ve Yöntemler:** Şubat 2019 yılında tanımlayıcı, kesitsel ve gözlemsel olarak gerçekleştirilen çalışma toplam 91 servis yatağına hizmet veren 24 hemşire ile yapıldı. Çalışma verilerinin toplanması için geliştirilen veri formu; Hemşirelik Yönetmeliği Ek 3'te yer alan görev tanımları ve sağlık bakım hizmetleri birim sorumluları, özel dal hemşireleri ve adı geçen kliniklerin sorumlu hemşireleri ile birlikte 24 saat boyunca yaptıkları uygulamaların beyin fırtınası yapılarak listelenmiş ve beyin fırtınasında söylenen tüm uygulamalar özelliklerine göre literatür doğrultusunda 16 başlık ve toplam 51 soru olarak düzenlenmiştir. Değerlendirme 54 form üzerinden yapılmış, formlar uygulamayı yapan hemşireler tarafından doldurulmuştur. **Bulgular:** Girişimsel uygulamalar, eksternal uygulamalar, tanı-tedavi, eğitim faaliyetleri acil durum ve ilaç uygulamaları gibi birebir hasta bakımına ilişkin uygulamalara harcanan süre 3.853 dk, bakımın sağlanabilmesi için gerekli dolaylı bakım uygulamaları olan; konsültasyon, kayıt işlemleri, eczane işlemleri ve klinik dışı işlemler başlıklarına harcanan sürenini ise 1.239 dk olduğu saptandı. **Sonuç:** Uygulamaların kayıt altına alındığı toplam 33.480 dk sürenin 17.338 (%51,7'si) dk'sı hasta bakım uygulamalarına, 5.575 (%16,6'sı) dk'sının ise dolaylı bakım uygulamalarına harcandığı görüldü.

Anahtar Kelimeler: İş yükü; hemşirelik bakımı

The necessity of effective manpower planning is inevitable in order to achieve the goals and objectives set in the health sector and to provide high-quality health care with zero errors.

In order to determine the nursing manpower demand, several methods like the traditional method, trend analysis, patient classification systems, care criteria method, manpower need determination method

Correspondence: Asibe ÖZKAN
Sağlık Bilimleri Üniversitesi Hamidiye Hemşirelik Fakültesi, Doğum ve Kadın Hastalıkları Hemşireliği ABD, İstanbul, Türkiye
E-mail: asibeozkan©gmail.com

Peer review under responsibility of Turkiye Klinikleri Journal of Nursing Sciences.

Received: 23 Jun 2022 ***Received in revised form:*** 02 Nov 2022 ***Accepted:*** 06 Dec 2022 ***Available online:*** 22 Dec 2022

based on workload analysis are among the some used.

The planning of manpower needs can be described as predetermining the work to be done in an institution in a time period in terms of both quality and quantity and estimating the amount of manpower to achieve that work.[1,2]

Personnel distribution chart is a study that determines the number of existing personnel to work in the health and auxiliary health services in the provincial organization of the Ministry of Health, with respect to their titles and branches. The aforementioned table serves as the basis for calculating the number of nurses employed by community hospitals in our nation.[3,4]

However, in the personnel distribution within the health facilities; many factors such as the location of the hospital and the clinic, the number of clinical beds, the level of dependence of the patients, the variability of daily hospitalizations and discharges, the number of daily inpatients, the distance to the pharmacy and examination areas, and the operating room are important.[5]

In this study; it is aimed to determine how the workload of nurses working in the internal and surgical clinics of A1 training and research hospitals is distributed between direct care and indirect care practices, to determine how much time is allocated to which practices and to form a basis for the relevant clinical nurse employment according to the results obtained.

