

Challenges Facing Nurses Toward Providing Care to Patients with Cerebrovascular Accidents: A Mixed Methods Study

Firas Khider Abdullah lilu* Mohammed Baqer Abbas Al-Jubouri, Ph.D**

ABSTRACT

Background: Understanding the challenges facing nurses toward providing care to patients with cerebrovascular accidents is the initial step in developing strategies to address these challenges, thereby ensuring high-quality care.

Aim: The study aimed to assess the challenges experienced by nurses in delivering care to patients with CVAs in neurological wards.

Results: Of the 80 questionnaire participants in the qualitative part, (MS = 0.66) reported a "moderate" rating as an overall assessment. These challenges are divided into workload (MS = 0.53) at a moderate rate, the psychological burden (MS = 0.85) at a high rate, the supporting materials (MS = 0.85) at a high rate, the sense of responsibility (MS = 0.77) at a high rate, and the role conflict (MS = 0.50) at a moderate rate. Six themes were identified as challenges during the interviews of 23 participants in the qualitative part, which include inadequate training and education for nurses, nursing roles, nurse-to-patient ratio, communication, administrative difficulties, and patient transfer.

Conclusions: The nurses face a range of challenges that impede the provision of nursing care to patients with CVAs. These challenges encompass diverse dimensions, including the psychological and physical burden experienced by nurses, insufficient availability of supportive materials, increased responsibilities, role conflict, inadequate education and training, staffing shortages, administrative hurdles, communication difficulties, and challenges associated with patient transfer processes.

Keywords: Cerebrovascular Accidents, Nursing Care, Nursing Challenges, Mixed Methods Study

INTRODUCTION

Cerebrovascular accidents (CVAs), commonly known as strokes¹, remain the third most common cause of disability and the second most common cause of death worldwide, with an estimated cost exceeding \$721 billion². According to the World Health Organization, Iraq witnessed 20,793 CVA-related deaths, accounting for 14.19% of all mortality.

Iraq ranks 31st globally with an age-adjusted death rate of 128.44 per 100,000 people³. CVAs encompass various types, including ischemic CVAs, hemorrhagic CVAs, transient ischemic attacks, and cryptogenic CVAs⁴. These types reduce blood flow, nutrients, and oxygen to specific areas of the brain, leading to nerve cell damage and subsequent neurological impairments¹. Risk factors for CVAs include continuous high blood pressure, hypercholesterolemia, smoking, obesity, and diabetes⁵. Additionally, emboli can form due to conditions like atrial fibrillation or rheumatic fever⁶. Early rehabilitation, secondary prophylaxis, reperfusion therapy, and research into the underlying causes can significantly improve prognosis⁷. Adequate assessment and counselling during treatment are crucial for acute CVA patients⁸. However, clinical and neurological complications during hospital stays

can adversely affect patient outcomes, leading to delayed discharge, higher hospital expenses, and increased in-hospital mortality rates⁷.

Nurses play a critical role in all phases of CVA care, including emergency or hyperacute care, as well as acute care in various settings such as intensive care units, intermediate care units, CVA units, and general medical units⁹. Within CVA units, nurses have extensive duties, including assessment, identification of life-threatening difficulties, monitoring, rehabilitation, and psychological support for recovery¹⁰⁻¹¹. Anticipating, preventing, detecting, and managing medical complications is crucial for patients who have experienced an acute CVA, as these factors directly or indirectly impact clinical outcomes⁹. However, nurses face challenges in fulfilling their responsibilities, including a lack of training and confusion about their roles, which can affect the level of care provided to CVA patients¹².

Several factors hinder the provision of comprehensive CVAs care, including fragmented care systems, lack of coordination among the care team, inconsistent post-discharge care, and limited knowledge among patients and healthcare providers regarding CVAs care^{13,14}. In-hospital challenges for CVAs care include comorbidities, restrictions on thrombolytic therapy, and delays in detecting CVA patients¹⁵. Patient

* Academic Bachelor's Nurse
Baquba Teaching Hospital
Diyala Health Directorate , Iraqi Ministry of Health
Master Student, Adult Nursing Department, College of Nursing
University of Baghdad
Iraq
E-mail : firas.lilu2102m@conursing.uobaghdad.edu.iq

** Associate Professor
Adult Nursing Department, University of Baghdad
College of Nursing, Iraq.

dissatisfaction with nursing care in neurological wards further adds to these challenges¹⁶. Nurses also face anxiety related to routine work, workload pressures, conflicting demands, and interactions between patients' families and physicians¹⁷. Gaps in nursing research on acute CVA care highlight the need to address specific requirements for specialized nursing care⁹. The aging population and population growth exacerbate the challenges of providing CVA care while ensuring high-quality patient outcomes, necessitating proficiency in CVA care among healthcare practitioners^{18,19}. Furthermore, a study conducted by Jiyad and Muhammed in Anbar Governorate, Iraq, observed a noticeable decrease in the standard of nursing care provided to CVAs patients²⁰.

Further research is warranted to determine the competency needs of healthcare personnel in response to the growing demand for CVA care¹⁹. Understanding the barriers and challenges is the initial step in addressing nursing issues²¹. Consequently, interventions aimed at improving the provision of high-quality care to populations at a relatively high risk of future CVAs can be enhanced through a better understanding of challenges²². It is essential to remove existing barriers and improve facilities to support compassionate nursing care²¹.

RESEARCH OBJECTIVES

To assess the challenges facing nurses in providing care for patients with cerebrovascular accidents in the neurological wards.

To determine the relationships between the challenges faced by nurses in the neurological wards and their demographic characteristics, such as age, gender, and education level.

