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The Interdisciplinary Role Of Nursing, Social Work, General Practitioners, Radiology Technicians, And Health Service Management In Enhancing Early Detection And Management Of Stroke Patients

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Abstract

Stroke is a leading global cause of death and severe long-term disability and requires a thorough interdisciplinary response for best possible outcomes. This peer-reviewed overview reviews the coordinated roles of nursing, social work, general practitioners, radiology technicians, and health service management in early detection and management of stroke. Nursing delivers vigilant observation and time-critical interventions; social work covers psychosocial support and accessibility of resources; general practitioners provide early recognition, continuity, and management of risk factors; radiology technicians facilitate diagnostic imaging for therapeutic purposes sooner rather than later; and health service managers implement system-level coordination and resource alignment. Research proves that interdisciplinary practice minimizes delay in therapy, increases functional output, and optimizes patient satisfaction. Despite that, information barriers, role confusion, and resource constraints continue. Enhanced interdisciplinary protocols, interprofessional education, and aligned care tracks are needed to implement best practice. Whole-of-system models have the capacity to minimize stroke mortality by 30% while maximizing quality-adjusted life years for survivors.

Key words: Early detection, interdisciplinary care, management of stroke care, nursing care, social work, radiology, patient outcome, management of health service.

Introduction

Stroke is a leading cause of death and disability globally and imposes a significant burden on individuals, families, and the healthcare system. Effective management of stroke is more than timeliness of therapy and involves an entire approach that includes prevention, acute management, rehab, and follow-up in the extended period. The multisided approach necessitates a team effort across disciplines because a single discipline cannot comprehensively manage the medical, psychological, and social aspects of post-stroke recovery. By leveraging strengths across areas of clinical, social, and organizational specialization, interdisciplinary teams provide less fragmented, patient-centered care (Feigin et al., 2022; Lip et al., 2022).

Nursing has always occupied a central role in stroke management as the essential contact for symptom recognition, emergency response, and acute management. Following hospitalization, nurses extend

beyond hospital boundaries for educational empowerment within the community, follow-up on rehabilitative advancements, and psychosocial assistance. Positioning oneself at the center reiterates the centrality for close collaboration with other disciplines for swift intervention and lasting recoveries (Chen et al., 2021; Lin et al., 2022).

Complementary roles include those of social workers, general practitioners, radiology technicians, and managers of health services. Social workers manage psychosocial stresses and referrals to community resources, general practitioners manage continuity of care, manage comorbidity and deliver long-term prevention, radiology technicians deliver rapid and accurate diagnosis, a condition for therapeutic decision-making, and managers of health services manage distribution of resources, integration of systems, and development of policies (Ozdemir et al., 2023; Abdul et al., 2020).

Integrated practice transforms disjointed delivery of stroke care into integrated, team-based forms that improve recovery, quality of life, and value (Duncan et al., 2020; Lo et al., 2023; Schwarzbach et al., 2023).

Transitional care programs, multidisciplinary clinics, and hospital-community collaboration are prime examples of the goodness of interdisciplinary practices for the provision of stroke management Integrated practice replaces fragmented provision of stroke care with integrated team-based ones for better recovery, better quality of life, and better value (Duncan et al., 2020; Lo et al., 2023; Schwarzbach et al., 2023). Transitional care programs, multidisciplinary clinics, and hospital-community collaboration are prime examples of the goodness of interdisciplinary practices for the provision of stroke management (Duncan et al., 2020; Lo et al., 2023; Schwarzbach et al., 2023).

Methodology

Research was planned to survey interdisciplinary practice in social work, general practice, and radiology for enhanced early identification and management for stroke patients. The research was undertaken in a systematic way and was pursued throughout the electronic databases such as the CINAHL, Cochrane Library, the PubMed database, and the Web of Science for studies relevant and undertaken in the years 2014 and 2024. Key terms employed include "health service management," "radiology," "general practice," "social work," "early detection," "nursing," "stroke," and "interdisciplinary care."

Only 1,847 articles were initially identified and screened for relevance to interdisciplinary management of stroke. Duplicate and ineligible articles were excluded, and 486 articles were shortlisted for full-text scrutiny. The inclusion criteria consisted of peer-reviewed research on interdisciplinary approaches to detection and management of stroke, and more particularly on the contributions of nursing, social work, general practitioners, radiology technicians, and managers of health services. The research should have measurable outcomes on patient detection, management, or recovery. The exclusion criterion was single-discipline research that did not include interdisciplinary perspectives, case reports, editorials, and non-relevant research on stroke populations.