MATERIAL AND METHODS

TYPE AND SAMPLE OF THE STUDY

The descriptive, cross-sectional and observational study, which was carried out in February 2019, was carried out with 24 nurses, 20 bedside and 4 responsible nurses serving a total of 91 beds from the services with the highest bed occupancy rate, namely; internal medicine service (24 beds), chest diseases service (24 beds), orthopedics service (27 beds), and gynecology service (with 16 beds).

Responsible nurses are from the senior nurse group (10 years and above), while bedside nurses are nurses (2-3 years) who have recently started working at the hospital and have gone through the same orientation training. No special distinction was made in the selection of the sample, and 24 nurses working in the aforementioned clinics and volunteering to participate in the study were included in the study.

The data were collected on a 24/7 basis on four mondays at the aforementioned clinics in February, the time period with the highest occupancy rate according to the Basic Health Statistics Module data of the previous year. Mondays have been chosen because they are the busiest day, due to the fact that the weekend is over and the new week is organized.

THE ETHICAL ASPECT OF RESEARCH

In order to conduct the research, official permission was obtained from the ethics committee of University of Health Science Ümraniye Training and Research Hospital (with the letter dated: March 21, 2022 and numbered: 1766). Consents were obtained from the nurses who would fill out the data collection form, indicating that they have participated voluntarily. The study was conducted in accordance with the principles of the Declaration of Helsinki.

DATA COLLECTION TOOLS

On the four mondays of February, a head nurse working on two bedside shifts and nurses working on night shifts filled the 51-question workload form in minutes after each operation performed by the nurses. Ten of the 64 workload analysis forums filled by the nurses were excluded from the study due to the inconsistency of the form times within themselves, and 54 workload analysis forms were taken as a basis for data calculation.

In the created form, there are questions about 14 interventional applications, 3 external applications, 5 diagnosis and treatment, 5 educational activities, 4 emergencies, 2 consultations, 3 drug preparation, 11 registration procedures, the details of which are given in Table 1.

After the form was finalized, a meeting was held with 24 nurses working on the floors where the study would take place, the purpose of the study, the form to be used and how to fill them were discussed and suggestions were received. On the four mondays of February, a head nurse working on two bedside shifts

TABLE 1: Data collection tool subheadings.

Tool Subheadings	Number of Questions
Interventional applications • Change of vascular access, • IV injection application, • Drug infusion administration, • Top of vascular fluid flow, • Changing IV infusion, • Injecting medication into the fluid, • To withdraw and cancel the vascular access, • Wearing blood and blood products, • SC injection, • Medication application with a nebulizer, • Giving oxygen to the patient, • Nasogastric drug administration, • Nasal CPAP application	13
External applications • Nasogastric insertion, • Urine catheter insertion, • ECG recording	3
Diagnosis and treatment applications •Taking a blood sample, • Urine test, • Obtaining vital signs, • Filling the patient anamnesis form, • Printing drug orders,	5
Applications related to educational activity • Informing the inpatient and introducing the clinic, • Education of the patient to be discharged, • Informing the patient or family about drugs, • Informing the patient and his family about the visitor rules, • Routine trainings	5
Applications related to emergency management • Do not aspirate the patient, • Do not ambulate the patient, • Do not interfer the patient having a seizure	3
Practices related to the management of consultation processes • Sending patients for consultation, • Accompanying the incoming physician at the bedside	2
Drug preparation • Parenteral drug preparation, • Serum preparation, • Preparation of oral medicine pots	3
Pharmacy transactions • Order forwarding • Taking medications	2
Applications regarding registration procedures • Recording the treatments performed, • Filling the patient care plan, • Filling the verbal request form, • Keeping records of narcotic drugs, • Nursing process and filling out a diagnosis form, • Keeping records of patients at risk of falling, • Keeping records of patients with bedsores, • Filling the emergency car tracking form, • Entering patient diets into the system, • Removing the blood barcode and entering the blood	10
Applications related to non-clinical procedures • Delivering patients to surgery, • Delivery of patients for interventional procedure, • Delivering patients to another clinic, • Consultation service	4
Total	51

IV: Intravenous; SC: Subcutaneous; CPAP: Continuous positive airway pressure; ECG: Electrocardiography.

and nurses working on night shifts filled the 51-question workload form in minutes after each operation performed by the nurses. Ten of the 64 workload analysis forums filled by the nurses were excluded from the study due to the inconsistency of the form times within themselves, and 54 workload analysis forms were taken as a basis for data calculation.