METHODOLOGY

A convergent mixed methods design was employed to investigate the challenges faced by nurses in providing care for patients with cerebrovascular accidents (CVAs) in neurological wards. The study was conducted between January 9, 2023, and February 20, 2023, at Baquba Teaching Hospital in Diyala Governorate, Baquba City, Iraq, specifically in the neurology wards, including the Emergency, Internal Medicine, and Intensive Care Unit. Ethical approval was obtained from the College of Nursing at the University of Baghdad, and the Ministry of Health granted permission for the research, considering ethical considerations. The Challenges and Crisis Questionnaire Assessment tools, developed by Mahran et al., were used in the study, with permission from the original authors²³. Each participant in the study signed an agreement to participate.

For the quantitative method, a purposive sampling technique was employed to select 80 nurses. The inclusion criteria were nurses who provided direct nursing care to CVA patients at least once, nurses with a minimum of one year of experience in CVA care, and nurses of different genders, educational levels, ages, and shifts. Excluded from the study were nurses who did not work in intensive care, internal medicine, and emergency wards, as well as those who worked in these wards but did not provide care to CVA patients. The questionnaire used in this study comprised three parts: A Socio-Demographic Data form, a section on challenges faced by nurses in providing care to CVA patients, and qualitative questions that assessed the challenges faced by nurses in caring for patients with cerebrovascular accidents.

The Challenges and Crisis Questionnaire Assessments tools were employed after obtaining permission from the original authors. The questionnaire's reliability was assessed to be 0.89, indicating an acceptable level of reliability for use in this research. According to Mahran et al. (23), the original authors of the tool, a score of one was

assigned for a "yes" response, while a score of zero was assigned for a "no" response. The responses were categorized into low scores (0.0-0.33), medium scores (0.34-0.66), and high scores (0.67-1).

Qualitative data collection involved the use of open-ended questions during semi-structured interviews. A total of 23 nurses were interviewed until data saturation was reached. To ensure the credibility of the quantitative information, various strategies such as member checking, triangulation, and saturation were employed, following Lincoln and Guba's guidelines for ensuring trustworthiness in qualitative research²⁴. Quantitative data were analysed using a variety of data analysis methods, including descriptive and inferential statistics, with the assistance of the statistical package SPSS version 26.0. Qualitative data underwent qualitative content analysis, utilizing a thematic analysis approach.

RESULTS

Table 1: Distribution of Socio-Demographical Characteristics variables (N=80)

Variable	Classes	No	%
Gender	Male	49	61.3
	Female	31	38.8
	Total	80	100.0
Age	Mean (SD):27.24±3.52		
Education level	High school Nursing/ preparatory	6	7.5
	Diploma in Nursing	50	62.5
	Bachelor's degree in Nursing	23	28.8
	MSc in Nursing/PhD in Nursing	1	1.3
	Total	80	100
Years of Experience	Mean (SD):4.3±3.22		
Workplace	Total	80	100
	Internal Medicine Ward	26	32.5
	Emergency Ward	26	32.5
	Intensive Care Unit	28	35.0
	Total	80	100
Shift	Morning Shift Nurse	16	20.0
	Evening Shift Nurse	64	80.0
	Total	80	100

N: Number, %: Percentage, SD: Standard deviation

Table 2: Descriptive Statistics and Assessments challenges facing Nurses toward providing care to patients with cerebrovascular accident

Domain's Items	Resp.	No.	MS	Ass. (°)
Workload				
1. Increased workload assigned to him	No	26	0.68	H
	Yes	54		
2. Insufficient time to complete the assigned work	No	64	0.20	L
	Yes	16		
3. Increased need to work long hours (long shifts)	No	46	0.42	M
	Yes	34		
4. Caring for a large number of patients in a short time	No	24	0.70	H
	Yes	56		
5. Increased work at night or late hours	No	27	0.66	M
	Yes	53		

Domain's Items	Resp.	No.	MS	Ass. (*)
Total			0.53	M
Psychological Load				
1. Dealing with critical and chronic diseases with little hope of recovery	No	10	0.87	H
	Yes	70		
2. Fear of possible transmission of infection from patients	No	17	0.79	H
	Yes	63		
3. Dealing with patients with different values and beliefs	No	14	0.83	H
	Yes	66		
4. Dealing with patients who do not adhere to instructions	No	11	0.86	H
	Yes	69		
5. Lack of appreciation for the nurse's efforts	No	7	0.91	H
	Yes	73		
Total			0.85	H
Supportive Materials				
1. Lack of availability of beds, examination rooms, and some equipment and medicines	No	14	0.82	H
	Yes	66		
2. The lack of suitable nursing offices	No	17	0.79	H
	Yes	63		
3. The presence of some high-tech devices that exceed your capabilities and cognitive skills, and you have not received any training to deal with them	No	59	0.26	L
	Yes	21		
4. Lack of chance to introduce your abilities and skills	No	26	0.67	H
	Yes	54		
5. The work atmosphere is full of tension and stress	No	14	0.83	H
	Yes	66		
Total			0.67	H
Sense of Responsibility Items				
1. Sense of responsibility for some of the equipment and materials, medicines, and supplies	No	7	0.91	H
	Yes	73		
2. Sense of responsibility for some critical cases	No	3	0.96	H
	Yes	77		
3. Do not specify the duties and responsibilities of nursing	No	29	0.64	M
	Yes	51		
4. Lack of administrative and leadership competence of your superiors	No	29	0.64	M
	Yes	51		
5. Lack of support from superiors at work	No	24	0.70	H
	Yes	56		
Total			0.77	H
Role Conflict				
1. Working in long shifts, which causes interference with the duties of family	No	41	0.49	M
	Yes	39		
2. Family life suffers due to the choice of the nursing profession.	No	42	0.47	M
	Yes	38		
3. Instability in family life as a result of increased working hours and long working hours	No	35	0.56	M
	Yes	45		
Total			0.50	M
Overall domains			0.66	M

(*) Assessments Intervals Scoring Scales: [L: Low ((0.0-0.33)]; [M: Moderate (0.34 - 0.66)]; [H: High (0.67-1)].

