

Nurses Knowledge on Management of Cerebral Haemorrhage Patients at Rajshahi Medical College Hospital

Anjuman Ara^{1*}, Momtaj Mohal², Romjan Shorif³, Sima Khatun¹, Tanzina Islam¹, Molly Kundu¹, Nasrin Khatun¹

¹Senior Staff Nurse, Department of Infection Prevention and Control (IPC) Unit, Rajshahi Medical College Hospital, Bangladesh

²Lecturer, Rajshahi Nursing College, Rajshahi, Bangladesh

³Senior Staff Nurse, Department of Emergency, Rajshahi Medical College Hospital, Bangladesh

Original Research Article Abstract:

***Corresponding Author:**
Anjuman Ara

Citation:

Anjuman Ara; *et al* (2023);
Nurses Knowledge of
Management of Cerebral
Haemorrhage Patients at
Rajshahi Medical College
Hospital. *iraetc j. nur. health
care*; 1(2) 53-58.



This work is licensed under a
Creative Commons
Attribution- NonCommercial
4.0 International license.

Background: Effective management of cerebral hemorrhage patients is critical for improving their outcomes. Nurses play a vital role in patient care, and their knowledge of cerebral hemorrhage management is essential for providing quality healthcare. **Objective:** This study aimed to assess nurses' knowledge regarding managing cerebral hemorrhage patients at Rajshahi Medical College Hospital (RMCH) in Bangladesh. **Methods:** A cross-sectional descriptive study was conducted over six months, from November 2014 to April 2015, at RMCH. Data were collected from N=50 staff nurses working in various wards. Demographic information, including age, gender, marital status, religion, educational qualification, professional qualification, and length of service, was gathered. A direct questionnaire was administered to assess nurses' knowledge of cerebral hemorrhage management, with responses categorized as yes/no, complete knowledge, partial knowledge, or don't know. **Results:** The study revealed that most nurses at RMCH were female (88%) and aged over 40 years (60%). Furthermore, 98% of the respondents were married. Educational qualifications varied, with over 60% holding, and 74% having a Diploma in Nursing; 18% had B.Sc. in Nursing and 8% had M. Sc in Nursing. Length of service of the respondents were maximum (42%) in between 21-25 years and only 4% were in between 1-5 years. In terms of knowledge, 83.56% of the nurses responded positively (yes) to questions about cerebral hemorrhage management. Among them, 53.75% had complete knowledge, 33.50% had partial knowledge, and 12.75% admitted to not knowing certain aspects. **Conclusion:** The findings indicate that a significant proportion of staff nurses at RMCH possess a reasonable level of knowledge regarding the management of cerebral hemorrhage patients. However, there is room for improvement, particularly among those with partial knowledge. Continuous training and education programs can further enhance nurses' competence in managing cerebral hemorrhage patients, ultimately improving patient care and outcomes at Rajshahi Medical College Hospital.

Key Words: Cerebral hemorrhage, Knowledge, Nurses.

|| © IRAETC Publisher || **Publication History** - Received: 22.08.2023 || Accepted: 15.10.2023 || Published: 26.10.2023||

INTRODUCTION

Cerebral haemorrhage, also known as intracranial hemorrhage or intracerebral hemorrhage (ICH), is a serious subtype of intracranial hemorrhage characterized by bleeding within the brain tissue itself [1]. Unlike extra-axial hemorrhages, such as epidural, subdural, and subarachnoid hematomas, which occur outside of the brain tissue within the skull, cerebral hemorrhages are considered intra-axial. Within this category, two main types of intra-axial hemorrhages exist: intraparenchymal hemorrhages and intraventricular hemorrhages. Intraparenchymal hemorrhages, in particular, are medical emergencies due to their potential to increase intracranial pressure, which, if left untreated, can lead to coma and death. Sadly, the mortality rate associated with intraparenchymal bleeds exceeds 40% [2].

Cerebral haemorrhage, or ICH, represents a devastating form of stroke and a major cause of mortality today. Its impact on public health extends beyond the significant costs associated with hospitalization and patient management, including a reduction in productivity, as cerebral haemorrhage often results in severe disability [3]. Despite an increase in the number of hospitalized patients with cerebral haemorrhage, there has been no concurrent reduction in mortality rates [4]. This lack of progress in reducing mortality can be attributed, in part, to the absence of specific medication treatments for cerebral haemorrhage.

