Original Article

An Examination of the Nursing Records of Cerebrovascular Disease Patients in Intensive Care

Nuran Gencturk, PhD
Assistant Professor, Istanbul University Faculty of Health Science, Istanbul, Turkey

Fatma Ay, PhD
Assistant Professor, Istanbul University Faculty of Health Science, Istanbul, Turkey

Şenay Demirci, RN
Ankara Ataturk Education and Research Hospital, Ankara, Turkey

Zehra Acamur, RN
Ankara Ataturk Education and Research Hospital, Ankara, Turkey

Seval Izdeş, PhD
Professor, Ankara Ataturk Education and Research Hospital, Ankara, Turkey

Aygul Bulut, RN
Ankara Ataturk Education and Research Hospital, Ankara, Turkey

Correspondence: Assistant Professor, Ph.D. Nuran Gencturk**,** Istanbul University Faculty of Health Science, Post Adress: Demirkapi Caddesi, Karabal Sokak Ruh ve Sinir Hastaliklari Hastanesi Bahceici, 34740 Bakırkoy Istanbul, Turkey e-mail: gencnur@yahoo.com

Abstract

Background: In cerebrovascular diseases, the risk of mortality is high, especially in the acute phase. Since cerebrovascular diseases cause prominent loss of functioning among its survivors, these patients also require long term assistance and care.
Objective: Determine the nursing care needs of acute cerebrovascular disease patients in the intensive care unit and the nursing interventions provided for them.
Methodology: In this retrospective study, the cohort method was used. The sample consisted of 43 patient files admitted with the diagnosis of acute cerebrovascular disease. Data was obtained by the researchers through the examination of nursing observation and record forms.
Results: The mean age of the patients was 64,21 ± 15,16. Among 43 patients, total length of hospital stay was 539 days, and the mean length was 12.5 days. Nurses regularly recorded body temperature, blood pressure, pulse, respiration, O_2 saturation, intake-output, and hourly urine.
Conclusions: Documenting nursing care is necessary for obtaining knowledge and managing nursing care. While nurses regularly and fully record medicine applications and vital sign monitoring results, the records pertaining to their care interventions are insufficient. Nursing records should be organized and full in order to ensure the continuity of the care provided and to increase the quality of nursing care.

Key Words: Intensive care nursing, Intensive care nurses, nurse-patient ratio

Introduction

The population of the world, especially in developed countries, is getting older, with the population above 65 years of age increasing fast. In the last century, causes of death have enormously changed with the population getting older and the developments in medicine. The rate of deaths related to infectious diseases have decreased and deaths caused by chronic diseases, especially in the older population, have increased. According to the projections, the five most common causes of death in the year 2020 were suggested to be ischemic heart diseases, cerebrovascular diseases (CVD), chronic obstructive lung disease, lower respiratory tract infections, and lung cancer (Aydogan & Uygun, 2011). According to the 2012 data of the Turkish Institute of Statistics, the most common cause of death was circulatory system diseases with a rate of 37.9%, while cerebrovascular diseases took the second place among such circulatory diseases, causing 25.7% of deaths.

Background

In cerebrovascular diseases, the risk of mortality is high, especially in the acute phase. Since cerebrovascular diseases cause prominent loss of functioning among its survivors, these patients also require long term assistance and care (Yisldirim, 2008).Intensive care units are care centers where an abundance of life saving technological tools are present to provide the best possible benefit to patients whose lives are under risk, such as patients with cerebrovascular diseases, where ventilator support is provided and an the interdisciplinary teamwork of a specially trained health care team is necessary (Terzi & Kaya, 2011; Kurucu et al., 2013). Nursing care in intensive care units, where interventional procedures are often performed and the morbidity and mortality rates are very high, is very important in order to prevent possible problems, reduce risks, provide self-care for the patients, and increase their quality of life (Terzi & Kaya, 2011). Intensive care nursing requires special training, the utilization of research findings, and a quick and correct decision making process in order to provide safe care to patients in critical condition (Kavakli et al., 2009).Nursing records provide a form of communication between the members of the health care team. Recorded care is provided according to the needs of an individual and makes it easier to obtain knowledge on treatment outcomes, to evaluate the provided care continuously, to form a database, and to provide legal support for nurses (Ay, 2009). This retrospective cohort study was carried out for determining the nursing care needs of acute cerebrovascular disease patients in intensive care units and the nursing interventions provided.