Table 3: Correlation between nurse's age and main domains and

overall domain concerning challenges facing nurses towards providing care to patients with cerebrovascular accident

		Workload	Psychological load	Supportive materials	Sense of responsibility	Role conflict	Overall domains
Spearman's rho	Correlation Coefficient	-.134	.046	.084	-.025	.134	.055
	Sig. (2-tailed)	.236	.685	.461	.828	.237	.628
	N	80	80	80	80	80	80

* Correlation is significant at the 0.05 level (2-tailed).

Table 4: Correlation between nurse's years of experience and main domains concerning challenges Facing Nurses towards providing care to patients with cerebrovascular accident

		Years of Experience	Workload	Psychological load	Supportive materials	Sense of responsibility	Role conflict	Overall domains
Years of Experience	Correlation Coefficient	1.000	-.147	-.037	-.114	-.220	.066	-.102
	Sig. (2-tailed)	.	.192	.744	.316	.050	.563	.368
	N	80	80	80	80	80	80	80

* Correlation is significant at the 0.05 level (2-tailed). Testing based on Spearman's rho

Table 5: Differences regarding gender and main domains and overall domains concerning challenges Facing Nurses towards providing care to patients with cerebrovascular accidents

	Workload	Psychological load	Supportive materials	Sense of responsibility	Role conflict	Overall domains
Mann-Whitney U	619.000	710.000	582.500	739.000	647.500	668.500
Wilcoxon W	1115.000	1206.000	1078.500	1235.000	1872.500	1164.500
Z	-1.430	-.536	-1.817	-.215	-1.143	-.900
Asymp. Sig. (2-tailed)	.153	.592	.069	.830	.253	.368

S: Sig. at P<0.05; NS: Non Sig. at P>0.05

Table 6: Differences regarding shifts and main domains and overall domains concerning challenges Facing Nurses towards providing care to patients with cerebrovascular accidents

	Workload	Psychological load	Supportive materials	Sense of responsibility	Role conflict	Overall domains
Mann-Whitney U	354.500	464.500	509.000	462.000	384.000	386.500
Wilcoxon W	490.500	2544.500	2589.000	2542.000	520.000	522.500
Z	-1.952	-.627	-.038	-.638	-1.591	-1.512
Asymp. Sig. (2-tailed)	.051	.531	.970	.523	.112	.131

S: Sig. at P<0.05; NS: Non Sig. at P>0.05

Table 7: Differences regarding workplaces and main domains and overall domains concerning challenges Facing Nurses towards providing care to patients with cerebrovascular accidents

	Workload	Psychological load	Supportive materials	Sense of responsibility	Role conflict	Overall domains
Kruskal-Wallis H	17.074	.187	1.675	1.842	5.026	4.472
Df	2	2	2	2	2	2
Asymp. Sig.	.000	.911	.433	.398	.081	.107

S: Sig. at P<0.05; NS: Non Sig. at P>0.05

Table 8: Differences regarding education level and main domains and overall domains concerning challenges Facing Nurses towards providing care to patients with cerebrovascular accidents.

	Workload	Psychological load	Supportive materials	Sense of responsibility	Role conflict	Overall domains
Kruskal-Wallis H	17.211	.913	3.665	6.372	3.706	7.228
Df	3	3	3	3	3	3
Asymp. Sig.	.001	.822	.300	.095	.295	.065

S: Sig. at P<0.05; NS: Non Sig. at P>0.05

Table 9: Correlation between main domains concerning challenges Facing Nurses towards providing care to patients with cerebrovascular accident(N=80)

Corr. & P-value	Main Domains	Psychological Load	Supportive Materials	Sense of Responsibility	Role Conflict
Correlation	Workload	-0.291	-0.065	-.122	0.299*
	Psychological Load		0.198	0.099	-0.050
	Supportive Materials			.233*	0.269*
	Sense of Responsibility				-0.052
P-value	Workload	0.009	0.567	0.281	0.007
	Psychological Load		0.078	0.381	0.660
	Supportive Materials			0.038	0.016
	Sense of Responsibility				0.650

(*) Correlation is significant at the 0.05 level (2-tailed).; Statistical hypothesis are based on Spearman's rho Coefficients.

Qualitative Findings: The interviews were manually analyzed, and six themes related to the challenges faced by nurses in providing care for patients with cerebrovascular accidents (CVAs) were identified. These themes include inadequate training and education for nurses, nursing roles, nurse-to-patient ratio, communication, administrative difficulties, and patient transfer. These themes provide a comprehensive understanding of the complex and multifaceted challenges nurses encounter when caring for CVA patients.

The shortage of adequate training and education for nurses: The shortage of adequate training and education for nurses is a common challenge mentioned by several participants, resulting in difficulties in providing proper care. Participants mentioned the lack of instructions or general explanations for devices, as stated by the second participant from the ICU: "The devices were not properly trained as we learned them from one person to another through experience, and there is no general explanation like the d/c shock device, bedside monitor,

electrocardiogram , and ventilator...”, medications, as stated by the second participant from the internal medicine ward: “The difficulty in treatment is that I don't have enough experience to know the medication and I don't know about any other drug interactions”, complications, as stated by the fourth participant from the emergency ward: “I have no information about the complications that occur for CVA patients”, and nutrition, as stated by the sixth participant from the internal medicine ward: “The staff doesn't know how to administer nutrition, and even the patient's position during nutrition, so I always see it done wrong”. Additionally, getting incorrect information from senior staff, as stated by the fifth participant from the internal medicine ward: “I received information from senior staff, but after a while, it turned out that some of it were wrong due to the information they also received from previous staff members”.