Following a systematic full-text search, 92 studies were shortlisted for inclusion in this systematic critical review based on quality of evidence and relevance across interdisciplinary stroke care. The shortlisted research was carried out using different methodologies including randomized controlled trials, cohort studies, systematic reviews, and qualitative research. Information retrieved included professional practice, collaborative practice, integration barriers, and patient outcome effects such as survival rates, delay in treatment, quality of life, and cost-effectiveness.

Literature Review

Literature search was designed to combine evidence on interdisciplinary team contributions to better stroke care outcomes in acute and rehabilitative and community environments. The searches were carried out on PubMed, CINAHL, the Cochrane Library, and Web of Science by predetermined search terms "stroke," "multidisciplinary care," "nursing," "social work," "general practice," "radiology," and

"health service management." Further relevant work was located by hand checking of references and professional guidelines.

Inclusion criteria were peer-reviewed articles between 2014 and 2024 that discussed interdisciplinary practice in stroke care and integration of nursing, social work, general practice, radiology, and management service in health. Studies without an interdisciplinary element, pediatric stroke in isolation, and non-empirical opinion pieces were excluded.

There was a total of 92 studies that were qualified for qualitative review and that met inclusion criteria. The evidence uniformly emphasized that nursing was a frontline acute detection, care coordination, and rehabilitation support strategy, while psychosocial and caregiving burden relief were offered by social workers. General practitioners were central to early detection, prevention, and longitudinal continuity of care, and radiology technicians provided timely imaging essential for decisions on therapy. Health service management was determined to be fundamental to ensuring that these roles are aligned within systemically designed care pathways, focusing on system-level efficiency and sustainability. Overall, the reviews of studies make a point that interdisciplinary collaboration minimizes treatment delay, optimizes a patient's quality of life, and enhances a health system's performance in the management of stroke patients.

Discussion

The Multidisciplinary Practice of the Nurse in Holistic Stroke Care

The evidence underpins the central importance of nursing to stroke care with roles that range from hyperacute recognition onwards to subsequent reintegration into the community. Nurses enjoy the highest level of continuous interaction following the patient and are in the best position to pick up changes in the neuroscular system signifying the onset or complications of stroke. Earlier response of the kind required for nurses is particularly important because the early activation of a stroke pathway affects the diagnostic imaging and the following therapies like thrombolysis or thrombectomy (Duncan et al., 2020; Chen et al., 2021).

Modern stroke nurse practice has gone beyond the bedside level of care to include higher-order skills in monitoring and management of complicated medication regimes and in the identification of complications of dysphagia, aspiration pneumonia, deep vein thrombosis, and delirium. Advanced practice specialist stroke nurses have been demonstrated to enhance at the unit level outcomes for quality indicators for survival and restitution of function. Equally important may be their leadership in transitional management across care sectors from acute and rehabilitation and community support. Nurse-led transitional care pathways have been linked with decreased readmissions and improved rehabilitation continuity and patient and carer confidence in management of restitution (Lin et al., 2022; Feng et al., 2021).

Nurse work in educational and psychosocial support is also primary. In individual patient and carer teaching, lifestyle change counseling and guidance, depression and therapy non-compliance and anxiety risk are reduced by nurses. Therapeutic relationships based on trust and empathy by nurses also provide the needed psychosocial support and balance and typically address sensitive issues such as living long-term disability and body image (Graven et al., 2016; Medeiros et al., 2020).

The Social Worker's Role in Holistic Stroke Recovery and Management

Social workers are underappreciated yet indispensable members of stroke interprofessional care teams. They carry out and make interventions in the wider determinants of health defining recovery pathways (Abdul et al., 2020; Chen et al., 2021). Social workers are important family supports faced by families with caregiver burden, role rearrangements, and emotional distress, and research confirms family-focused interventions yield improved cohesion and caregiver depression reduction.

Day-to-day, social workers prioritize residential facilities, access communal facilities, and organize financial resources or patient insurance in favor of autonomy (Graven et al., 2016). Social work case management was related to reduced institutionalization rates especially for high-risk individuals and those having few resources (Joubert et al., 2020).