Methodology

Design

In this retrospective study, the cohort method was used. The sample of the study consisted of the files of 43 patients admitted with the diagnosis of cerebrovascular diseases to the intensive care unit between March 1st 2011 and March 1st 2012.

Sample and data collection

A form prepared by the researchers according to literature was used. The researcher was included demographic information, length of hospital stay, presence of chronic diseases, and the applied nursing intervention records belonging and the patients were examined as well as the bills given to the patients after their cases were closed. Since they require both medical care and nursing care, only patients with CVD were included in the study. Data was obtained by the researchers through the examination of nursing observation and record forms belonging to the patients.

Data analysis

Evaluation of the data obtained in this study was done with SPSS for windows 20.0 statistics package program. Frequency and percentage distributions were examined.

Ethical considerations

Written permission was taken from the head physician's office at our hospital in order to examine patient files (B.30.2.YBU.006.06.01 / 36 number ethics committee approval was presented in the appendix.).

Results

Among 43 patients, 51.2% were female and 48.8% were male. Mean age of the patients was 64.21±15.16 (minimum age 21, maximum age 89). The length of intensive care stay changed between 1 and 80 days. The total length of hospital stay in 43 patients was 539 days and the mean length of stay was 12.5 days. Among the patients, 46.5%

were admitted to intensive care when they were conscious and 58.1% were discharged from intensive care and were referred to another unit. 76.7% of the patients had a chronic disease and 72.1% had hypertension. Among the patients, 60.5% received ventilation, 65.1% had a central venous catheter attached, and 86.0% received total parenteral nutrition. The Glasgow Coma Scale was administered to all patients (Table 1).

Table 1. Applications received by patients (N = 43)

Applications		n	%
Status of applying ventilation	Yes	26	60,5
	No	17	39,5
	Mean number of days with ventilation applications 11.19±15.25 (Minimum1 day Maximum 60 days)		
Status of applying Cardio Pulmonary Resuscitation (CPR)	Yes	14	32,6
	No	29	67,4
Status of applying intubation	Yes	26	60,5
	No	17	39,5
Status of opening Tracheostomy	Yes	5	11,6
	No	38	88,4
Status of inserting central venous catheter	Yes	28	65,1
	No	15	34,9
Status of applying total parenteral nutrition (TPN)	Yes	37	86
	No	6	14
	Mean number of days with TPN application 8.95±8.55 (Minimum 1 day Maximum 39 days)		
Status of applying Enteral nutrition	Yes	18	41,9
	No	25	58,1
	Mean number of days with EB application 17.56±19.73 (Minimum 2 days Maximum 67 days)		
Status of applying the Ramsey Scale	Yes	9	20,9
	No	34	79,1
	Mean Ramsey scale score 3.22±1.92 (Minimum 1 point, Maximum 6 points)		
Status of applying the Glasgow Coma Scale	Yes	43	100
	No	0	0
	Mean Glasgow Coma Scale score 9.19±4.75 (Minimum 3 points, Maximum 15 points)		

Table 2. Nursing interventions performed on CVD patients (N = 43 and a total of 539 patient days)

Interventions	Frequency of routine application	Recorded number
Hygiene and care practices		
Oral care	6x1/day	4106
Maintaining hand-face hygiene	4x1/day	2305
Perineum care	2x1/day	436
Hair care (2 patient records)	2x1/week	3
Haircut (1 patient record)	Once in 2 weeks	8
Shaving the beard (1 patient record)	2x1/week	4
Eye care	6x1/day	1063
Patient mobilization (3 patient records)	At least once a day	6
Medical care, follow-up, and observation applications		
Body temperature, blood pressure, pulse, respiration, O2 saturation measurements	24x1/day	12936
Monitoring arterial or venous pressure(3 patient records)	24x1/day	103
Input-output monitorization	24x1/day	12936
Urination per hour	24x1/day	12936
Monitoring consciousness and pupils (7 patient records)	2x1/day	155
Seizures (2 patient records)	Constant observation	25
Vomiting (1 patient record)	Postop constant observation	1
Central artery-venous catheter care	Once every 2 days	116
Performing aspiration	6x1 (minimum)	2313
Monitoring patients for risk of falling	2x1/day	24
Monitoring patients for risk of bleeding (2 patient records)	3x1/day (minimum)	8
Providing pain management (4 patient records)	12x1/day (if pain is present)	15
Changing position	12x1/day	1628
Heat application (1 patient record)	In the early postop period	1