Nursing Role: Participants' responses to the challenges of the nursing role in caring for patients with cerebrovascular accidents were three aspects: the lack of specialization in neurological nurses and the giving of nutrition and physical challenges of care. The aspect of the lack of specialization in the neurological nurses is where participants emphasized the importance of having specialized nurses with experience in caring for patients with cerebrovascular accidents, as stated by the eighth participant from the internal medicine ward: “In my opinion, the best thing is to have a nurse who specializes in caring for CVA patients, who can provide a very high level of service and not be preoccupied with other diseases...”. Among the solutions to the challenges they face, the participants mentioned the necessity of providing specialized nurses in the care of CVA patients, as stated by the ninth participant from the ICU: “It gives precise nursing specializations to neurological patients”.

As for the aspect of the challenges of giving nutrition, the participants highlighted the lack of specialized physicians or protocols to administer nutrition to CVA patients, as stated by the fifth participant from the ICU: “Concerning nutrition, there is no specialist doctor in this matter, and this constitutes difficulty in determining the type of food for the patient. Rarely will a physician recommend just taking fluids”. Similarly, the seventh participant from the ICU said: “In terms of nutrition, there is no specific protocol, and there is no nutritionist...”. The responses in the aspect of the physical challenges of care in the role of nurses. revealed the difficulty in providing care for CVA patients who are unconscious or immobile and require frequent repositioning to prevent complications such as bedsores, as stated by The fourth participant from the ICU: “I face challenges with CVA, most of whom are unconscious, and I have to change the patient's position every two hours. I am alone, the patient is heavy, and I cannot change their position every two hours”. The weight of the patient can also pose a challenge as it requires more effort and energy from nurses to provide care, as stated by the fifth participant from the ICU: “Challenges like the heavy weight of CVA patients require effort from us and demand energy to provide care.”.

Nurse-to-patient ratio: Nurses in various units face challenges with the nurse-to-patient ratio. In the intensive care unit, there are only 5 nurses for 8 patients, resulting in an additional burden and difficulty in fulfilling their duties, as stated by the fifth participant from the ICU: “Our number is insufficient, and we are 5 individuals compared to 8 patients, and this causes additional burden and effort on us, and we cannot fulfill our duties”. Similarly, the internal medicine ward also experiences a shortage of nurses, where one nurse may have to care for up to four patients, as stated by the sixth participant from the internal medicine ward: “The difficulties I face with CVA are the first thing. The number of patients is many, and I have a small staff in the whole morning. A nurse receives four patients, and you imagine”. In addition,

the emergency ward does not have enough nurses to accommodate the high number of daily admissions, with only 6 nurses for 17 beds, as stated by the first participant from the emergency ward: “Our numbers as nurses are almost not enough. It is true that we number six, but it is not sufficient for the evening shift, compared to 17 beds for men, and many admissions per day exceed 150 patients”. The nursing staff shortage makes it challenging to transfer patients, change their positions, or rehabilitate them, as stated by the third participant from the internal medicine ward: “The number of nursing staff is very small so that we cannot move the patient, change his position, or rehabilitate him”.

Communication: Participants' responses on the theme of communication in the challenges nurses face in caring for patients with cerebrovascular accidents reveal several key aspects: Difficulty understanding and communicating with unconscious patients Participants highlighted the challenge of providing care to unconscious patients. They expressed the difficulty in understanding the patient's needs, such as pain, as stated by the seventh participant from the ICU: “The challenge is on the part of the patient, as the patient is unconscious, so it is difficult to communicate with him, as I cannot know his pain and other things, and this hinders providing care according to his needs”. As well as their inability to communicate effectively with the patient, as stated by the third participant from the internal medicine ward: “Another difficulty is my lack of understanding of the patient because he is unconscious and I cannot explain his needs”. CVA patients differ from other patients in that they are unconscious, as stated by the sixth participant from the emergency ward: “Most CVA patients lose consciousness, and it is difficult to understand and treat the patient as if they were any other patient”. Non-cooperation of the patient's relatives was presented to many participants in different wards. The main challenges they face are related to the patient's family members or companions who lack knowledge on how to care for the patient, which leads to additional complications and challenges in the patient's recovery, as stated by the third participant from the ICU:

“The patient's family does not have information on how to take care of the patient, including changing position, movement, and hygiene, so the patient has other problems in addition to his illness, so he comes with more care that often makes it difficult for the patient to recover, such as difficulty breathing, bed sores, and other problems”.

Sometimes, the patient comes in a hopeless state due to the neglect of his family, as stated by the fourth participant from the ICU: “Sometimes the patient comes suffering from complications as a result of the family's neglect, and this constitutes a challenge to his recovery, or he comes in a hopeless state”. The lack of trust of the patient's relatives in the nurses is another challenge, as stated by The third participant from the Internal Medicine Ward: “The challenges or difficulties we often face are the patients' relatives as a result of their not trusting us. He may say that you are inexperienced or you cannot do this thing”. In addition, the presence of large numbers of the patient's relatives and their interference hinders the provision of nursing care, as stated by the fifth participant said from the emergency ward: “facing difficulties in providing treatment due to a large number of patients' relatives and their interference in our work”.

Participants also highlighted the insufficient communication between healthcare professionals. A recurring theme was the lack of effective communication between doctors and nurses, which led to a gap in patient care. Participants expressed frustration with doctors not seeking updates or inquiring about the patient's condition and progression, as stated by the first participant from the ICU:

"Follow-up by the specialized doctors does not come to ask me about the patient's condition and what is his development, and he does not ask me. He only comes to check the patient's condition every morning, and rarely comes at night, as there is no good follow-up. It is necessary to communicate with the specialist doctor, in the event of a change in the pulse or blood pressure...as there is a gap between the doctor and the nurse".

Administrative difficulties: Participants in the study highlighted various administrative challenges in the healthcare environment. One important issue mentioned was the lack of knowledge and clear evidence regarding powers, systems, and critical care unit regulations, as stated by the seventh participant from the ICU: "One of the administrative problems is the lack of knowledge about critical care unit regulations, in addition to the description of nurses' work...". The nurses expressed frustration with management failing to address conditions of abuse or injustice, leaving them to fend for themselves without adequate support, as stated by the eighth participant from the intensive care unit: "... When I face assault, for example, from a patient's companion or other employees, the management often doesn't support the nurses. You have to rely on yourself as a defender, and there is no one to advocate for your rights."

