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A Study to Assess the Effectiveness of Multifactorial Intervention to Improve Knowledge & Practice Regarding Care of Patients with Stroke Among Caregivers in Selected Ward Areas of PGIMS, Rohtak

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Abstract

The aim of this study was to assess whether involving patient caregivers in the care of stroke patients would influence their caregiving practices compared to caregivers who were not actively involved in the care process. The study was based on the nursing process model, which draws from Ludwin Von Bertalanffy's General System Theory of Nursing. A quasi-experimental, pretest-posttest design was employed to evaluate the impact of caregiver participation in the care of stroke patients on their caregiving practices. A total of 60 caregivers were selected from a larger population using convenience sampling, based on specific inclusion criteria. Data were gathered through structured interviews and observational checklists. A pretest was conducted to evaluate the caregivers' practices in meeting specific care needs, such as oral care, bed baths and back massages, tube feeding, and assistance with elimination. On the first day following the pretest, the investigator demonstrated techniques for providing care in these areas. Over the next 2 days, caregivers participated in the care activities alongside the investigator, receiving feedback and encouragement during the process. After 1 week, a posttest was conducted. In addition to data collection, caregivers were given the opportunity to ask questions and clarify any doubts for their benefit. The results showed a significant improvement in caregiving practices between the pretest and posttest. Notable improvements were observed in all four care areas: oral care (t = 35.155, df = 38, P = 0.05), bed baths and back massages (t = 45.78, df = 38, P = 0.05), tube feeding (t = 58.99, df = 38, P = 0.05), and assistance with elimination (t = 30.02, df = 38, P = 0.05). The overall mean practice score for the experimental group increased significantly from a pretest mean of 22.10 to a posttest mean of 57.80 (t = 60.23, df = 38, P = 0.05). In contrast, no significant change was observed in the control group's mean practice scores. The study concluded that involving caregivers in the direct care of stroke patients led to a substantial improvement in their caregiving practices. This active participation not only enhanced their skills but also contributed to greater patient safety and a reduction in the risk of complications.

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Keywords: Caregiver involvement, stroke patients, caregiving practices, nursing process model, quasi-experimental design

INTRODUCTION

Background of the Study

"A wise man ought to realize that health is his

most valuable possession and learn to treat his illnesses by his own judgement."

Stroke is one of the primary causes of disability globally [1]. Caregivers play a pivotal role in patient recovery and rehabilitation [2]. However, studies have shown that caregivers often lack sufficient knowledge and skills in providing care to stroke patients. This knowledge gap can hinder the effectiveness of care and lead to suboptimal outcomes for patients [3].

To address this issue, multifactorial interventions have been proposed as a means to improve caregivers' knowledge and practices regarding stroke care. These interventions typically involve a combination of educational programs, skill-building workshops, support groups, and other supportive measures aimed at enhancing caregivers' understanding and abilities in managing stroke patients [4].

Stroke is a leading cause of mortality and morbidity worldwide, with significant implications for patients and their caregivers. Caregivers are essential in offering support and help to stroke patients, playing a significant role in their recovery and enhancing their overall quality of life. However, caregivers often face challenges in understanding the complexities of stroke care and implementing effective strategies. This intervention will encompass a comprehensive approach, including educational sessions, practical demonstrations, and interactive workshops. It will focus on imparting essential knowledge about stroke management, rehabilitation techniques, medication adherence, lifestyle modifications, and psychological support for both patients and caregivers [5].

Through this study, we seek to contribute to the body of evidence supporting the importance of caregiver education and support programs in improving outcomes for stroke patients. Ultimately, by equipping caregivers with the necessary skills and knowledge, we aspire to enhance the quality of care provided to stroke patients and facilitate their journey towards recovery and rehabilitation [6].

By evaluating the impact of multifactorial interventions on caregivers' knowledge and practices related to stroke care, this study aims to contribute valuable insights to the field and inform the development of targeted interventions to support caregivers and improve patient outcomes in stroke care settings [7].

A multifactorial intervention encompassing oral care [8], bed baths [9], back massages [10], assistance with elimination [11] and nasogastric tube feeding [12] holds promise for improving caregiver practices and patient outcomes in stroke care settings. Incorporating these elements into a well-rounded program enables caregivers to develop the skills and understanding needed to deliver comprehensive care for stroked patients. This approach addresses various aspects of patient well-being, including hygiene, comfort, nutrition, and elimination, thereby promoting overall recovery and rehabilitation. Moreover, such interventions have the potential to enhance caregiver confidence and satisfaction while contributing to better patient outcomes and quality of life [13].

The earliest known descriptions of stroke date back to ancient civilizations. Medical texts from ancient Egypt, like the Ebers Papyrus (circa 1550 BCE), describe symptoms that align with those of a stroke. Similarly, ancient Greek texts by Hippocrates and Galen also mention conditions resembling stroke [14]. During the Middle Ages and Renaissance, there was limited understanding of stroke, often attributed to supernatural causes. However, some medical scholars, like Avicenna in the Islamic Golden Age, made observations about paralysis and loss of speech that may have been related to stroke [15].

The understanding of stroke began to evolve during the 17th and 18th centuries. Physicians like Thomas Willis in England made anatomical observations of the brain and its blood vessels, laying the groundwork for understanding stroke pathology [16].

The 19th century saw significant advancements in the understanding and treatment of stroke. Notable contributions include the work of Jean-Martin Charcot and Pierre Paul Broca, who made important observations about the neurological effects of stroke [17].

The 20th century marked a turning point in stroke research and treatment. The advancement of neuroimaging methods, including computed tomography and magnetic resonance imaging, transformed the diagnostic process. Furthermore, the introduction of thrombolytic therapy for ischemic stroke in the 1990s marked a significant breakthrough in treatment [18].

In the past few decades, there have been continued improvements in the prevention, treatment, and rehabilitation of stroke. These include improvements in acute stroke care, the development of endovascular procedures for removing blood clots, and the implementation of comprehensive stroke centers [19].