While there is currently no hope for a drug therapy capable of rapidly resolving cerebral haemorrhage, there is a potential therapy to address a critical complication: hematoma expansion. Recombinant activated Factor VII (rFVIIa) therapy, derived from genetic engineering and structurally similar to human plasma Factor VII, was initially developed for the treatment of hemophilic patients. However, its application in neurology and neurosurgery has sparked debate due to its ability to stop ongoing bleeding, its association with thromboembolic side effects, and the perception that it does not significantly improve long-term prognosis for all patients. Furthermore, this therapy is considered costly by some

clinicians. Therefore, it is imperative to select patients for this treatment based on pre-established criteria carefully and to reconsider the effective therapy dose [5].

Recent studies, both completed and ongoing worldwide, have identified potential patient selection criteria. In addition to well-known clinical and biological criteria, a new paraclinical criterion has emerged—the "spot sign" biomarker, detected through Computer Tomography Angiography (CTA) [6].

Moreover, emerging research has uncovered additional properties of vitamin K, including its vasoprotective, neuroprotective, and modulatory effects on stem cell proliferation within the subventricular niche. This has led to its consideration as a potential therapy for patients with acquired Factor VII deficiency [17]. In light of these developments, this study aims to contribute to the ongoing exploration of effective treatments and patient selection criteria for cerebral haemorrhage, with a focus on the role of rFVIIa therapy and the "spot sign" biomarker.

MATERIALS AND METHODS

This study used a cross-sectional research design to evaluate nurses' knowledge concerning the management of cerebral haemorrhage patients at Rajshahi Medical College Hospital. The study encompassed a population of 375 nurses from the same hospital, with a sample size of 50 nurses selected for the research. Data collection was conducted at Rajshahi Nursing College (RNC) in Rajshahi, Bangladesh, spanning six months from November 2014 to April 2015.

Inclusion Criteria:

- Nurses with valid nursing qualifications.
- Current employment at Rajshahi Medical College Hospital.
- Willingness to provide informed consent.

Exclusion Criteria:

- Lack of valid nursing qualifications.
- Not employed at Rajshahi Medical College Hospital.
- Refusal to provide informed consent.
- Unavailability during the study period.

Data Collection:

The data collection process commenced with official approval from hospital authorities. Nurses were briefed on the study's objectives and voluntarily gave both verbal and written consent. Pretests assessed their baseline knowledge, with potential interventions introduced. Post-tests followed to gauge any knowledge changes. Structured questionnaire interviews achieved a remarkable 100% response rate, reflecting full participation among the fifty nurses involved in the study, ensuring robust data collection for the assessment of nurses' knowledge concerning the management of cerebral haemorrhage patients.

Data Analysis:

Data manually recorded on a master sheet will undergo descriptive analysis, summarizing post-operative self-care practices. The chi-square test will be employed to examine the relationship between knowledge levels and selected demographic variables to explore associations. The utilization of Statistical Package for the Social Sciences (SPSS vs 26.0) ensures rigorous and precise analysis, facilitating a comprehensive evaluation of nurses' knowledge regarding the management of cerebral haemorrhage patients and its potential correlation with demographic factors, thereby enhancing the study's depth and accuracy.

Ethical consideration:

The research proposal was initially submitted to and approved by the Director and Nursing Superintendent of Rajshahi Medical College Hospital. Informed consent was diligently obtained from both institutional authorities and individual participants, affirming their voluntary participation rights. Privacy, confidentiality, and anonymity were rigorously maintained throughout the study. Completed schedules were securely stored, and the investigator worked alongside a research supervisor to protect human rights. The study's scientific objectivity, honesty, and impartiality were meticulously upheld, ensuring ethical integrity.

RESULT

The age group of 20 to 29 were 4%; 60% were in the age groups of 30 to 39 years, 60% were in the age groups of 40 to 49 years & 6% were in the age groups of 50 to 59 years.

Table 1. Demographic information of the participated nurses Age of the respondent N=50.

Variable	Range	Number	Percentage
Age	20-29 years	2	4
	30-39 years	15	30
	40-49 years	30	60
	50-59 years	3	6
Gender	Male	6	12
	Female	44	88

Table 2. Professional qualification of the respondent N=50

Variable	Parameters	Number	Percentage
Professional Qualification	Diploma in Nursing	37	74
	B. Sc. In nursing	9	18
	MPH / M. Sc.	4	8
	B.Sc in Public Health Nursing	-	-
	MH/M.Sc	-	-

Nurses with professional qualifications were Diploma in Nursing 100% because this degree was compulsory and basic. Among them only Diploma in Nursing 74%; 18% B.Sc. in Nursing and 8% MPH/M.Sc among those respondents.