Cold application (5 patient records)	Until body temperature decreases	18
Enteral feeding tube care (1 patient record)	3x1/day	80
Tracheostomy cannula care (3 patient records)	4x1/day	476
Intubation tube care (3 patient records)	Once every 2 days	7
Closed chest tube monitorization (1 patient record)	24x1/day	408
Pneumatic compression sock application (3 patient records)	Constantly for every patient	6
Discharge training (1 patient record)	Once during discharge	1
Postural drainage (3 patient records)	3x1/day	145
Respiratory exercises (3 patient records)	12x1/day	264
Parenteral medicine and invasive applications		
Parenteral medicine applications	Changes according to order	0
Inserting IV catheter	Changed every 4 days in all patients	0
Monitoring perfusion	24x1/day	0
Drawing blood for blood tests	1x1/day (minimum)	0
O_2 treatment application (15 minutes/hour)	24x1/day	192
Inhaler medicine applications	Changes according to order	420
Monitoring blood sugar	4x1/day (minimum)	3004

As seen in Table 2, nurses regularly recorded body temperature, blood pressure, pulse, respiration, O^2 saturation measure, input-output, and urination per hour. Hygiene and care practices were regularly performed by nurses but were not recorded on a regular basis (Table 2).

Among 43 patients, we were able to reach only 32 patients' examination-treatment, medicine, and total cost information. The mean investigation and treatment costs of 32 patients were 5211 $ and the minimum and maximum costs were 224 $ and 20656 $, respectively. The mean medicine cost of 32 patients were 4311 $ and the minimum and maximum costs were 16 $ and 22932 $, respectively. Intensive care costs pertaining to nursing care were not provided on the written documents.

Discussion

Risk factors for cerebrovascular diseases are discussed in two groups, which are controllable and uncontrollable risk factors. Diseases such as hypertension, high cholesterol levels, atrial fibrillation and heart disease, and diabetes mellitus have controllable risk factors. Advanced age, being male, family history and previous history of stroke are among uncontrollable risk factors (Akdemir, 2005; Fesci et al., 2006; Yisldirim, 2008; Ozturk, 2010). In parallel with the literature, in our study,

51.2% of the patients were aged 65 years or above, 72.1% had hypertension, 20.9% had coronary artery disease, 20.9% had diabetes mellitus, and 16.3% had a previous history of cerebrovascular disease.

In Turkey, cerebrovascular diseases are not fully recorded as causes of death in death reports. Instead, cardiopulmonary arrest is shown as the cause of death. This situation misguides statistics and leads to obtaining ratios which are lower than the actual values (Ozturk, 2010). According to our results, in approximately all of the patients who leave intensive care through exitus, the cause of death was determined to be cardiac arrest. In this context, our study results are consistent with the literature.

The first 24-28 hours following CVD development is important in terms of performing acute interventions (Fesci et al., 2006). In the relevant literature, it was reported that approximately 50% of patients who were admitted to intensive care needed mechanical ventilation (Uysal et al., 2010; Kurucu et al., 2013). Our finding is consistent with the literature.

Total scores obtained from the Glasgow Coma Scale, which is used for monitoring the consciousness level of patients, are evaluated as awake (13-15 points), precoma (9-12 points), and coma (8 points and lower) (Kas Keskin, 2008). In our study, it was found that 37.2% of the patients were awake, 18.6% were in precoma, and 44.2% were in coma. When we compared the Glasgow Coma Scale scores of the patients according to the type of discharge from intensive care, we observed that patients who had lower scores or who were in coma left intensive care through exitus and that increased scores were associated with improvements in the patient's medical status and being referred to another unit. In the literature, it was determined that patients with a high Glasgow Coma Scale score at admission to intensive care continue to have high scores during discharge and that these patients stayed at intensive care for a shortened duration (Ozkan & Sahinoglu, 2009; Kurucu et al., 2013). Our findings are consistent with the literature.

Interventions regarding bathing and maintaining oral health, which are among the fundamental care needs that cannot be performed by stroke patients, are recorded on a frequent basis (Turk et al., 2010). In a study by Turk et al. (2010), it was found that interventions regarding bathing and maintaining oral health are among the most recorded interventions by nurses. On the other hand, in a study by Demir (2004), it was determined that only 70% of nurses recorded applications of oral care, whereas perineum care was not recorded at all. When we examined the recording rates of self-care practices, which are among the main functions of nurses and are needed the most by intensive care patients, we observed that hand-face, oral, and eye care was recorded the most (Table 2). In previous studies, it was reported that corneal abrasions can occur within short periods of time ranging from 48 hours to one week in intensive care units. Therefore, it is very important to maintain the moisture of eyes in nursing care (Kocacal & Eser, 2008). Our study finding supports the literature. Male patients who stay at intensive care for a long time receive haircuts and have their beards shaved on a regular basis but the recording rate of these practices are low. It was assumed that these practices were not noted in nurses records since haircuts and shaves were performed by special personnel.