As of last update, strokes were a leading cause of death and dispractice worldwide. According to the World Health Organization (WHO), around 15 million people suffer strokes each year, with around 5 million resulting in death and many more causing long-term dispractice. These figures may have evolved, so it is best to refer to the latest reports from credible health organizations for the most current statistics.

Need for the Study

A “disability” refers to a difficulty in performing tasks that are typically part of our daily routine.

Individuals who have experienced a stroke often face challenges with activities that were once easy, such as walking, speaking, and performing “activities of daily living” (ADLs). These basic tasks include bathing, dressing, eating, and using the toilet, as well as more complex activities known as “instrumental activities of daily living” (IADLs), such as housework, using the phone, driving, and writing checks. Some disabilities are immediately noticeable after a stroke, while others may not become apparent until the individual tries to perform an activity at home for the first time poststroke. Due to these challenges, stroke survivors often rely on others for help with their daily needs. Family members are commonly involved in caregiving, both in hospital and home settings.

Caregivers who assist stroke survivors at home are often family members, such as spouses or adult children, but they can also be friends or professional home health aides. Typically, one person takes on the primary caregiving role, with others providing occasional support. While it is beneficial for caregivers to be involved in patient care, it is crucial that they receive proper training and education. Unfortunately, many caregivers end up providing care without a clear understanding of how to do so correctly. For example, the researcher observed improper feeding techniques used by caregivers while working in the neuro-medical department. Although no complications have been reported yet, these patients remain at a heightened risk of developing issues.

While the nurse provides care in the hospital, once the patient is discharged, it often becomes the responsibility of the public health nurse to follow up with long-term care, as stroke patients require ongoing support.

Unfortunately, in our current system, this process is not functioning effectively. Once patients are discharged from the hospital, family members are expected to assist with meeting the patient’s needs. However, when caregivers are not given sufficient information on how to care for the patient at home and prevent complications, they often feel unprepared and lack confidence in managing the patient’s care. Moreover, stroke patients may be discharged with medical devices, such as Ryle’s tube or urinary catheters, which can be challenging for untrained caregivers to handle.

Therefore, it is crucial during discharge planning to ensure that caregivers are fully aware of the patient's safety, physical, and emotional needs, and that they can provide the required care. Education for caregivers is essential in this process. Involving family members in patient care not only enhances the patient's quality of life but also helps prevent complications. Nurses play a key role in educating family members about proper caregiving techniques. Although various rehabilitation and educational programs are available for both patients and caregivers, having caregivers actively participate in care will significantly improve their caregiving skills and ensure the patient's safety.

Specific Objectives

- To assess the knowledge regarding care of patients with stroke among caregivers in selected ward areas of PGIMS, Rohtak.
- To assess the practice regarding care of patients with stroke among caregivers in selected ward areas of PGIMS, Rohtak.
- To assess the effectiveness of multi factorial intervention to improve the knowledge and practice regarding care of patients with stroke among caregivers in selected ward areas of PGIMS, Rohtak.

Hypothesis

- *H1:* There is a significant difference between the mean practice score of caregivers in meeting selected care needs (oral care, bed bath & back care, Ryle's tube feeding & elimination) of the patients with stroke after the intervention.
- *H01:* There is no significant difference between the mean practice score of caregivers in meeting selected care needs (oral care, bed bath & back care, tube feeding & elimination) of the patients with stroke before intervention.

Operational Definition

1. *Effectiveness:* In this study, effectiveness refers to the improvement in the caregiving practices of stroke patients' caregivers after they receive the intervention, particularly in meeting the patients' selected care needs.
2. *Participation:* Participation is defined as the involvement of caregivers in specific patient care activities alongside the nurse.
3. *Patient's Caregivers:* Patient caregivers are those individuals who spend most of their time with the patient and are responsible for assisting with patient care at home.
4. *Practice:* In this study, practice refers to the ability and skill of caregivers in providing care to stroke patients.
5. *Selected Needs:* Selected needs in this study refer to essential health-related activities that the patient is unable to perform independently, such as oral care, bed baths, back massages, as well as nutritional and elimination needs.
6. *Stroke:* Stroke is a condition where there is a rapid loss of brain function due to an interruption in the blood supply to the brain, either through a blockage in blood vessels or bleeding, resulting in paralysis and a loss of functional abilities. This makes the individual fully or partially dependent on caregivers for assistance in meeting daily needs.

Assumptions

- Stroke impacts an individual's ability to perform personal care tasks.
- The recovery and rehabilitation process after a stroke can be lengthy.
- Individuals affected by stroke may become either partially or fully dependent on others for meeting their basic needs.
- Caregiver education and support can enhance knowledge and competence in providing care.

Limitations

- Due to the small sample size, which is not representative, the findings of the study cannot be generalized.

- A follow-up assessment after discharge was not possible due to the limited duration of the study.

Delimitations

This study is limited to:

- Patients from a single selected hospital.
- Caregivers of patients within the age range of 20–60 years.
- Only specific patient care needs are addressed, rather than all the patient's needs.

Conceptual Framework of the Study

A conceptual framework consists of a set of concepts and propositions that define the relationships between them. It plays several interconnected roles in the advancement of science. Its primary purpose is to make scientific findings meaningful and applicable in a broader context (Christenson & Panula, 1990). The conceptual framework used in this study is based on Ludwig Von Bertalanffy's General System Theory (1968). According to Von Bertalanffy, general system theory is a "science of wholeness," aimed at unifying scientific thought across various disciplines, providing a framework for analyzing the entirety of any given system (Figure 1).

In every system, activities can be broken down into a series of feedback loops, including input, throughput, and output. This process is essential for the system's stability and continued functioning.

Input

In the present study, input refers to assessment of the knowledge and practices regarding care of patients with stroke. Factors affecting input include age, gender, educational status, occupation, relation with the patient, received any instruction related to care, period of stay with patient.

Throughput (Process)

In this study, throughput refers to construction of tool, development, and administration of structured planned health education, assessment of pretest and posttest score of knowledge and practice.