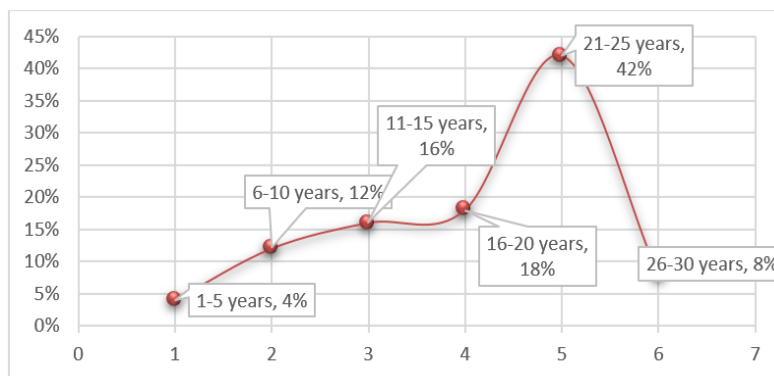


Figure 1: Distribution of the respondents by their length of service

Length of service 1 year–5 years 4% , 6 years – 10 years 12%, 11 years – 15 years 16%, 16 years– 20 years 18%, 21 years –25 years 42%, 26 years– 30 years 8%.

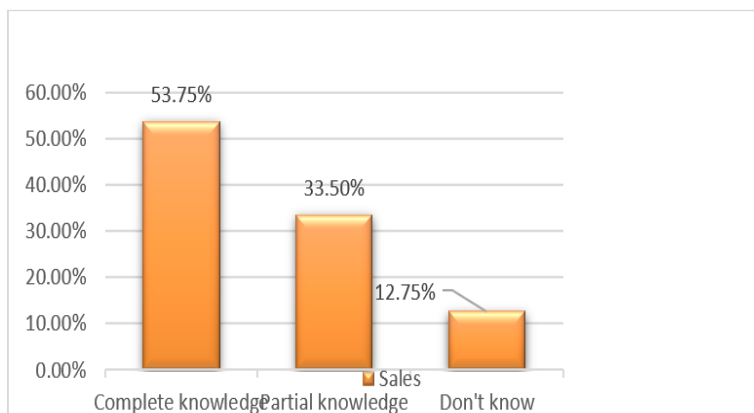


Figure 2: Distribution of the respondents by their knowledge related MCQ question

Table 3. Nurses knowledge on management of cerebral haemorrhage patients.

Question	Answer			
	Yes		No	
	N=50	%	N=50	%
Do you know what cerebral haemorrhage is and its management?	50	100	0	0
Do you know what are the risk factors to develop of cerebral haemorrhage?	45	90	5	10
Do you keep and maintain all records related to the patient with cerebral haemorrhage?	46	92	4	8
Do you establish and maintain therapeutic relationship with the patient?	50	100	0	0
Have you informed any incident related to cerebral haemorrhage complications to the patient?	47	94	3	6
Have you received complicated patient cordially?	50	100	0	0
Have you provided care to the emergency situations?	50	100	0	0
Do you ensure and maintain aseptic techniques in all nursing procedures?	44	88	6	12
Do you carry out admission and discharge procedures with proper formalities?	48	96	2	4
Do you manage the patient of unconsciousness in cerebral haemorrhage?	50	100	0	0
Do you listen and give time to patient as per need?	50	100	0	0
Do you provide health education and counseling to the patient and their relatives?	50	100	0	0
Do you ensure proper reporting and record keeping?	50	100	0	0
Do you follow that patient getting proper diet?	27	54	23	46
Do you identify unusual incidents and report to the superior?	45	90	5	10
Do you teach the patient to avoid smoking and alcohol?	50	100	0	0
Do you check blood pressure regularly of all high-risk patients?	33	66	17	34
Do you teach the patient about individualized meal plans?	16	32	34	68
Do you collaborate with the patient to explore exercise options at home?	50	100	0	0
Do you encourage the patient to exercise regularly?	50	100	0	0
Have you help the patient for investigation?	50	100	0	0
Do you know the GLASGOW COMA SCALE (GCS) to assess the patient condition?	5	10	45	90
Do you know the score of GCS?	5	10	45	90