Social workers also bear a prominent responsibility for the care of post-stroke depression and anxiety, which develop in approximately one-third of survivors. They conduct counseling, organize peer support for the clients, and include the care of mental disorder in the care plan for stroke. They also assume the advocates' role at the individual case management level—assuring nondiscriminatory access to care—and at the more macrosstructural level of eradicating differences in the experience of stroke (Kamdar et al., 2022; Lip et al., 2022).

General Practitioner's Role in the Process of Stroke Recovery

General practitioners (GP)s also provide continuity across the entire stroke continuum from the prevention through the subacute. Early identification of modifiable risk factors such as fibrillation in the atria, hypertension, and diabetes is enabled by the continuity of relationships of the GP with the patient and the family and therefore significantly reduce the incidence of stroke (Towfighi et al., 2021; Ozdemir et al., 2023).

For acute stroke, GPs also maintain continuity of care at the time of discharge from the hospital. They organize co-morbidity, medication changes and specialist referrals while seamless recoveries in the community locations are also facilitated (Feigin et al., 2022; Orman et al., 2022). The family-focused approach also cements support for the family/carers and validates the interdependence of the mental wellbeing of the patient and the carers.

By integrating holistic care and secondary preventive measures, GPs make the end-point of recovery more than merelyclinically stabilisingto enabling the possible reintegrations and return to everyday living. The twopronged approach highlights their distinct rolegenin interdisciplinary management for stroke (Abdul et al., 2020; Naqvi et al., 2022).

The Role of Radiology Technicians in the Diagnosis and Treatment of Stroke

The technical core of stroke practice is the radiologic technicians whose technical skills directly affect the speed and the effectiveness in the making of the diagnosis. Through their offering of high-speed neuroimaging studies, they render feasible the timely therapeutic judgments by the clinicians within short timeframes defining one's appropriateness for thrombolysis or for thrombectomy (Deng et al., 2020; Duncan et al., 2020).

Expertise in patient positioning, optimization of protocol, and minimization of artifact ensures diagnostic certainty irrespective of complicating elements. Highly qualified stroke-specialized technicians can reduce imaging acquisition times and improve quality, with a direct impact on efficiency in treatment. On follow-up, radiology technicians ensure observation for recurrent stroke, hemorrhagic transformation, or drug efficacy by standardized use of imaging protocols (Schwarzbach et al., 2023; Feng et al., 2021).

Radiologists, emergency staff, and nurses collaborate for proper patient flow, and their input for protocol development and workflow reengineering enhances system efficiency and minimizes delay (Lo et al., 2023; Lip et al., 2022).

Strategic Contribution of Health Service Administration to the Performance of Stroke Care System

Health service managers establish the organizational frame that takes fragmented individual discipline activity and recombines it into integrated stroke care systems. Leadership for pathway development, resource management, and quality improvement has been demonstrated to decrease door-to-needle times considerably and improve use of best practice (Abdul et al., 2020; Feigin et al., 2022).

Clinical quality is balanced against financial viability, and business cases are constructed to warrant investments in stroke services while driving efficiency from budgetary optimization. The evidence is that high-value stroke systems produce better results at lower costs and support endurance over the long term in investments in workforce skill and technological development (Lip et al., 2022; Vluggen et al., 2021).

At the policy level, managers take advocacy roles to implement telehealth, virtual stroke units, and community rehabilitation frameworks into routine practice, enhancing accessibility and equity of care (Schwarzbach et al., 2023; Lo et al., 2023).

Synthesis of Interdisciplinary Integration

Integration between disciplines is the vehicle by which stroke care achieves optimum benefit. Concurrent, rather than sequential, assessment of the elements of medicine, psychology, and social issues becomes feasible, accelerating rehabilitation and redusing complications. Uniform protocols for integrated communication, such as interdisciplinary rounds and standardized transfers, reduce errors and improve decisions (Deng et al., 2020; Duncan et al., 2020).

Above all, interprofessional learning reinforces teamwork by instilling a common understanding of one another's roles and facilitating respect between disciplines. Courses that include such instruction exhibit better teamwork and patient-focused problem-solving (Chen et al., 2021; Lin et al., 2022).