Output

In the present study output refers to as the evaluation of caregivers for gain in knowledge and improvement in practice skills by comparing pretest and posttest mean scores of knowledges and practice regarding care of patients with stroke after administration of structured planned health education program.

Self-structured questionnaire and observational checklist were used to evaluate the knowledge and practice concerning safe care of patients with stroke. The Information thus acquired could be feedback to the system, which could help in the maintenance and improvement of the system.

Feedback

It refers to the product evaluation where program achievements are evaluated to know whether the objectives are met. In this study the feedback is to evaluate structured teaching program in terms of gain in posttest knowledge and practice.

REVIEW OF LITERATURE

A literature review in a research report provides a summary of existing knowledge on a specific practice problem (Nancy & Burns). It is a structured presentation by the writer of what has been published on a particular topic by various scholars. The process of reviewing literature involves identifying, selecting, critically analyzing, and presenting the available information relevant to the subject of interest.

According to Polit and Hungler, a literature review is a critical summary of research on a particular topic, typically prepared to place a research problem in context or to highlight gaps and limitations in previous studies, thereby justifying the need for further investigation.

The researcher has examined both theoretical and empirical literature related to the study topic. The relevant and useful literature identified has been presented in this section.

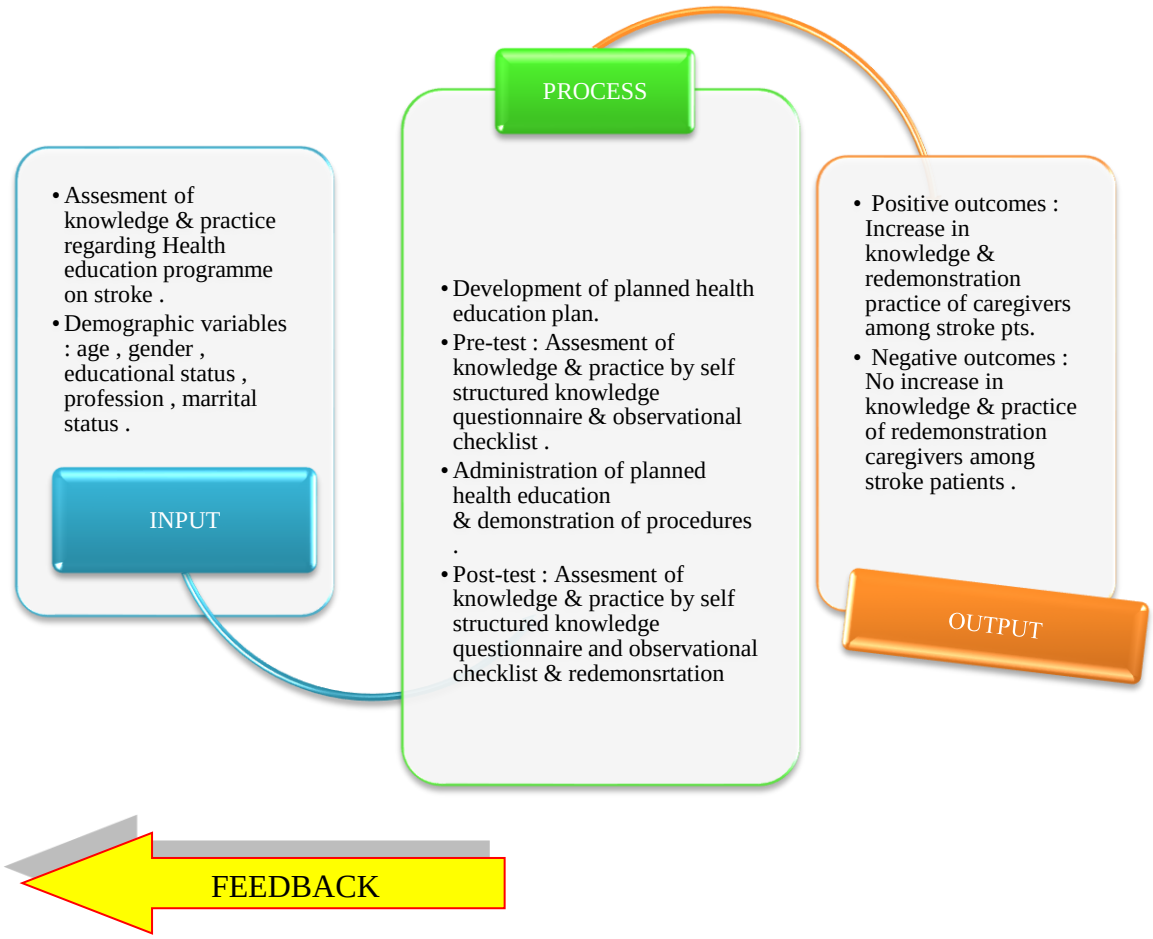

Figure 1. Ludwig von Bertialanffy Model.

Juan Li (2023) conducted a cross-sectional study comparing family functioning and depressive symptoms between patients with acute ischemic stroke and their primary family caregivers, focusing on perceived family function in both groups. This compares perceived family functioning among Chinese patients who suffered from acute ischemic stroke (AIS) and their family caregivers, investigating its association with patients' depressive symptoms. Conducted at two tertiary hospitals in Nanjing, China, the study involved 169 patient-caregiver dyads. Family functioning was assessed using the Chinese version of the Family Assessment Device (FAD), while depressive symptoms in patients were measured using the Centre for Epidemiological Studies Depression Scale. Results revealed unhealthy family functioning among AIS families, with significant differences in FAD scores between patients and caregivers. Worse family functioning and greater disparities between patients and their caregivers were linked to higher levels of depression in the patients. These findings underscore the importance for healthcare professionals to evaluate family functioning in both stroke patients and caregivers, suggesting that enhancing family function and reducing discrepancies within dyads could alleviate patients' depressive symptoms [20].