The work environment was identified as unsuitable due to factors such as limited space, lack of privacy, and interference from devices, posing risks to safety and hindering the delivery of effective care, as stated by the seventh participant from the ICU: "We also suffer from limited space, lack of barriers, privacy, or safety. The devices are close and intertwined, and the oxygen cylinder takes up space and poses a risk, such as the transmission of infections or falls, hindering care delivery." Additionally, the lack of dedicated units for cerebrovascular accident (CVA) patients affects the provision of effective care, as stated by the third participant from the internal medicine ward: "I have other patients, such as lung diseases, who also need care, not just CVA patients. This hinders the care for CVA patients and places a heavy burden on me. I won't be able to achieve effective care for the patient."

Insufficient salaries were mentioned as a major concern, causing some nurses to take on additional jobs, resulting in fatigue and decreased efficiency, as stated by the first participant from the Internal Medicine ward: "The salary is not enough for long patient working hours. I had to take on a second job, and it affects the service due to excessive effort from external work responsibility and household and hospital responsibilities." Furthermore, the lack of appreciation and recognition for nurses' efforts, as well as the absence of incentives and privileges, contribute to dissatisfaction, as stated by the fourth participant from the Emergency ward: "Compared to the efforts we provide, especially for CVA patients and patients in general, we should enjoy many privileges, whether material, moral, or even words from the Nursing Affairs Ward that boost morale, like a thank-you letter and others. Unfortunately, this is not available."

Insufficient resources, outdated equipment, and drug shortages were mentioned as challenges that affect patient care, as stated by the fifth participant from the Ward of Internal Medicine: "We lack advanced and updated devices, and what we have is poor in performance and limited in number because this patient requires continuous monitoring, such as vital signs and overall oxygen monitoring." Additionally, the absence of modern multi-movement beds that reduce patient complications was mentioned by the seventh participant from the Ward of Internal Medicine: "We don't have multi-movement beds, meaning electric beds, and the existing bed is worn out and old. We need modern beds that benefit the patient and reduce complications." Moreover, the seventh participant from the ICU highlighted the shortage of

medications, stating, "Not all medications are available in the hospital, and not all families can afford to buy medications."

Transferring the patients: Participants in the study highlighted several challenges related to patient transfer in the healthcare setting. These challenges included various aspects, including incomplete laboratory tests, as stated by the second participant from the ICU: "When the patient comes from the emergency ward, their laboratory tests are often incomplete". Other challenges included patient mobility difficulties and the lack of a dedicated transport bed, as stated by the eighth participant from the ICU: "Transferring patients from the emergency ward to the ICU is difficult because the emergency ward is far away from us, and the unqualified transport bed affects the patient's condition". Additionally, the lack of staff and equipment for transportation was mentioned, as stated by the first participant from the emergency ward: "...There are no specialized people or equipment for patient transport". Moreover, insufficient information transfer during handover was identified as a challenge, as stated by the first participant from the ICU: "We often receive the patient without any emergency team or doctor, and we do not know the patient's history or reason for admission to the emergency unit".

Gaps in patient handover between morning and evening nursing staff were also identified as challenges, such as the shortage of information transfer during handover, as stated by the second participant from the internal medicine ward: "Sometimes the doctor's recommendations are transmitted incorrectly by the morning nursing staff, or they forget to inform us, and we have a large number of patients", leading to confusion between morning and evening shifts, as stated by the First Participant from the Internal Medicine Ward: "Confusion occurs between morning and evening shift". These communication challenges can jeopardize patient safety and lead to fragmented care, as stated by the first participant from the internal medicine ward: "...There is confusion between the morning and evening teams."

DISCUSSION OF THE RESULTS:

Table 1 presents the socio-demographic characteristics of the study participants. The gender distribution revealed that males constituted 61.3% of the sample, whereas females accounted for 38.8%. This distribution aligns with the findings of Atiyah et al., who also reported a higher representation of males in their nursing sample²⁵. Likewise, the study conducted by Hameed and Mohammed also revealed a higher proportion of males than females in their nursing sample²⁶. However, it is important to note that gender distribution may vary across different regions and healthcare settings, making direct comparisons with other studies subject to variations. The average age of the participants in our study was 27.24 years, with a standard deviation of 3.52. These findings are similar to those reported by Rababa and Al-Sabbah, who found an average age of 26.8 years among their nursing participants²⁷. In addition, the study sample was Tarrar and Mohammed, whose ages ranged from 25-29 years²⁸. These results suggest that our sample consisted of relatively young nursing professionals, which is consistent with the early stage of their careers. Regarding education level, our study observed that the majority of participants (62.5%) held a diploma in nursing, followed by 28.8% with a bachelor's degree in nursing, then high school nursing or preparatory education. These findings are comparable to the research conducted by Dhakeel and Hassan, who reported similar proportions of diploma, bachelor's degree, and high school nursing holders among their nursing sample²⁹. However, our study had a lower percentage of participants with a master's or Ph.D. degree in nursing (1.3%) compared to the study conducted by Abbas and Jasim, which reported a lower percentage of advanced degree holders in their sample³⁰. These differences may be attributed

to variations in the recruitment process and geographic location of the participants. Regarding years of experience, our study found an average of 4.3 ± 3.22 years among the participants. This aligns with the findings of Najm et al., who reported that most of the years of experience (58.3%) fell between 1-5 years in their sample³¹. These results suggest that our participants were relatively early in their nursing careers. Regarding the shift distribution, our study found that 80.0% of the participants worked the evening shift, while 20.0% worked the morning shift. These findings contradict the study by Al-Jubouri and Jaafar, who reported a smaller proportion of nurse participants in their study working the evening shift compared to the morning shift³². This difference highlights the prevalence of evening shift work among our sample since the wards from which the sample was drawn operate on a 24-hour schedule, resulting in fewer participants working the morning shift.