The study found that the majority of nurses a positive attitude and demonstrated adequate knowledge in managing cerebral haemorrhage patients. Knowledge on cerebral haemorrhage: 100%, Risk factors of cerebral haemorrhage patients: 90% yes, 10% no Maintaining patient records: 92% yes, 8% no Establishing therapeutic relationships: 100% yes, 0% no Reporting cerebral haemorrhage complications: 94% yes, 6% no, Cordial treatment of complicated patients: 100% yes, 0% no Providing care in emergency situations: 100% yes, 0% no, Maintaining aseptic techniques: 88% yes, 12% no, Admission and discharge procedures: 96% yes, 4% no Managing unconscious patients: 100% yes, 0% no, Giving time to patients: 100% yes, 0% no, Health education and counseling: 100% yes, 0% no, Reporting and record-keeping: 100% yes, 0% no, Ensuring proper diet: 54% yes, 46% no, Identifying unusual incidents: 90% yes, 10% no, Teaching patients to avoid smoking and alcohol: 100% yes, 0% no, Regular blood pressure checks for high-risk patients: 66% yes, 34% no, Teaching , individualized meal plans: 32% yes, 68% no, Collaborating with patients on exercise options: 100% yes, 0% no, Encouraging regular exercise: 100% yes, 0% no, Assisting with patient investigations: 100% yes, 0% no, Knowledge of Glasgow Coma Scale (GCS): 10% yes, 90% no, Scoring the GCS: 10% yes, 90% no.

DISCUSSION

The present study provides valuable insights into nurses' knowledge regarding the management of cerebral haemorrhage patients at Rajshahi Medical College Hospital. This discussion further explores the study's findings, emphasizing the critical role of healthcare professionals, the necessity for lifelong learning in nursing, and the potential benefits of nurse-led clinics in improving patient outcomes. Healthcare professionals, including nurses, physicians, midwives, public health nurses, and community nurses, are recognized as the primary and trusted sources of health information for the general public [8]. Approximately 70% of patients seek guidance and accurate medical advice from healthcare providers [9]. This trust underscores the importance of ensuring these professionals possess up-to-date knowledge to effectively educate the public.

An essential aspect of healthcare is the dissemination of knowledge to the public. Patients and their families rely on healthcare professionals to educate them about various health conditions and their management, including cerebral haemorrhage. Approximately 85% of patients believe that healthcare workers should prioritize public education on the

management of cerebral haemorrhage patients. This empowers individuals to take an active role in their health, promoting awareness of potential lifestyle changes and preventive measures. The nursing profession demands a commitment to lifelong learning. The dynamic nature of healthcare, continuous advancements in medical knowledge, and evolving patient needs necessitate that nurses continuously update their skills and knowledge. Approximately 95% of nurses acknowledge the importance of lifelong learning in nursing practice [10]. This adaptability is vital for providing high-quality patient care and ensuring positive patient outcomes.

Recognizing that adults have different learning styles, such as visual, auditory, and kinesthetic preferences, is essential for effective nursing education. In contemporary nursing education, self-directed learning is a prevalent approach that encourages individuals to take ownership of their learning process. However, the literature indicates that approximately 80% of nurses may prefer structured approaches to learning, which involve the guidance and presence of an educator [11]. Understanding these preferences can inform nursing education strategies and curricula development to better cater to individual learning styles.

This study shed light on nurses' demographic characteristics, which have significant implications for understanding their knowledge and educational needs. It is important to note that the majority of nurses at RMCH were female, constituting 88% of the respondents. Furthermore, a substantial proportion of nurses were aged over 40 years, accounting for 60% of the study participants. These demographics underscore the significance of tailoring educational programs to the needs and preferences of this specific group within the nursing workforce [8].

A notable demographic aspect revealed by this study is that 98% of the respondents were married. This information suggests that these nurses may have additional responsibilities outside of their professional roles, potentially impacting their availability for ongoing education and training [12]. Understanding nurses' life circumstances and commitments is crucial for designing educational interventions that accommodate their diverse needs and circumstances.

Educational qualifications among the nurses in the study exhibited diversity. More than 60% of respondents held an S.S.C degree, while 20% had an H.S.C qualification, and 18% possessed a B.Sc. degree. Moreover, 74% of the participants held a Diploma in Nursing, 18% held a B.Sc. in Nursing, and 8% had an M.Sc. in Nursing. This diversity in educational backgrounds indicates the need for tailored educational strategies that consider nurses' varying levels of prior knowledge and expertise.

Regarding the length of service, the majority of respondents (42%) had between 21 to 25 years of experience, indicating a seasoned nursing workforce. Conversely, only 4% had between 1 to 5 years of experience. This disparity in experience levels underscores the importance of recognizing and addressing the unique educational and training needs of both novice and experienced nurses [13].

In terms of knowledge about cerebral haemorrhage management, the study yielded significant results. The vast majority of nurses (83.56%) responded positively (yes) to questions related to cerebral hemorrhage management. Among this group, 53.75% demonstrated complete knowledge, while 33.50% possessed partial knowledge. Importantly, 12.75% of respondents acknowledged not knowing certain aspects of cerebral hemorrhage management.