Huanyu Mou (2023) conducted a randomized controlled trial study in Jinan, China, examined the impact of a family-focused dyadic psycho educational intervention on stroke survivors and caregivers. The intervention comprised three hospital sessions and four postdischarge telephone calls, aiming to enhance knowledge and skills. Results indicated reduced caregiver burden and improved caregiving competence, survivor depressive symptoms, and dyadic relationship quality. However, survivor's functional outcomes showed limited improvement. The findings underscore the intervention's value in stroke rehabilitation and family support, suggesting its integration into routine care. Future research should examine the long-term impacts across various demographic groups and different stroke types [21].

Tugba Sahbaz (2023) conducted a study examining musculoskeletal problems in family caregivers of stroke patients at Kanuni Sultan Suleyman Training and Research Hospital. The study involved 104 stroke patients and their caregivers. Using the Extended Nordic Musculoskeletal Questionnaire, the research revealed that lower back issues in caregivers were associated with the patients' Functional Ambulation Score (FAS), Functional Independence Measure (FIM), Stroke Impact Scale (SIS), and Brunnstrom scores. Neck pain was also prevalent but not correlated with patient-related factors. Upper limb problems correlated with FAS, FIM, SIS, Brunnstrom, and Modified Ashworth Scale scores. The study highlights the significant impact of stroke patients' functional capacity and dispractice levels on caregivers' musculoskeletal health, particularly in the low back region. These results highlight the need for personalized interventions and support systems for caregivers to reduce the musculoskeletal strain linked to caregiving responsibilities [22].

Elton H. Lobo (2022) conducted a study on the use of social media communities by stroke caregivers for information and support during recovery. The study analyzed the content and interactions within these online platforms to understand how caregivers utilize them. Popular platforms were identified through Google searches and filtered based on caregiver support capabilities. Analysis revealed a surge in social media use among caregivers, with charitable and governmental organizations hosting the most interactive communities. Topics focused on stroke prevention, symptoms, and caregiver self-care, often utilizing video resources. The findings underscore social media's potential in meeting caregiver needs, suggesting strategies to enhance interaction and support [23].

Hardeep Singh et al. (2022) conducted a qualitative study examining the experiences of stroke survivors and their caregivers with community-based poststroke services, emphasizing the critical need for action in this area. A qualitative study delved into the experiences of stroke survivors and their caregivers regarding community-based poststroke services, revealing prevalent unmet needs. Despite the potential of Community-Based Stroke Services (CBSS) to address these needs, their design lacks comprehensive guidelines, rendering them underexplored in stroke care. Through interviews and focus groups with 85 participants, four overarching themes emerged: the challenges and aids in accessing CBSS, components of beneficial and hindering stroke services, perceived advantages of CBSS, and avenues to tackle unmet needs. The findings highlight the imperative for personalized stroke services tailored to individual needs. Action is urged from policymakers, providers, and researchers to translate these findings into comprehensive guidelines, practice standards, and interventions, facilitating the personalization and tailoring of CBSS to effectively address persistent unmet needs [24].

Shuanglan Lin (2022) conducted a qualitative longitudinal study explored the hospital-to-home transitional care experience of stroke survivors and their caregivers in China. Conducted at a tertiary hospital, it involved semi-structured interviews with 23 stroke survivor/caregiver dyads, totaling 92 interviews. The analysis identified a three-phase progression: "surviving," "navigating the uncertainty," and "facing a crisis at home." Key themes included optimism and hope, predischarge emotional concerns, lack of stroke knowledge, difficulties in home-based healthcare, post-discharge stress, inaccessible care services, interpersonal disruptions, lifestyle changes, and financial burdens.

These findings underscore the dynamic challenges faced during transitional care. Recommendations include fostering collaboration with healthcare professionals, ensuring access to rehabilitation services and follow-up support, and enhancing community and social support systems. Such measures can contribute to a more supportive environment for stroke survivors and caregivers during the hospital-to-home transition [25].

Germain Manzekele Bin Kitoko (2022) conducted a study aimed to evaluate depression and anxiety burden in stroke survivors and caregivers at Kinshasa's rehabilitation center. Using scales like Hospital Anxiety and Depression Scale and Zarit Burden Inventory, the study found that 80% of caregivers experienced burden, with depression being more prevalent than anxiety. About 30% of stroke survivors showed symptoms of anxiety and depression. Marital status increased burden perception among stroke survivors. High burden was associated with depression and anxiety in caregivers, but not with the severity of dispractice in survivors. The study suggests implementing specialized programs in rehabilitation centers to address psychological distress in stroke survivors and caregivers, with a focus on reducing burden and improving functional outcomes. Additional research is required to investigate how alleviating psychological burden affects functional disabilities [26].

Liu et al. (2021) carried out a cross-sectional study in China, focusing on the empowerment of primary caregivers of poststroke patients with disabilities. They recruited 189 participants from three hospitals in Beijing and used various measurement tools to assess empowerment levels and influencing factors, BARTHEL INDEX tool. The total empowerment score was 161.03 ± 14.678, with dimensions ranked from high to low importance. Factors, such as patient payment methods, accompanying chronic diseases, and caregiver gender affected empowerment. Positive coping style, self-efficacy, and subjective support were positively correlated with empowerment. Regression analysis identified patient payment method, caregiver gender, subjective support, positive coping style, and self-efficacy as the main influencing factors. Overall, caregivers demonstrated moderate empowerment levels, with attention needed for surrounding concerns and lack of personal resources. Recognizing these factors can help in designing focused interventions to strengthen caregiver empowerment in clinical environments [27].

Shilpa Tyagi 2021 conducting a qualitative study exploring support system diversity among family caregivers of stroke survivors. In Singapore, study involving 61 stroke survivors and caregivers to explore caregiver support systems. We identified four themes: cultural influences, types of caregiver support (dyadic, extended, distributed, empowering), breaks in care, and complex relationship dynamics. Caregiver identity shaped support preferences, with spouse caregivers favoring dyadic and extended support, while adult-child caregivers preferred distributed support with paid caregivers. Our findings emphasize tailoring support to caregiver identities and educating clinicians on diverse caregiving arrangements for stroke survivors to enhance family-centered care [28].