DISCUSSION OF THE QUANTITATIVE RESEARCH FINDINGS

Regarding the challenges nurses face in caring for CVA patients, the current study in Table 2 reveals a moderate rate of overall workload challenges faced by nurses in providing care. This finding is consistent with a cross-sectional study by Moghadam et al., which measures physical workload using the Nursing Activities Score (NAS) and reported a high level (72.84%) of physical workload among nurses in the ICU³³. This is consistent with the current study's observation that nurses face workload challenges when caring for CVA patients. The findings of Faltas and Abd-Allah also support indicators of workload in providing care to patients, such as their heavy dependence and the increased number of hours' nurses work with them³⁴. Their study highlighted that as patients' dependence increases, nurses' workload also increases at various levels³⁴. This reinforces the findings of the current study regarding the impact of patient dependence on workload challenges in CVA care. Furthermore, the study by Amadeu et al. found a positive association between increased working hours and workload³⁵. This supports the current study's observation that nurses spend more hours caring for CVA patients, and their workload increases as well.

In Table 9 of our study, there was also a direct, statistically significant relationship between workload and role conflict, and there was no statistically significant relationship between the workload challenge and the challenge of supporting materials and the sense of responsibility. This is supported by the study of Mahran et al. with the presence of a statistically significant relationship between the workload challenge and role conflict²³. There is no statistically significant relationship between the challenge of workload and the challenge of supportive materials and the sense of responsibility of the patients in the intensive care unit²³. These results indicate indicators of the workload challenge in the context of providing care for CVA patients as a result of the high dependency of patients, the increase in working hours³⁶, and the increase in the number of patients who are in contact with the items of role conflict in Table 2, all of which contribute to the escalation of the challenge of the workload in providing care for CVA patients.

The current study presented in Table 2 highlights a high rate of overall psychological load challenges faced by nurses in providing care to CVA patients. This finding is consistent with a cross-sectional study conducted by Moghadam et al., which utilized the NASA Task Load Index (NASA-TLX) to measure mental workload and reported a high level (70.21%) of mental workload among ICU nurses³³. Furthermore, our study in Table 9 revealed a statistically significant relationship between workload and psychological load, which is supported by the aforementioned study by Moghadam et al., which found a significant relationship between physical workload and mental workload³³.

Another cross-sectional study conducted by Ahmad et al. in Egypt demonstrated higher levels of burnout associated with various factors, including varying nurse-to-patient ratios (ranging from 1:1 to 1:4), increased monthly admissions, higher mortality rates, and conflict with department heads and patients and their relatives existed identified as a significant contributor to elevated levels of burnout³⁷. The principal occupational stressors of nurses due to poor attitude of doctors, working in stressful units (emergency / Intensive care units), inadequate income, extra work, time pressure, and work with insufficient meals and rest³⁸. These findings suggest indicators of psychological load in the context of providing care for CVA patients due to increased physical load, frequent exposure to stressful events such as caring for dying patients, diminished hope for recovery, inadequate nursing staff, and conflicts with department heads and patients/relatives all contribute to an escalation of psychological load as well as a workload.

As was found in Table 9 in our study, there is no statistical significance for the psychological load challenge with the supportive materials challenge, the sense of responsibility challenges, and the role conflict challenge. This is in agreement with the mixed study of Khalaf and Becky, who found that there is no statistically significant relationship between the psychological load challenge and the supportive materials challenge, the sense of responsibility challenge, and the role conflict challenge³⁹. Another study by Kim in Korea found that the multiple responsibilities and conflicting roles seen by nursing care workers had a positive outcome on burnout⁴⁰.

The current study in Table 2 revealed a high rate of both the overall challenge of supportive materials and the challenge of the sense of responsibility faced by nurses in providing care to patients with CVA. This is supported by the descriptive, exploratory, and qualitative study conducted by Mahran et al., where the challenge of supportive subjects and a sense of responsibility were rated medium and high, respectively, for the challenges faced by patients in intensive care²³. These results suggest a high of the challenges of supporting materials in the context of providing care for CVA patients. This is due to the lack of supply of materials, the lack of offices for nurses, as well as stressful working conditions^{38,17,41}. They also suggest high of the challenge of a sense of responsibility in the context of providing Care for CVA patients, due to the presence of CVA patients in critical condition, is the responsibility of the nurses to provide medicines and equipment to care for them⁴².

In Table 9 of our study, found a direct and statistically significant relationship between the challenge of supportive materials with the challenges of a sense of responsibility and role conflict among nurses providing care for CVA patients. This result contrasts with a descriptive, exploratory, and qualitative study conducted by Mahran et al. in Egypt, where they did not find a statistically significant relationship between the challenge of supportive materials and the challenges of a sense of responsibility and role conflict among a sample of 45 nurses in the intensive care unit²³. In a mixed study by Khalaf and Becky (39) in Iraq, they found a significant relationship between the challenge of supportive materials and the sense of responsibility, but no significant relationship was found with role conflict among a sample of 35 nurses in intensive care during the Corona pandemic³⁹. These differences in findings between the current study and others highlight the influence of various factors, including the specific healthcare environment, available resources, organizational structures, sample sizes, and cultural contexts. Each study was conducted in a unique setting, which can lead to variations in the challenges faced by nurses and their perceptions of a sense of responsibility and role conflict. It is worth noting that our discussion aligns with the study by Khalaf and Becky³⁹ regarding the relationship between the challenge of supportive materials and the sense of responsibility³⁹. Although the studies were conducted in the

same hospital, the differences in time and sample size may account for variations in the relationship with role conflict. Therefore, these findings suggest that the challenge of supportive materials impacts the challenges of a sense of responsibility and role conflict among nurses providing care for CVA patients.