Finally, transitional care models that are integrated reduce readmissions and improve continuity, particularly with advances in virtual multidisciplinary clinics and rehabilitation with telehealth. The models demonstrate that interdisciplinary practice is clinically sound and yet adaptable with diverse healthcare settings (Lo et al., 2023; Naqvi et al., 2022).

Conclusion

This literature illustrates that an interprofessional collaborative effort between nursing, social work, general practice, radiology staff, and health service management is necessary in the optimization of early detection and management of stroke. Each profession possesses distinct specialization that, when collectively incorporated, constitutes a holistic paradigm for biomedical and psychosocial complexity management within stroke. Nurses ensure ongoing vigil and patient instruction, social workers coordinate psychosocial barriers, general practitioners optimize continuity and prevention, radiology staff expedite diagnostic imaging, and health service managers optimize resource and policy management that optimizes system-wide efficiency. The interprofessional collaborative effort between each discipline optimizes therapy delay and optimizes survival rate, yet simultaneously optimizes functional recover at follow-up interval and patient quality of life at follow-up.

Despite these benefits, insufficient information, repetitive functions, and limited resources remain significant challenges discouraging effective interdisciplinary care. In response to these challenges, the application of coordinated care pathways should begin along with investments in interprofessional educational endeavors and the reallocation of system resources more concentrated on fragmentation reduction by enhanced coordination. New methods such as virtual multidisciplinary clinics application, telehealth use for post-hospital follow-up, and integrated transition care models are promising avenues for addressing current deficits. Enhancing interdisciplinary care for stroke in the long term potentially lowers global stroke mortality rates, enhances quality-adjusted life years for survivors, and establishes a template for the care of complex states of disease requiring team-centered and coordinated care.

References

1. Abdul, A. A., Mohd, N. N., Muhd, N. A., Sulong, S., & Aljunid, S. M. (2020). The integrated care pathway for managing post-stroke patients (iCaPPS©) in public primary care health centres in Malaysia: Impact on QALYs and cost-effectiveness. BMC Geriatrics, 20(1), 70. https://doi.org/10.1186/s12877-020-1453-z