Jinhone Wang (2021): In a randomized, controlled study, Jinhone Wang investigated the impact of an education and muscle relaxation (EMR) program on anxiety, depression, and caregiver burden in individuals caring for acute stroke survivors. The study enrolled 110 caregivers of first-time acute stroke patients, who were randomly assigned to either the EMR group or a control group. The EMR group received 12 months of health education and progressive muscle relaxation, while the control group received general rehabilitation advice. Evaluations using the Hospital Anxiety and Depression Scale (HADS) and the Zarit Caregiver Burden Scale were conducted at multiple intervals after the patients' discharge. The results indicated that the EMR group experienced significant reductions in both anxiety and depression levels at 6 and 12 months compared to the control group. The caregiver burden, as measured by the Zarit scale, was also significantly lower in the EMR group at these intervals. These findings suggest that the EMR program effectively reduces anxiety, depression, and caregiver burden, thereby potentially improving the caregivers' mental health and overall quality of life [29].

In a quasi-experimental study, Jaine Kareny da Silva assessed the effectiveness of a support intervention for family caregivers and stroke survivors. The study involved 37 participants, who were divided into an Intervention Group (n = 20) and a Control Group (n = 17). Over an 8-month period, the intervention led to a significant reduction in caregiver burden ($p = 0.039$) and stress ($p = 0.009$), especially noticeable after the intervention. However, no significant changes in the survivors' independence were observed across both groups and time points ($p > 0.05$). The effect size analysis showed moderate effectiveness ($p = 0.45$ and $p = 0.54$). These results highlight the intervention's ability to reduce caregivers' burden and stress without impacting the stroke survivors' level of independence when compared to the control group. The methodology employed Mann-Whitney and Friedman tests, with Bonferroni adjustment by Wilcoxon and Kendall's W coefficient for analysis. These findings highlight the importance of tailored support interventions for caregivers in enhancing their well-being while maintaining focus on the independence of stroke survivors [30].

Langduo Chen J ClinNurs (2021). The systematic review and meta-synthesis examined qualitative research on the hospital-to-home transition for stroke survivors and caregivers. Three key findings emerged: partnerships with survivors/caregivers enhance discharge preparation and self-management; gaps in planning and post-discharge support led to unmet needs; integrated transitional care is crucial for shared decision-making and long-term self-management. This period poses challenges, necessitating further research to address stakeholders' perspectives and unmet needs. Clinical practice should focus on revising protocols to involve survivors/caregivers in transitional care design, with stroke nurses playing a pivotal role in providing timely support and bridging service gaps [31].

Fiona Jones (2021) conducted the Collaborative Rehabilitation in Acute Stroke (CREATE) study, which tackles the issue of inactivity among stroke patients between therapy sessions. The study implemented experienced-based co-design (EBCD) across four stroke units in England to address this challenge. Through interviews, observations, and surveys, three priority areas emerged: "Space", "Activity opportunities", and "Communication". Over 40 improvements were made to address these priorities, resulting in increased social space and activity opportunities. However, staff interactions remained task-driven, and activity levels showed minimal change postimplementation. Although the survey results were inconclusive, the implementation of EBCD was feasible, resulting in environmental enhancements and more opportunities for patient activity. The study found no significant difference between full and accelerated EBCD cycles. The methodology shows promise for use across hospital stroke units to involve staff and stakeholders in co-designing and implementing improvement plans, highlighting the importance of addressing inactivity in stroke rehabilitation [32].

Husna Ahmad Ainuddin Front Public Health (2021). This qualitative study explored the perceptions of older Malaysian stroke survivors, caregivers, and healthcare practitioners regarding falls in stroke rehabilitation. Three key themes emerged: understanding factors and consequences of falls, predominance of physical-based interventions in rehabilitation, and overlooking the role of home hazards in fall prevention. While awareness of falls is high, they are often considered peripheral in stroke care, with emphasis placed on physical interventions for improved functionality. However, interventions addressing home hazards are less known. The study highlights the need for increased attention to home environment risk assessment and education for healthcare professionals, clients, and caregivers. Falls prevention should be a central aspect of stroke rehabilitation. It is suggested that further research involving larger and more diverse populations be conducted to confirm these findings [33].

Wayne F W Chong (2021) conducted this study examined caregiver psychosocial health profiles over 12 months poststroke in Singapore, analyzing transitions among profiles and their association with stroke rehabilitation use. Two caregiver profiles emerged: nondistressed and distressed. Most remained consistent over time, with distressed caregivers often transitioning to nondistressed. Regardless of transitions, nondistressed caregivers tended to care for stroke rehabilitation nonusers.

Patient depression influenced caregiver profiles. Rehabilitation users at 3 months continued use at 12 months, particularly with nondistressed caregivers. The study suggests exploring if caregiver adaptation explains the link between profile transitions and rehabilitation use. Early psychosocial assessments and sustained support for caregivers are recommended to enhance well-being and patient rehabilitation engagement [34].

Angela S. Laberto (2020) conducted a study on This study explored the health-related quality of life (HRQoL) in both caregivers and survivors of transient ischemic attack (TIA) and stroke during the first year after discharge. It compared their HRQoL to that of age- and sex-matched population norms. Data were gathered through questionnaires completed by caregivers (n = 320 at 3 months, n = 326 at 12 months) and survivors (n = 368 at 3 months, n = 383 at 12 months). The findings indicated that caregivers of TIA or stroke survivors did not report a lower HRQoL compared to the matched norms. However, stroke survivors, unlike those with TIA, reported a significantly lower HRQoL at both 3 and 12 months when compared to the population norms. Additionally, higher initial stroke severity (measured by NIHSS) was associated with lower HRQoL in survivors at both time points, but this association was limited in caregivers. These findings suggest that while stroke severity predicts HRQoL in survivors, other factors may be better indicators of caregivers' well-being [35].