EVALUATION OF DATA

In the statistical analysis of the data; descriptive analyzes (mean, standard deviation) and Mann-Whitney U test for differences between variables were used. The results were evaluated at the 95% confidence interval, at the $p<0.05$ significance level.

RESULTS

When Table 2 was examined, it was found that the nurse/patient ratio was 7, 75 during the daytime and 15.5 at night in surgical services, and for the non-surgical clinics the same ratio was 12 and 24, respectively. When compared in terms of nurses per patient, no significant difference was demonstrated in the daytime shift, while the rate of increase in night shift in internal clinics had a statistically significant difference ($t=3.14$, $p=0.03$).

The nurses participating in the study filled out 54 observation forms, 36 of which were in 8-hour day shifts and 18 in 15-hour night shifts. During the period of 17,280 minute daytime, 16,200 minute at night for a total of 33,480 minutes the nurses who participated in the study recorded their procedures and their durations. The time spent on patient care on a one-to-one basis such as interventional practices, external practices, diagnosis-treatment, educational activities, emergency, and medication practices was 3,853 minutes. The time spent on consultation, registration, pharmacy, and non-clinical procedures was 1,239 minutes. Of the 33,480 minutes of recorded procedures, 17,338 minutes (51.7%) was spent on patient care practices and the rest 5,575 (16.6%) minute was used for indirect care practices.

At the end of the nursing practices grouped under ten main headings and 54 observations, the average times allocated were respectively; 1501.75 minutes for interventional practices, 849 minutes for

TABLE 2: General characteristics of the services where the work is performed.

	Number of Day Nurses		Number of Night Nurses		Number of Beds	Average Length of Stay	Occupancy
Clinic Name	n	%	n	%	n	Occupancy Rate	Rate
Internal medicine	3	50.0	1	16.6	24	4.6	100
Chest diseases	3	50.0	1	16.6	24	11.3	100
Orthopedic service	3	50.0	1	16.6	27	7.3	77.7
Obstetrics	3	50.0	1	16.6	16	2.1	62.5

diagnosis-treatment applications, 702 minutes for registration procedures, 610.83 minutes for emergencies, 411.67 minutes for educational activities, 398.25 minutes for drug applications, 354.75 minutes for non-clinical procedures, 152.52 minutes for pharmacy transactions, and for the consultation services it was 82.3 minutes.

The average times allocated to each of the ten main issues in the day shift were respectively; 788.5 minutes for interventional practices, 403.2 minutes for diagnosis-treatment applications, 308.75 minutes for registration procedures, 281.17 minutes for educational activities, 223.83 minutes for emergency sub-ops, 165.25 minutes for drug applications, 195.75 minutes for non-clinical procedures, and for pharmacy procedures 89.25 minutes, likewise for the night shift were; 713.25 minute, 446 minute, 393.25 minute, 387 minute, 230.5 minute, 233 minute, 159 minute, 63.05 minutes respectively.

Durations for the interventional application were measured in minutes, and the following values were observed as follows:

- It was 142.25 minutes in the daytime and 130.50 minutes at night in the internal medicine service,
- 307.50 minutes during the daytime, 262.50 minutes at night in the orthopedics service,
- 311.25 minutes in the daytime, 249 minutes at night in the thoracic diseases service,
- 87.50 minutes during the day and 65.75 minutes at night in the obstetrics service (Table 3).
- It was found that the time allocated to the procedures in the thoracic diseases was significantly longer than the orthopedics service ($p<0.05$), (Table 4).