The current study reveals in Table 2 a moderate rate overall of role conflict challenges faced by nurses in providing care for CVA patients. This finding is a consistent cross-sectional survey of Nowrouzi-Kia et al., where they reported a moderate rate of role among registered nurses and registered practical nurses working in acute care hospitals in Ontario Canada⁴³. Furthermore, the current study found no statistically significant relationship between role conflict and the sense of responsibility. This finding is consistent with the results of the descriptive, exploratory, and qualitative study conducted by Mahran et al., as well as the study by Khalaf and Becky. Both studies did not provide statistical evidence of a relationship between role conflict and a sense of responsibility^{23,39}. The results of the current study highlight the presence of role conflict challenges faced by nurses in providing care for CVA patients, which may stem from long work periods and the overlapping demands of the profession with family duties. These challenges are reflected in the items related to role conflict in Table 2 of the current study.

Tables (3,4,5,6,7,8) of the current study, found that there is no statistically significant relationship between the overall challenges faced by nurses in providing care to CVA patients and their demographic characteristics following age, gender, years of experience, and shifts, except for the relationship between challenging workload in workplaces and the level of education, which showed a statistically significant relationship. This finding is consistent with the mixed study conducted by Khalaf and Becky, where no significant relationship was found between the characteristics of the demographic sample and the challenges faced by nurses in the intensive care unit during the Corona pandemic³⁹. It is logical to expect that demographic characteristics would not have a direct relationship with the challenges faced by nurses in providing care for CVA patients, as the duties and responsibilities are generally the same regardless of age, gender, years of experience, and shifts worked.

However, the current study did find a significant relationship between challenging workload and workplaces and level of education. This finding is supported by the retrospective observational study by Falk, which stated that there is a difference in workload based on educational level⁴⁴. Additionally, the cross-sectional study by Moghadam et al.³³ found differences in workload among nurses in different workplaces³³. Factors such as staffing levels, resource availability, work environment, and patient complexity can significantly impact the nurse's workload⁴⁵. When these factors are unfavourable or suboptimal, nurses are likely to experience increased workload demands, which can have implications for their job satisfaction, burnout rates, and the quality of patient care they can provide⁴⁶⁻⁴⁸. Considering these indicators, it can be concluded that there are differences in the challenging workload faced by nurses in different workplaces and with different educational levels when providing care for CVA patients. These differences may arise due to variations in the work environment, availability of resources, patient complexity, and the specific duties assigned according to educational levels. Each level of education may entail different work requirements and responsibilities.

DISCUSSION OF THE QUALITATIVE RESEARCH FINDINGS

One prominent challenge identified the theme of the shortage of adequate training and education for nurses. Another study conducted

a qualitative study by Baker et al. aimed to explore the barriers and facilitators associated with the implementation of stepped psychological care for depression in individuals with post-CVAs aphasia, as perceived by CVAs health professionals in Australia determined theme Barriers to CVAs health professionals lack knowledge and skills⁴⁹. A cross-sectional qualitative study was carried out by Wu et al. to comprehend the challenges in providing complete care for CVAs patients and determine two themes including Inadequate CVAs knowledge of Providers and insufficient CVAs expertise¹⁴. Heydari et al. qualitative studies, which explored challenges and barriers to providing care to elderly patients in the intensive care unit. the lack of specialized knowledge about elderly patients among the nurses⁵⁰. This indicates the existence of challenges in Training and education for nurses in providing care for CVA patients.

The current study has identified the theme of nursing role challenges faced by nurses in providing nursing care to patients with cerebrovascular accidents (CVAs). Another qualitative study conducted by Ferguson et al. in Sydney, Australia aimed to explore the perspectives of nursing and allied health professionals involved in CVAs care regarding oral care for CVAs patients in acute care and CVAs rehabilitation settings⁵¹. The theme that emerged from their study was the presence of barriers to providing care for oral care for CVAs patients⁵¹. Furthermore, the lack of specialized CVA nurses was identified as a factor that affects the competence of healthcare professionals in delivering CVA care¹⁹. Nursing care for enteral feeding was found to be substandard compared to prevailing nursing care standards⁵². Nurses face challenges in this area, including the lack of conflicting evidence-based guidance or recommendations for practice nurses in enteral feeding and the absence of collaboration among the multidisciplinary team in the ICU when making decisions regarding patient feeding⁵³. Studies conducted in Iraq also revealed that many critical care nurses lack sufficient knowledge regarding enteral feeding^{54,55}. In addition, a qualitative study conducted by Heydari et al. in the ICU explored themes related to increased nursing workload leading to physical and mental exhaustion, which in turn impacted the quality and standard of care⁵⁰. Khalaf and Becky similarly reported in their mixed-methods study in the intensive care unit that nurses experienced a physical burden³⁹. In the current study, a challenging role for nurses in the nursing care of CVAs patients was identified, which was related to nursing care interventions focusing on the physical needs of patients, such as physiological function assessment, medication administration, and motor and functional rehabilitation⁵⁶. Additionally, unconscious or immobile patients require frequent repositioning to prevent complications such as bedsores⁵⁷.

The current study determined the theme of the challenging nurse-to-patient ratio in various units and the challenges nurses face because of this ratio. Another qualitative literature review study conducted by Gutsan et al. determined the theme of an increased nurse-to-patient ratio, which was found to be associated with burnout, fatigue, and poor patient outcomes⁵⁸. Additionally, Nakweenda et al. conducted a qualitative study in Northern Namibia that also determined the theme of an increased nurse-to-patient ratio in critical care units⁵⁹. This ratio was found to have a negative impact on the delivery of critical care, resulting in incomplete or delayed nursing care and, in some cases, patient neglect⁵⁹. This indicates that there is a challenging nurse-to-patient ratio that impedes the provision of nursing care to CVA patients.