Bahlioet S. (2020) conducted a longitudinal study in Iran with 200 family caregivers of older stroke patients revealed crucial insights. Throughout the study, caregivers consistently highlighted the need for respectful treatment when providing care and education. Patient factors like age, hospitalization duration, and level of dependence significantly influenced caregivers' needs. Interestingly, the study found that the total number of caregivers' needs decreased as the disease progressed. To alleviate caregivers' burden, strategies, such as respite planning, involving other family members in care, seeking help from professional caregivers, and tapping into community support resources were recommended. These findings underscore the importance of tailored support mechanisms to address the evolving needs of family caregivers of older stroke patients [36].

Tom Pm M. (2020) conducted a study on the feasibility of an integrated multidisciplinary rehabilitation program for elderly stroke patients, focusing on the process evaluation. The study emphasizes the creation of a comprehensive rehabilitation approach tailored to older stroke patients. While perceived as beneficial by patients and caregivers, certain elements, like goal attainment scaling and self-management training, were found to be challenging for frail elderly individuals with stroke due to cognitive deficits and specific care needs. The program's feasibility needs refinement, suggesting a need for tailored approaches to better suit the frail older population. Despite these challenges, most participants expressed positive opinions about the program's benefits, emphasizing the importance of continued efforts to optimize its feasibility and effectiveness for this vulnerable demographic [37].

Kristina M Kokorelias (2020) conducted a qualitative study explores the impact of caregiving on stroke caregivers' health and well-being. Stroke survivors frequently depend on caregivers for assistance, but the caregiving role can have negative impacts. The review analyzed 39 studies, identifying "caregiving is a full-time job" as the overarching theme, with sub-themes including restructured life, altered relationships, physical challenges, and psychosocial challenges. The findings highlight the need for healthcare professionals to recognize the significant physical and psychosocial burden caregivers face and to provide appropriate support, such as education and respite care. Understanding caregivers' experiences can inform clinical practice, enabling tailored interventions to optimize caregiver well-being. Future research should further investigate the specific needs of caregivers across various health conditions, helping to identify those most in need of support and the types of support required [38].

Hacer Gok Ugur (2019) conducted a study employed a true experimental design to examine the impact of home care for stroke patients and caregiver education on caregiver burden and quality of life. Forty-three experimental and control patients and their caregivers participated. Data were gathered using several scales, such as the Patient and Caregiver Description Form, the Caregiving Burden Scale, and the SF-36 Quality of Life Scale. The experimental group received nursing care based on a model focused on daily living activities, while caregivers were provided with training and support. Statistical analyses included percentage distribution, $\chi 2$, independent sample t-tests, and Mann-Whitney U tests. Although there were no significant differences in pretest scores between the groups, the posttest results for the experimental group caregivers showed notable improvements in all aspects of quality of life. This indicates that home care combined with caregiver education effectively reduced the burden and improved caregivers' quality of life [39].

Shinde M. et al. (2019) conducted a quasi-experimental study to evaluate the effectiveness of a feeding demonstration for caregivers of hemiplegic patients. The study aimed to assess caregivers' feeding practices before and after the demonstration and to examine the relationship between selected sociodemographic factors and feeding skills. A total of 60 participants were included, with a pretest and posttest design to measure the effectiveness of both oral and nasogastric feeding techniques. Thirty participants were selected to assess oral feeding, while the other 30 were assigned to evaluate nasogastric tube feeding. Key findings revealed that most caregivers were aged between 28 and 37 years, 53–63% were female, 40–60% were unemployed, and 70–80% were married. Results indicated significant improvements in feeding skills in both the oral and nasogastric feeding groups after the intervention. However, no significant associations were found between caregivers' age, sex, education, occupation, or marital status, and their feeding skills [40].

Lina Bunketorp-Käll (2018) conducted a controlled study alongside a randomized controlled trial involving 123 stroke survivors. Informal caregivers of 106 participants were surveyed using the Life Situation among Spouses after Stroke Event (LISS) questionnaire. The stroke survivors were assigned to one of three groups: rhythm-and-music-based therapy (R-MT), horse-riding therapy (H-RT), or a delayed intervention control group.

Results indicated that caregivers in the intervention groups experienced a significant improvement in their life situation compared to controls after the 12-week intervention, with a median LISS score change of 1.5. This improvement was sustained in 3 months but not at 6 months. The findings suggest that engaging stroke survivors in multimodal interventions during the late phase after stroke has the potential to positively impact the general life situation of informal caregivers [41].

Marivic B Torregosa Nurs Health Sci. (2018) conducted a qualitative study delves into the experiences of stroke survivors and caregivers from an underserved Hispanic community, often overlooked in poststroke research. Through focus groups, the study explores themes of finding meaning in life amidst poststroke recovery and readjustment. Survivors navigate a journey requiring time, goal reconfiguration, willpower, humor, and support networks. Caregivers, meanwhile, face daily challenges influenced by internal and external factors. Personal, economic, and sociocultural dynamics shape the poststroke recovery process. The findings highlight the importance of policies that promote family-centered care and system-wide advocacy in poststroke recovery. This research sheds light on the unique struggles and resilience within underserved communities, emphasizing the importance of tailored support to address their specific needs in stroke recovery and caregiving [42].

Shilpa Krishnan (2017) conducted a study scoping review aimed at uncovering the needs of stroke survivors as perceived by their caregivers, who are often excluded from medical and rehabilitation planning. Conducted through a comprehensive literature search spanning 2003 to 2014 across various databases, including Medline and Google Scholar, the review synthesized data from 66 studies from 11 countries. The findings revealed three overarching metathemes: (a) body functional needs,

encompassing psychological, physical, and cognitive functions, as well as uncertainty related to function; (b) activity and participatory needs, including lifestyle, speech, and cognitive activities, along with uncertainty related to activities and participation; and (c) environmental needs, covering support, safety, and accessibility, with associated uncertainties. By recognizing these multifaceted needs, healthcare professionals can better tailor interventions and support systems for stroke survivors, ultimately improving outcomes. Integrating caregiver perspectives into clinical decision-making processes holds promise for enhancing the overall care and well-being of stroke survivors [43].