Time spent on external applications were; 47.50 minutes in the daytime and 11.50 minutes at night in the internal medicine service; 21.25 minutes during the day and 5.0 minutes at night in the orthopedics clinic; 14.75 minutes during the day and 13.75 at night in the obstetrics service. It is considered the longer time spent in the clinics of internal medicine, caused the discrepancy between the services, and this difference was believed to be related to the significant number of electrocardiography recordings ($p<0.05$) (Table 3, Table 5).

The time spent for diagnosis and treatment procedures were 88 minutes in the daytime and 96.25 minutes at night in the internal medicine service; 190 minutes in the daytime and 177 minutes at night in the orthopedics service; 115.50 minutes in the daytime and 154.25 minutes at night in thoracic diseases service and was 83.50 minutes during the day and 88 minutes at night in the obstetrics service. There was no statistically significant difference between internal medicine and thoracic diseases clinics but there were statistically significant differences between all others. During the night period, there was a statistically significant difference between all clinics ($p<0.05$) (Table 3, Table 4, Table 5).

It is most probable that the frequent venous blood gas follow-up, bronchoscopy preparation, and follow-up process extended this period in the service of the thoracic disease, and the frequency of follow-up of pre-op and post-op patients in the orthopedics service extended this period. The reason for this is thought to be related to having daily routine blood tests taken between 06.00 and 07.00 in the morning, and to the blood sugar follow-ups being mostly done before dinner and breakfast, during the 16.00-08.00 night shift.

TABLE 3: Distribution of time allotted to day-night nursing interventions on the basis of service.

		Interventional Practice		External Practices		Diagnosis and Treatment		Educational Activities		Emergency	
		$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Internal medicine	Daytime	142.25	32.38	7.50	3.54	88.00	23.51	27.50	6.45	85.00	
	Night	130.50	58.82	11.50	9.19	96.25	42.11	65.00	42.62	115.00	
Orthopedic service	Daytime	307.50	80.67	21.25	4.79	190.00	7.07	91.25	8.54		
	Night	262.50	37.75	5.00		177.50	12.58	88.75	7.50		
Chest diseases	Daytime	311.25	40.73	15.75	7.85	111.50	34.39	48.67	35.81	84.33	100.23
	Night	294.50	29.17	7.00	4.24	154.25	11.62	51.25	19.74	210.00	
Obstetrics	Daytime	27.50	3.70	14.75	2.36	13.50	2.38	13.75	7.23	54.50	9.57
	Night	25.75	1.89	13.75	2.99	18.00	3.83	25.50	2.89	62.00	0.00
		Consultation		Drug Administration		Registration		Process Pharmacy Transactions		Non-Clinical Transactions	
		$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Internal medicine	Daytime			32.50	12.58	43.50	22.65	28.25	5.89	16.25	4.79
	Night	21.00	18.18	51.25	10.31	98.75	50.48	26.25	11.09	88.75	42.50
Orthopedic service	Daytime	25.00	5.77	68.75	2.50	148.75	6.29	37.50	8.66	67.50	15.00
	Night	10.00	0.00	77.50	5.00	137.50	6.45	12.50	2.89	30.00	4.08
Chest diseases	Daytime	17.50	5.00	52.50	11.90	96.75	18.46	43.00	11.31	88.75	10.34
	Night			89.25	6.99	129.00	38.22		20.00	26.25	6.65
Obstetrics	Daytime	3.50	2.38	11.50	6.56	19.75	5.68	8.75	2.50	23.25	6.60
	Night	7.00	0.00	15.00	8.00	28.00	0.00	4.25	1.50	14.00	0.00

TABLE 4: The relationship between practices that make a significant difference between clinics in daytime work.