When we examine Table 2, we see that nurses mostly recorded medical care, follow-up, and monitoring practices and that nurses regularly recorded vital signs, input-output, and urination per hour. Vital signs are among the fundamental indicators of health status (Isik, 2012). These practices are identified with nurses by the Turkish society and are the widely performed (Turk et al., 2010). Our study finding is consistent with the literature (Demir, 2004; Turk et al., 2010). This result can be explained by the fact that measurements in intensive care are constantly taken via devices that has advanced monitorization characteristics and that special and detailed forms are being used.

In a study by Turk et al. (2010), it was found that neurological follow-up care is the least recorded nursing intervention. Although monitoring consciousness, pupils, seizures, and vomiting are among observations conducted continuously for 24 hours in patients with CVD and in those who present with unconsciousness; we determined that these observations were recorded only when they were present (Table 2). Due to this reason, the rate

of recording in this area is very low.

Intensive care units are special units that have their own medicine record forms. Therefore, records of medicine applications were not included in nurse records and their recording status could not be determined since they are included in forms that are mutually used with doctors. However, it can be said that they were recorded completely and regularly. In the literature, it was reported that stroke patients have hypo/hyperglycemia (Nilsen, 2010; Turk et al., 2010). As shown in Table 2, the most recorded invasive application was blood sugar measurement. This result can be explained by the fact that protocols pertaining to blood sugar monitoring were determined by institutions and that separate record forms were used for recording blood sugar.

In numerous studies, medical costs in terminal patients were found to be high due to factors including frequency of hospitalization, long hospital stays, total parenteral nutrition, chemotherapy, and ventilator use (Jung et al., 2012). The mean lifetime cost of ischemic stroke in the United States is estimated to be $140 048. This amount includes inpatient care, rehabilitation, and follow-up care, which are necessary due to lasting deficits. Between 2012 and 2030, total direct medical stroke related costs are projected to triple, from $71.6 billion to $184.1 billion, with the majority of the projected increase in costs arising from those 65 to 79 years of age (Go et al., 2014). In a study by Kart et al. (2011), it was found that the bills of terminal patients who stayed at intensive care were approximately 208200 TL (129317 $) and that the mean daily cost of each patient was 893 TL (555 $). When costs of patient care, nutrition, and antibiotic expenses; which are not included in bills, were added, the costs increased by two times (496384 TL – 308313 $) (Kart et al., 2011). It can be said that problems about billing applications performed in intensive care in Turkey were reflected in our study and that billing was insufficient since nursing applications are frequently not recorded accurately.

Conclusion

According to our study results, nurses perform many dependent and independent functions in intensive care units, however, nurses' rate of recording the applications they performed is very low. While nurses regularly and completely record medicine applications and vital signs, they fail to of our study results, we recommend to form a national and standard nursing record system in record care interventions at sufficient rates. Furthermore, nurses record observation results only if there is an anomaly. In order to maintain the continuity of care and to increase the quality of health care, nursing records should be organized and complete. Incomplete recording of nursing interventions may lead people to think that these applications were not performed by nurses and that nurses do not fulfill their duties. On the other hand, in intensive care units, nurses have heavy workloads and they monitor patients and provide care regularly and completely. Nurses who work in intensive care also have to make critical decisions and are completely responsible for patients' physical care needs. Incomplete records do not indicate that nurses are not fulfilling their duties. Insufficient recording of applications can be attributed to factors such as workload, insufficient number of nursing personnel, severe clinical condition of patients, and the length and complexity of record forms. Due to these factors, nurses do not have time to record the procedures they performed and therefore they ignore recording such applications. Documentation of nursing care is necessary in order to increase knowledge and manage care. In the light order to make nursing applications more observable, to be able to evaluate the quality of care, and to guide clinical and managerial decisions.

Conclusion and implication for practice

Documentation of nursing care is necessary in order to increase knowledge and manage care. In the light of our study results, we recommend to form a national and standard nursing record system in order to make nursing applications more observable, to be able to evaluate the quality of care, and to guide clinical and managerial decisions.

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