Theresia Krieger (2017) conducted a study on the development of a complex intervention program for stroke caregivers in North-Rhine Westphalia, Germany, aimed to address the lack of support throughout rehabilitation. A mixed-methods approach, including interviews with caregivers and professionals, and participant observations, revealed the need for a personalized, holistic, and multicomponent support system. The program, comprised of five flexible "Conceptual Building Blocks" – Content, Human Resources, Personalized Approach, Timing, and Setting – emerged from fourteen condensed themes. Key features include outreach counseling poststroke, continuous support by trained personnel, and adapting practice to individual needs. This comprehensive program aims to alleviate the physical and mental burden experienced by stroke caregivers, providing tailored support throughout the rehabilitation process [44].

Mansi M Jhaveri et al. (2017) conducted a pilot study on Telemedicine-Guided Education for Secondary Stroke and Fall Prevention examines the value of tele-rehabilitation (TR) home visits for stroke survivors and their caregivers postdischarge from inpatient rehabilitation. Conducted in Houston, Texas, the study involves weekly TR home visits over 6 weeks, led by a multidisciplinary team via videoconferencing. Specialists assess patients, provide personalized education on stroke prevention and fall prevention, and suggest interventions as needed. Primary outcomes include patient consent rates, participation in all visits, and satisfaction scores. Starting in December 2015, the study aims to enroll up to 50 patients over 24 months. Results will guide the potential for a randomized controlled trial to assess the intervention's efficacy in improving stroke outcomes. Ethical approval has been granted, and the results will be shared through a peer-reviewed publication [45].

Researcher conducted a study to assess the effectiveness of a family education program for caregivers of individuals with mental illness. Using a pre-post design, the study evaluated the impact of the Well Ways program in a naturalistic setting, involving a sample of caregivers. The Involvement Evaluation Questionnaire, which measures caregiving consequences, such as worry, tension, urgency, and supervision, along with the General Health Questionnaire-12 (GHQ-12), was completed by 459 caregivers before and after participating in Well Ways. The results showed significant reductions in worry, tension, urgency, and distress (GHQ-12) after completing the program. These improvements were sustained at 3- and 6-month follow-ups. Caregivers of individuals with psychotic disorders reported significantly greater reductions in worry compared to others, and females experienced more significant reductions in tension than males. The findings emphasize the need for programs like Well Ways to support caregivers [47, 48].

Elaine Wittenberg (2017) conducted a study to evaluate the knowledge and skills of caregivers in providing patient care. The findings revealed that many family caregivers lacked the necessary skills and knowledge to offer consistent care to individuals with acute or chronic illnesses, leading to feelings of uncertainty, and lack of preparation. Caregivers reported receiving minimal guidance from healthcare providers, expressed confusion about assuming the caregiving role, and were unsure of the type and level of care expected. Additionally, they did not know how to access the support and resources needed [46].

RESEARCH METHODOLOGY

The methodology of research structures all elements of a study in a manner that is most likely to provide valid answers to the posed research questions (Burns and Grove, 2012). It involves a series of logical steps commonly followed by researchers when addressing the research problem.

This chapter outlines the research approach, design, setting, population, sample size, sampling technique, sampling criteria, tool description and construction, as well as the validity and reliability of the practice. It also covers pilot study, data collection process, and the data analysis methods used in the study.

Research Approach

The research approach serves as an overarching plan for conducting the study. Choosing the appropriate research approach is a fundamental step in carrying out the research inquiry. In this study, an evaluative approach was adopted, as the goal was to assess the impact of caregiver participation in the care of stroke patients and how it influenced their ability to effectively meet the selected care needs of the patients.

Research Design

A quasi-experimental design was employed, which included both pretest and posttest groups. Since the groups were not randomly assigned, there may be some lack of strict homogeneity between them.

I 1 week I
Pre test group O1
X O2
Post test group O1 O2

O1 – Assessment of the practice to meet selected care needs in the group before intervention.

O2 – Assessment of the practice to meet selected care needs in the after intervention on the seventh day.

X – Education through participation of patient caregivers along with the care giver in giving care to patients with Stroke.

Variables in the Study

1. *Independent variable:* Participation of patient care givers in care.
2. *Dependent variables:* Practice of the caregivers in meeting selected needs of Stroke patients (oral care, bed bath and back massage, tube feeding and assisting in elimination).

Setting of the Study

The study was conducted at a government hospital in PGIMS, Rohtak, specifically in the Syham Lal building, where the neuro department is located on the second floor. This floor houses a dedicated ward for stroke patients. These patients were admitted to medicine wards 9 and 10, as well as the neuro ward and neuro ICU, with only one attendant permitted in the ward at a time. The second floor also includes the neurology ward and intensive care unit, which serves both male and female patients.

Population

All caregivers of stroke patients admitted to the medical and neuro departments of the selected hospital during the study period were included, provided they met the eligibility criteria.

Sample Size

The sample comprised 60 caregivers of stroke patients, who were chosen from the population according to the established sampling criteria.

Sampling Technique

A non-probability convenience sampling method was employed for the study. Samples that met the inclusion criteria were selected based on their availability. The participants were drawn from the neuro ICU, medicine ICU, and various wards.

SAMPLING CRITERIA

Inclusion Criteria

The following criteria were used for selecting samples:

1. Caregivers who were actively involved in assisting with the patient's care activities.

2. Caregivers aged between 20 and 60 years.
3. Caregivers of stroke patients.
4. Caregivers who were proficient in Hindi, Haryanvi, or English.
5. Caregivers who showed interest and willingness to cooperate.

Exclusion Criteria

The exclusion criteria included:

1. Caregivers who were trained healthcare professionals.
2. Caregivers who spent less than 6 hours per day with the patient, including visitors.

DESCRIPTION OF THE TOOL

The study utilized two tools: an interview schedule and an observation checklist.

- *Interview Schedule:* The interview schedule was created to gather demographic information, which included nine characteristics: age, gender, education, occupation of the caregivers, relationship to the patient, duration of stay with the patient, any training received about stroke care, and the source of such training.