Daytime	Interventional Practice	External Practices	Diagnosis and Treatment	Education Activities	Drug Preparation	Registration Process	Non-Clinical Procedures
Internal medicine service/orthopedic service	0.02*	0.06	0.02*	0.02*	0.02*	0.02*	0.02*
Internal medicine/chest diseases service	0.02*	0.24	0.39	0.48	0.11	0.02*	0.02*
Internal medicine/gynecology service	0.02*	0.04*	0.02*	0.04*	0.02*	0.04*	0.14
Orthopedic service/chest diseases service	0.12	0.25	0.02*	0.11	0.09	0.02*	0.08
Orthopedic service/gynecology service	0.02*	0.06	0.02*	0.02*	0.02*	0.02*	0.02*
Chest diseases service/gynecology service	0.02*	0.13	0.02*	0.03*	0.02*	0.02*	0.02*

TABLE 5: The relationship between practices that make a significant difference between clinics in night shift.

Night	Interventional Practice	External Practices	Diagnosis and Treatment	Education Activities	Drug Preparation	Registration Process	Non-Clinical Procedures
Internal medicine service/orthopedic service	0.02*	0.48	0.02*	0.24	0.02*	0.25	0.18
Internal medicine/chest diseases service	0.02*	0.44	0.02*	0.88	0.02*	0.56	0.1
Internal medicine/gynecology service	0.02*	0.81	0.02*	0.08	0.02*	0.01*	0.01*
Orthopedic service/chest diseases service	0.56	-	0.02*	0.02*	0.04*	-	0.31
Orthopedic service/gynecology service	0.02*	0.15	0.02*	0.02*	0.02*	0.01*	0.01*
Chest diseases service/gynecology service	0.02*	0.04*	0.02*	0.02*	0.02*	0.01*	0.01*

The average time taken for drug preparation were; for the internal medicine service was 32.50 minutes during the day, and 51.25 minutes at night; 68.75 minutes during the daytime, and 77.50 minutes at night for the orthopedics service; 52.50 minutes for the service of thoracic diseases, 89.25 minutes at night; and was 11.50 minutes during the day and 15.00 minutes at night for the obstetrics clinic. The drug preparation times in the day shift for the internal medicine clinic were statistically significantly longer than for the orthopedics and obstetrics services (p=0.02). The comparison of surgical clinics among

themselves demonstrated that drug preparation times in both orthopedics and clinics of thoracic diseases were statistically longer than in the obstetrics and gynecology clinics. Similarly, drug preparation times during the night shift were statistically longer for all of the clinics than during day shifts (Table 3, Table 4).

The observed approximate durations for pharmacy transactions were 28.25 minutes during the day and 26.25 minutes at night in the internal medicine service; 37.50 minutes in the daytime, 12.50 minutes during the night in the orthopedics service, 43.00 minutes in the daytime in the clinic of thoracic diseases, and 20 minutes at night; and was 8.75 minutes during the day and 4.25 minutes at night in the obstetrics clinic; there was no statistically significant difference among the clinics. Although the durations for the orthopedics clinics and the clinics of thoracic diseases were not statistically significant compared to other clinics, the longer duration was associated with excess control visits and CV orders (Table 3, Table 4, Table 5).

The approximate emergency response times were; for the internal medicine clinic it was 85 minutes during the day and 115 minutes at night; 84.33 minutes during the day and 210 minutes at night for clinics of thoracic diseases; and it was 54.50 minutes during the day and 62.00 minutes at night for the obstetrics clinic; there were no emergency incidences in the orthopedics clinic (Table 3).

The approximate consultation times were; for internal medicine services, was 21 minutes at night no daytime consultation during the study; from the orthopedics service 25 minutes during the day, 10 minutes during the night, 17.50 minutes in the daytime in the clinics of thoracic diseases service, and none was requested at night; and finally, it was 13.50 minutes during the day and 17.00 minutes at night in the obstetrics service. There was no statistically significant difference between the clinics (Table 3).