The current study determined the theme of communication challenges faced by nurses when providing care to patients with cerebrovascular accidents (CVAs). These challenges encompass difficulties in understanding and communicating with unconscious patients, non-cooperation of the patients' relatives, and inadequate communication among healthcare professionals. Another qualitative study by Heard et

al. explored the perceptions of CVAs nurses and patients with aphasia regarding their communication experiences in an acute CVAs unit, revealing themes of frustration experienced by nurses and patients with aphasia during communication, as well as the communication needs and desires of patients with aphasia⁶⁰. Communication difficulties in the ICU arise due to factors such as the patient's health status, level of consciousness, mechanical ventilation, and limited means of communication^{61,62}. Additionally, Aadal et al. conducted a qualitative study to examine the roles and functions of nurses in managing the relatives of patients with CVA during in-hospital rehabilitation, identifying two themes: communication challenges with non-cooperative relatives and a lack of time for engaging with relatives⁶³. Challenges related to patients' families in the critical care unit include potential misunderstandings between nurses, patients, and families, frequent visits by relatives, interference with medical and nursing interventions, complaints from family members, and cultural differences, which can hinder communication with certain relatives⁶⁴. Moreover, Meng et al. conducted a study on nursing practice in CVAs rehabilitation in China, revealing themes of a lack of effective communication with other healthcare professionals⁶⁵. Furthermore, a qualitative study conducted by Heydari et al. in the ICU highlighted the lack of effective multidisciplinary collaboration between nurses and physicians⁵⁰. The current study findings underscore the diverse communication challenges that nurses face when providing care to CVA patients, including difficulties in communicating with unconscious patients, non-cooperation of the patients' relatives, and inadequate communication among healthcare professionals.

The current study determined the theme of administrative challenges faced by nurses when providing care to patients with cerebrovascular accidents (CVAs). Another qualitative study conducted by Al Zoubi et al. explored the challenges encountered by oncology nurses in Jordan, identifying two themes: a shortage of nursing staff and a lack of supplies, as well as a lack of orientation programs as administrative challenges⁴¹. Mousazadeh et al. conducted a qualitative study to explore job satisfaction challenges among intensive care unit (ICU) nurses, revealing themes such as inadequate organizational resources, including a lack of recreational facilities, qualitative and quantitative inefficiency of human resources, and a lack of proper equipment⁶⁶. Additionally, Heydari et al. conducted a qualitative study that explored the challenges faced by ICU staff, specifically nurses, in the care of elderly patients, highlighting several administrative issues, such as improper management policies, a stressful work environment, physical barriers separating nurses from patient beds, constraints in human and financial resources affecting care provision, and a lack of appropriate evidence for guiding care practices⁵⁰. These findings indicate that nurses encounter various administrative challenges when providing care to patients with CVAs.

The current study determined the theme of challenges in patient transfer within the healthcare setting. Another qualitative study conducted by Sarvestani et al. also aimed to identify shortcomings in nursing handover practices in pediatric wards in Shiraz, located in the south of Iran⁶⁷. The study revealed several themes associated with the handover, including a lack of a holistic and structured approach, poor time management, and inadequate space management. Moreover, Alamanou and Brokalaki⁶⁸ conducted a study on Intrahospital transport policies, which emphasized the presence of complex complications during patient transportation, which could be attributed to various factors such as equipment failures, poor communication among staff members, inadequate patient monitoring, and insufficient documentation of transfer procedures within the hospital⁶⁸. Consequently, difficulties in handovers can give rise to several problems, including the omission of important information, incomplete communication, decreased

concentration, and the possibility of vital information being missed or forgotten as a result of the rapid and incomplete exchange of information⁶⁷. These indicate that nurses face transferring patient's challenges when caring for patients with CVAs.

CONCLUSION

There are challenges that hinder the provision of nursing care to patients diagnosed with cerebrovascular accidents (CVA), These challenges encompass various dimensions, including psychological load, physical load, inadequate availability of supportive materials, increased responsibilities of nurses, role conflict, inadequate education and training, staffing shortages leading to difficulties in fulfilling the nursing role, administrative challenges, communication difficulties, and challenges in the patient transfer process.

RECOMMENDATIONS

Several recommendations can be made to enhance the provision of nursing care to CVAs patients. Firstly, healthcare organizations should prioritize the implementation of comprehensive support programs for nurses, including mental health support, physical well-being initiatives, and opportunities for professional development. This can be achieved through regular training sessions, workshops, and mentorship programs. Secondly, healthcare organizations should invest in adequate staffing levels to alleviate the burden on nurses and ensure optimal patient care. This includes recruiting and retaining qualified nursing staff and implementing strategies to address staffing shortages. Thirdly, organizations should conduct regular assessments of available resources and address any gaps in supportive materials and equipment. This can be achieved through effective inventory management, regular equipment maintenance, and communication channels to facilitate the procurement of necessary materials. Additionally, promoting effective communication and collaboration among healthcare team members can help reduce role conflict and administrative difficulties. This can be facilitated through interdisciplinary meetings, clear communication protocols, and fostering a culture of mutual respect and teamwork. Lastly, healthcare organizations should prioritize continuous quality improvement initiatives to address any identified challenges and ensure ongoing monitoring and evaluation of nursing care provided to CVAs patients. These recommendations, when implemented, can contribute to enhancing the quality of nursing care and improving patient outcomes for CVAs patients. Future studies could delve further into evaluating the effectiveness of interventions designed to mitigate these challenges and exploring additional factors that influence the provision of nursing care to patients with CVAs.

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ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The researcher received approval from the Ethical Committee of the College of Nursing, University of Baghdad, and obtained permission from the original instrument researcher. The study protocol and questionnaire were approved by the Ministry of Planning, and official permission was granted by the Ministry of Health/Diyala Health Directorate/Training and Development Center. The competent committee approved the study, leading to a license being issued for conducting the research at Baquba Teaching Hospital. Informed

consent was obtained from participants, either orally or through written consent.

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