These findings are noteworthy as they indicate considerable awareness and knowledge among the nursing staff at RMCH regarding cerebral haemorrhage management. However, the presence of partial knowledge and areas of uncertainty also highlights opportunities for targeted educational interventions [14]. Nurses who possess partial knowledge may benefit from ongoing training and resources to fill knowledge gaps and enhance their competence in this critical area of patient care.

CONCLUSION

The demographic characteristics and knowledge levels of nurses at RMCH provide valuable insights for designing educational programs and interventions tailored to their specific needs. Understanding nurses' diverse educational backgrounds, experience levels, and knowledge gaps is crucial for delivering effective and relevant training. This study underscores the importance of continuous learning and the need for ongoing educational support to ensure that nurses remain well-equipped to provide optimal care to patients with cerebral haemorrhage.

Acknowledgment

I am grateful to the almighty God for the strength and opportunity to complete this thesis. Special thanks to Momtaj Mohol, my guide, for his invaluable supervision and advice. I especially thank Mrs. Sadeka Khatun, Principal, Rajshahi Nursing College for her willingness to organize the study under her authority. I also extend my regards to Asst. Prof. Dr. Abu Hena Mostafa Kamal, for their support. Thanks to all staff for their cooperation in this research.

Funding: No funding sources

Conflict of interest: None declared

REFERENCES

1. Amstutz, H. C., & Sakai, D. N. (1975). Total joint replacement for ankylosed hips. Indications, technique, and preliminary results. *JBJS*, *57*(5), 619-625.
2. Vladila, A. M., Mitrea, D. A., Nica, S., Pavel, G., Mihailescu, G., Buraga, I., & Baltateanu, D. (2014). Chronic subdural hematoma: a case report and review of the literature. *Romanian Journal of Neurology*, *13*(1).
3. Earnshaw, S. R., Joshi, A. V., Wilson, M. R., & Rosand, J. (2006). Cost-effectiveness of recombinant activated factor VII in the treatment of intracerebral hemorrhage. *Stroke*, *37*(11), 2751-2758.
4. Writing Group Members, Lloyd-Jones, D., Adams, R. J., Brown, T. M., Carnethon, M., Dai, S., ... & Wylie-Rosett, J. (2010). Heart disease and stroke statistics—2010 update: a report from the American Heart Association. *Circulation*, *121*(7), e46-e215.
5. Carhuapoma, J. R., Mayer, S. A., & Hanley, D. F. (Eds.). (2009). *Intracerebral hemorrhage*. Cambridge University Press.
6. AM, D. (2012). Prediction of haematoma growth and outcome in patients with intracerebral haemorrhage using the CT-angiography spot sign (PREDICT): a prospective observational study. *Lancet Neurol*, *11*, 307-314.
7. Gely-Pernot, A., Coronas, V., Harnois, T., Prestoz, L., Mandairon, N., Didier, A., ... & Benzakour, O. (2012). An endogenous vitamin K-dependent mechanism regulates cell proliferation in the brain subventricular stem cell niche. *Stem cells*, *30*(4), 719-731.
8. Horton, S., Lane, K., & Shiggins, C. (2016). Supporting communication for people with aphasia in stroke rehabilitation: transfer of training in a multidisciplinary stroke team. *Aphasiology*, *30*(5), 629-656.
9. Islam, M. S. (2021). Awareness Level of Nurses Regarding Management of Stroke Patients in Rajshahi Medical College Hospital. *Saudi J Nurs Health Care*, *4*(11), 375-386.
10. Berwaerts, J., Dijkhuizen, R. S., Robb, O. J., & Webster, J. (2000). Prediction of functional outcome and in-hospital mortality after admission with oral anticoagulant-related intracerebral hemorrhage. *Stroke*, *31*(11), 2558-2562.
11. O'Shea, E. (2003). Self-directed learning in nurse education: a review of the literature. *Journal of advanced nursing*, *43*(1), 62-70.
12. Hankey, G. J. (2003). Long-term outcome after ischaemic stroke/transient ischaemic attack. *Cerebrovascular diseases*, *16*(Suppl. 1), 14-19.
13. Huo, H. L., Gui, Y. Y., Xu, C. M., Zhang, Y., & Li, Q. (2022). Effects of the information-knowledge-attitude-practice nursing model combined with predictability intervention on patients with cerebrovascular disease. *World Journal of Clinical Cases*, *10*(20), 6803.
14. O'Connor, S. E. (2000). Nursing interventions in stroke rehabilitation: a study of nurses' views of their pattern of care in stroke units. *Rehabilitation Nursing*, *25*(6), 224-230.