Approximate time spent on training activities were 27.50 minutes during the day and 65.00 minutes at night for the internal medicine service; 91.25 minutes during the day and 88.75 minutes at night for the orthopedics service, 48.67 minutes during the day, and 51.25 minutes at night in clinics of thoracic diseases; and 83.75 minutes during the day and 95.50 minutes at night in the obstetrics service. There was no statistically significant difference between the clinics. Increase in the time allocated to night training; patients admitted to the emergency room at night were associated with pre-op preparation processes and breast milk counseling. The increased time spent on night training; may be associated with the admittance of emergency patients at night, pre-op preparations, and breast milk counseling (Table 3).

The average time spent on registration processes was; 43.50 minutes in the daytime and 98.75.00 minutes at night for the internal medicine service; 148.75 minutes during the day and 137.75 minutes at night for the orthopedics service, 96.75 minutes during the day, and 129.00 minutes at night in service for thoracic diseases; and was 49.75 minutes during the day and 52.00 minutes at night for the obstetrics clinics (Table 3).

The total average time allocated by all of the clinics for registration was; 84.5 in the daytime and 104.2 at night, this difference was statistically significant ($p<0.05$). The difference may be attributed to prolonged drug preparation during the nighttime and to increased training activities (Table 5).

The average time allocated for the services received from ancillary units were; 16.25 minutes during the day, and 88.75 minutes at night for the internal medicine service; for the orthopedics service 67.50 minutes during the day, and 30 minutes at night; 88.75 minutes during the day and, 26.25 minutes at night in clinics of thoracic diseases; and 23.25 minutes during the day and 14.00 minutes at night for the obstetrics service. The increased allocation times by orthopedics and service of thoracic diseases were due to increased demand for ancillary services like tomography and other imaging and diagnostic laboratories (Table 3).

DISCUSSION

Of the ten sub-titles in our study; interventional procedures, external applications, diagnosis & treatment procedures, educational activities, and drug administrations were grouped under patient care services and

consultations, registrations, pharmacy transactions, and non-clinical procedures as indirect care practices. Throughout 17,280 minutes at daytime and 16,200 minutes at night for a total of 33,480 minutes, practices and their durations were recorded by the participating nurses themselves.

The time spent on one-to-one patient care practices such as interventional practices, external practices, diagnosis & treatment, educational activities, emergency, and medication practices were 3,853 minutes, whereas, for indirect care practices like the time spent on consultation, registration, pharmacy transactions, and non-clinical procedures were 1,239 minutes.

Of the documented 33,480 minutes of practices, 17,338 (51.7%) minutes were spent on patient care practices, and 5,575 minutes (16.6%) were spent on indirect care practices. The remaining 31.7% of the time has been considered to be spent on personal needs and other clinic-related activities.

When the ten sub-titles were sorted according to the time allocated for each, the following order was observed; the interventional practices the first, followed by diagnosis & treatment practices, registration procedures, training activities, emergency, drug applications, non-clinical procedures, and pharmacy transactions the last.

A time study was conducted by Hendrich et al. to determine how nurses spend their time, to identify inefficiencies in work processes, and to design a better and efficient nursing practice. The study was carried out with the participation of 767 nurses from 36 units; more than three-quarters of the nurses dedicate more than 50% of their time to nursing practices, the first three of which were as follows respectively; documentation 35.3%, drug administration 17.2% and care coordination 20.6%.[6]

According to the nursing practice list, time spent by the nurses were; primary care practices (37% in the day shift, 34% in the night shift), followed respectively by; registrations (12% in the day shift, 12.5% in the night shift), diagnostics (19.1% in the day shift, 18.5% in the night shift), non-nursing practices (15% in the day shift, 19% in the night shift), indirect heath practices (11% in the day shift, 12% in the night shift) and individual activities (6% in the day shift, 4% in the night shift).[6]