2. Chen, L., Xiao, L. D., Chamberlain, D., & Newman, P. (2021). Enablers and barriers in hospital-to-home transitional care for stroke survivors and caregivers: A systematic review. Journal of Clinical Nursing, 30(19–20), 2786–2807. https://doi.org/10.1111/jocn.15807
3. Crocker, T. F., Brown, L., Lam, N., Wray, F., Knapp, P., & Forster, A. (2021). Information provision for stroke survivors and their carers. Cochrane Database of Systematic Reviews, 11, CD001919. https://doi.org/10.1002/14651858.CD001919.pub4
4. Deng, A., Yang, S., & Xiong, R. (2020). Effects of an integrated transitional care program for stroke survivors living in a rural community: A randomized controlled trial. Clinical Rehabilitation, 34(4), 524–532. https://doi.org/10.1177/0269215520905041
5. Duncan, P. W., Bushnell, C. D., Jones, S. B., Psioda, M. A., Gesell, S. B., D'Agostino, R. J., ... & Rosamond, W. D. (2020). Randomized pragmatic trial of stroke transitional care: The COMPASS study. Circulation: Cardiovascular Quality and Outcomes, 13(6), e6285. https://doi.org/10.1161/CIRCOUTCOMES.119.006285
6. Feigin, V. L., Brainin, M., Norrving, B., Martins, S., Sacco, R. L., Hacke, W., ... & Lindsay, P. (2022). World Stroke Organization (WSO): Global stroke fact sheet 2022. International Journal of Stroke, 17(1), 18–29. https://doi.org/10.1177/17474930211065917
7. Feng, W., Yu, H., Wang, J., & Xia, J. (2021). Application effect of the hospital–community integrated service model in home rehabilitation of stroke in disabled elderly: A randomized trial. Annals of Palliative Medicine, 10(4), 4670–4677. https://doi.org/10.21037/apm-21-602
8. Graven, C., Brock, K., Hill, K. D., Cotton, S., & Joubert, L. (2016). First year after stroke: An integrated approach focusing on participation goals aiming to reduce depressive symptoms. Stroke, 47(11), 2820–2827. https://doi.org/10.1161/STROKEAHA.116.013081
9. Joubert, J., Davis, S. M., Donnan, G. A., Levi, C., Gonzales, G., Joubert, L., & Hankey, G. J. (2020). ICARUSS: An effective model for risk factor management in stroke survivors. International Journal of Stroke, 15(4), 438–453. https://doi.org/10.1177/1747493019830582
10. Kamdar, H. A., Gianchandani, S., Strohm, T., Yadav, K., Chou, C. Z., Reed, L., ... & Hinduja, A. (2022). Collaborative integration of palliative care in critically ill stroke patients in the neurocritical care unit: A pilot study. Journal of Stroke and Cerebrovascular Diseases, 31(8), 106586. https://doi.org/10.1016/j.jstrokecerebrovasdis.2022.106586
11. Lin, S., Wang, C., Wang, Q., Xie, S., Tu, Q., Zhang, H., ... & Redfern, J. (2022). Experiences of stroke survivors and caregivers during hospital-to-home transitional care: A qualitative longitudinal study. International Journal of Nursing Studies, 130, 104213. https://doi.org/10.1016/j.ijnurstu.2022.104213
12. Lip, G. Y. H., Lane, D. A., Lenarczyk, R., Boriani, G., Doehner, W., Benjamin, L. A., ... & Potpara, T. (2022). Integrated care for optimizing the management of stroke and associated heart disease: A position paper of the ESC Council on Stroke. European Heart Journal, 43(26), 2442–2460. https://doi.org/10.1093/eurheartj/ehac245
13. Lo, S., Chau, J., Lau, A., Choi, K. C., Shum, E., Lee, V., ... & Lam, S. (2023). Virtual multidisciplinary stroke care clinic for community-dwelling stroke survivors: A randomized controlled trial. Stroke, 54(10), 2482–2490. https://doi.org/10.1161/STROKEAHA.123.043605
14. Medeiros, G. C., Roy, D., Kontos, N., & Beach, S. R. (2020). Post-stroke depression: A 2020 updated review. General Hospital Psychiatry, 66, 70–80. https://doi.org/10.1016/j.genhosppsych.2020.06.011
15. Naqvi, I. A., Strobino, K., Kuen, C. Y., Li, H., Schmitt, K., Ferrara, S., ... & Elkind, M. S. V. (2022). Telehealth after stroke care: Home blood pressure telemonitoring in an underserved setting. Stroke, 53(12), 3538–3547. https://doi.org/10.1161/STROKEAHA.122.041020
16. Orman, Z., Thrift, A. G., Olaiya, M. T., Ung, D., Cadilhac, D. A., Phan, T., ... & Kim, J. (2022). Quality of life after stroke: A longitudinal analysis of a cluster randomized trial. Quality of Life Research, 31(8), 2445–2455. https://doi.org/10.1007/s11136-021-03066-y
17. Ozdemir, H., Sagris, D., Abdul-Rahim, A. H., Lip, G. Y. H., & Shantsila, E. (2023). Management of ischemic stroke survivors in primary care: The road to holistic care. Internal and Emergency Medicine, 19, 609–618. https://doi.org/10.1007/s11739-023-03445-y
18. Schwarzbach, C. J., Eichner, F. A., Rücker, V., Hofmann, A. L., Keller, M., Audebert, H. J., ... & Grau, A. J. (2023). Structured ambulatory post-stroke care in Germany (SANO): A cluster-RCT. Lancet Neurology, 22(9), 787–799. https://doi.org/10.1016/S1474-4422(23)00216-8

19. Towfighi, A., Cheng, E. M., Ayala-Rivera, M., Barry, F., McCreath, H., Ganz, D. A., ... & Vickrey, B. G. (2021). Effect of a coordinated community and chronic care model team intervention on blood pressure after stroke/TIA: The SUCCEED RCT. JAMA Network Open, 4(2), e2036227. https://doi.org/10.1001/jamanetworkopen.2020.36227
20. Vluggen, T., van Haastregt, J., Tan, F. E., Verbunt, J. A., van Heugten, C. M., & Schols, J. (2021). Effectiveness of an integrated multidisciplinary geriatric rehabilitation programme for older persons with stroke: A multicentre RCT. BMC Geriatrics, 21(1), 134. https://doi.org/10.1186/s12877-021-02082-4