Among the prominent findings in the list of nursing practices were the high time allocations to practices that are no nursing duties and to indirect practices. While the time nurses devote for primary patient care practices in intensive care units was 37% in the day shift and 34% in the night shift, high figures like 15% during the day and 19% at night were also found in non-nursing practices as well.[7]

In a study conducted in surgical and internal medicine clinics by Yıldırım et al., it was demonstrated that 53% of the procedures performed by the nurses were related to primary patient care, 16% to indirect patient care, 15% to service-related procedures, and 16% to personal needs.[8]

In another study conducted with oncology nurses, similar results were attained namely, the percentage of time devoted for primary patient care was 50.28% (1064.6 minute), 30.43% (644.3 minute) for indirect patient care, 1.23% (26 minute) for ward-related procedures, and was 18.06% (382.3 minute) for personal procedures.[9]

Türkmen and Uslu (2011) demonstrated in a study from a private hospital that in a 12-hour shift, approximately one hour was spent for indirect procedures associated with the service, and more than one hour per patient (1.11±0.20 hours) was devoted to indirect care practices, also noting that the time allocated for indirect care practices was longer during the night than during the day shift.[10]

In an observational explorative study based on time measurement, 90 hours of observation were made to determine the time nurses spend on indirect and primary care practices in internal, surgical, and private clinics, the time allocated for indirect care practices in surgical clinics were 23 hours, for internal clinics were 18 hours and 39 minutes, and 10 hours and 8 minutes in infectious diseases services. The 42% (37 hours and 49 minutes) of the remaining time was committed to primary care practices.[11]

In a study, carried out by Ekiki and Gürcay from 8 clinics with a capacity of 150 beds apart from the intensive care unit, a total of 17,517 nursing activities were recorded during the day shift, of these, 46%

were directly related to nursing practices, this is followed by 20% to indirect and personal procedures, and activities concerning the operation of the clinic with 14%.[4]

Care practices account for 35-55%, drug administration constitutes 28.7%, follow-up of vital signs 25.6%, and communication with physicians 9.6% of all nursing practices.[12]

In the same study, 12,902 nursing activities were registered during the night shift, and it was demonstrated that 44.2% of the activities were primary nursing practices, 21.6% indirect practices and 14% of them were activities concerning the workings of the clinic.[4]

The proportion of primary nursing practices, care practices, drug administration, and monitoring of vital activities through communication with doctors was 32%, 28.4%, 27.7%, and 10% respectively.[13]

In a descriptive/exploratory study to predict the time allocated to primary and indirect care practices by applying the Nursing Activity Scale on the data obtained from the hospital electronic archive records, the average nursing care duration was estimated to be 29.5 hours; of which 27.4 hours were to primary care practices and 2.1 hours to indirect care practices.[10] Unfortunately, it is a fact that nurses whose primary duty should be patient care and related functions as expected from their formation spend half of their time on indirect care practices and service organizations. The results are similar both in our study and in the literature.

Comparable results were also obtained from a similar study conducted via e-mail by the participation of 151 nurses from 8 states of Brazil. The aim of the study was to determine the perceptions of nurses regarding 28 indirect care practices; two issues, monitoring employees' progress in training and development and the support of physicians, and conflict mediation, came forth as indirect care practices.[14]

In our study, consultation services, pharmacy transactions, and organization of non-clinical matters stood out as the first three topics concerning indirect care practices. The organization of consultation services, physician support, arranging interrelation among pharmacy and other professional groups can be considered as conflict mediation-like therefore our study has quite a resemblance with other studies in this respect.

In our study, the 3 subjects receiving the most attention were: interventional practices, diagnosis-treatment practices, and registration procedures. In this respect, our study exhibits concordance with the results of Tuna et al. and Hendrich et al.[6-12]

CONCLUSION

As a result; it was determined that nurses spent 20% of their daily shifts for indirect care practices. In order to ensure patient satisfaction and success in healthcare, it is mandatory to increase the time allocated by the nurses to direct care practices. In order to talk about sucess in patient satisfaction and care indicators, the need to increase the time that nurses allotate for direct care practices is inevitable.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

All authors contributed equally while this study preparing.

REFERENCES

1. Avcı GG, Türker S, Çifçi M, Sürücü Ş. Yoğun bakım hemşirelerinin iş yükünün belirlenmesi [Determination of workload of intensive care unit nurses]. Yoğun Bakım Dergisi. 2013;4:21-4. [Link]
2. Campos MS, Oliveira BA, Perroca MG. Workload of nurses: observational study of indirect care activities/interventions. Rev Bras Enferm. 2018;71(2):297-305. English, Portuguese. [Crossref] [PubMed]
3. Bal DM. Yataklı tedavi kurumlarında hemşire insangücü planlama yaklaşımları [Nursing manpower planning approaches in hospital]. Sağlık ve Hemşirelik Yönetim Dergisi. 2014;3(1):148-54. [Crossref]
4. Ekiki D, Gurcay E. Nursing time allocation: a wok sampling survey in a Turkish private hospital. International Journal of Hospital Research. 2016;5(2):58-63. [Crossref]
5. Goh ML, Ang ENK, Chan YH, He HG, Vehviläinen-Julkunen K. Patient satisfaction is linked to nursing workload in a Singapore hospital. Clin Nurs Res. 2018;27(6):692-713. [Crossref] [PubMed]
6. Hendrich A, Chow MP, Skierczynski BA, Lu Z. A 36-hospital time and motion study: how do medical-surgical nurses spend their time? Perm J. 2008;12(3):25-34. [Crossref] [PubMed] [PMC]
7. Kakushi LE, Evora YD. Direct and indirect nursing care time in an intensive care unit. Rev Lat Am Enfermagem. 2014;22(1):150-7. [Crossref] [PubMed] [PMC]
8. Yıldırım D. Hemşirelerin servislerde hastalarla ilgili ve diğer işlere ayırdıkları sürenin belirlenmesi [Nurses staff allocation related to patient and other interventions in the wards]. Florence Nightingale Hemşirelik Dergisi. 2006;14(56):177-92. [Link]
9. Özkan Ş, Uydacı M. Kamu hastanelerinde iş yüküne dayalı hemşire işgücü gereksiniminin belirlenmesi [Determining nurse workforce requirement based on workload in the public hospitals]. Sağlık ve Hemşirelik Yönetimi Dergisi. 2020;3(7):339-51. [Link]
10. Türkmen E, Uslu A. Özel bir hastanede hemşirelerin dolaylı bakım uygulamalarının değerlendirilmesi [Evaluation of indirect nursing care practices in a private hospital]. Florence Nightingale Hemşirelik Dergisi. 2011;19(2):60-7. [Link]
11. Tuna R, Baykal Ü, Türkmen E, Aytolan Y. Onkoloji hemşirelerinin ayaktan kemoterapi biriminde hasta bakım uygulamalarına ve diğer işlere ayırdıkları sürenin belirlenmesi [Determining the lenght of oncology nurses allocation to patient care practices and other interventions in ambulatory oncology unit]. Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi. 2015;18(4):274-81. [Link]
12. Tuna R, Kahraman B, Ödül Özkaya B. Cerrahi hemşirelerinin hasta bakım uygulamalarına ve diğer işlere ayırdıkları sürenin belirlenmesi [Determining the lenght of surgical nurses' allocation to patient care practices and other interventions]. Jaren. 2020;6(3):442-7. [Link]
13. McGillis Hall L, Doran D, Pink GH. Nurse staffing models, nursing hours, and patient safety outcomes. J Nurs Adm. 2004;34(1):41-5. [Crossref] [PubMed]
14. de Souza P, Cucolo DF, Perroca MG. Nursing workload: influence of indirect care interventions. Rev Esc Enferm USP. 2019;53:e03440. [Crossref] [PubMed]