Observational Checklist

An observation checklist was developed to assess how caregivers performed in addressing the care needs of stroke patients. Four separate checklists were created to evaluate caregiving techniques for four specific activities: oral care, bed bath and back massage, tube feeding, and assistance with elimination. In each check list the steps of technique were written logically and two columns were provided to record the preintervention and postintervention observation.

Observation Checklist to Assess Oral Care Technique

- This checklist consisted of 12 items to assess the practice of patient's caregivers in providing oral care.
- Observation checklist to assess the technique of bed bath and back massage.
- This checklist consisted of 17 items to assess the practice of patient's caregivers in providing bed bath and back massage.
- Observation checklist to assess the technique of tube feeding.
- This checklist consisted of 18 items to assess the practice of patient's caregivers in providing tube feeding.
- Observation checklist to assess the technique of assisting in elimination.
- This checklist consisted of 13 items to assess the practice of patient's caregivers in assisting in elimination.

Development of the Tool

The tool was created based on the study's objectives, a thorough review of existing literature, and consultations with experts. Additionally, the investigator's personal experience working in medical departments significantly influenced the tool's development.

Planned Intervention

- *Step 1:* The caregivers of stroke patients were initially evaluated to assess their practices in addressing specific care needs, such as oral care, bed baths and back massages, tube feeding, and assisting with elimination.
- *Step: 2:* The investigator then demonstrated the proper techniques for addressing these selected care needs (oral care, bed baths and back massages, tube feeding, and elimination assistance) to the caregivers on an individual basis.
- *Step 3:* The investigator encouraged active participation from the caregivers while performing the techniques related to the selected care needs, such as oral care, bed baths, back massages, tube feeding, and assisting with elimination.

- *Step 4:* After the demonstration and practice, the caregivers were reassessed to evaluate their ability to meet the selected care needs of the stroke patients (oral care, bed baths and back massages, tube feeding, and elimination assistance).

SCORING AND INTERPRETATION OF SCORING

A score of 1 was given when a step in the technique was performed, while a score of 0 was assigned if the step was not carried out. The minimum and maximum possible scores for each of the four checklists were as follows in Table 1.

Table 1. Scoring.

	Minimum	**Maximum**
Oral care technique	0	12
Bed bath and back massage	0	17
Tube feeding	0	18
Assisting in elimination	0	13
Total	0	60

GRADING

Based on the score range the grading was done as follows in Table 2.

Table 2. Grading score range.

Technique	**Score**	**Grading**
Oral care technique	10–12	Excellent
	7–9	Good
	5–6	Average
	0–4	Poor
Bed bath and back massage	13–17	Excellent
	10–12	Good
	6–9	Average
	0–5	Poor
Tube feeding	14–18	Excellent
	10–13	Good
	7–9	Average
	0–6	Poor
Assisting in elimination	11–13	Excellent
	8–10	Good
	6–7	Average
	0–5	Poor
Overall score	48–60	Excellent
	36–47	Good
	24–35	Average
	0–23	Poor

VALIDITY OF THE RESEARCH TOOL

Development and Validation of Research Tools

The research tools, which included the study's objectives and the criteria checklist, were reviewed by a panel of five experts – four Nurse Educators and one Neurologist. The nursing experts were Professors with a Master's degree in Nursing, each having over 5 years of experience and working in various nursing colleges in Rohtak. The Neurologist, with more than 10 years of experience, was affiliated with a government hospital at PGIMS, Rohtak.

Reliability of the Research Tool

To assess the reliability of the observational checklists, a method involving two observers was used. The investigator performed the observations, which were then cross-checked by another trained individual. A total of six samples were observed. The correlation coefficient was calculated using the Karl Pearson correlation method. The correlation values obtained were as follows: 0.835 for oral care, 0.801 for bed bath and back massage, 0.867 for tube feeding, and 0.834 for assisting with elimination. These values demonstrated a high positive correlation and strong internal consistency of the checklists.

Pilot Study Report

A pilot study was conducted at the same hospital to assess the feasibility of the research. The necessary permissions were obtained from the Department of Health & Family Planning. The study took place over 10 days, from January 5, 2024, to January 14, 2024. Six caregivers of stroke patients, who met the inclusion criteria, were selected through a convenient sampling method.

After introducing themselves, the investigator explained the study's objectives to the participants. Following the establishment of rapport and obtaining consent, the investigator gathered demographic data through interviews. A pretest was conducted to evaluate the caregivers' practices in addressing the selected care needs (oral care, bed bath and back massage, tube feeding, and elimination assistance) using the checklist. On the first day, the techniques for providing care were demonstrated. Over the next 2 days, the caregivers participated alongside the investigator, with ongoing corrections and encouragement provided during their involvement. A posttest was administered 1 week later.

The data collection for the pilot study lasted 10 days. The results confirmed the adequacy of both the tool and the technique, and no modifications were deemed necessary.

Data Collection Procedure

Before initiating data collection, approval was obtained from the institute's ethical committee and the head of the neurology department. The head of the department was briefed on the study. The researcher familiarized themselves with the ward and identified the participants. The main data collection was conducted from January 20, 2024, to February 17, 2024, over a 5-week period. A total of 60 caregivers of stroke patients, admitted to the medical and neurology units of the hospital, were selected using a convenient sampling method. All selected participants met the inclusion criteria.

After self-introduction, the investigator explained the nature of the study to the samples. After developing a good rapport and obtaining the willingness the investigator collected the demographic data from the samples by interviewing them. A pretest was given individually to the group by assessing their practice in meeting selected care needs (oral care, bed bath and back massage, tube feeding, and assisting in elimination) during the time they were giving care to the patients using a checklist. In group the technique of meeting selected care needs – oral care, bed bath and back massage, tube feeding, assisting in elimination were demonstrated individually by the investigator, on the first day after the pretest and the next 2 days they all participated in the care along with the investigator and corrections and encouragement were given during their participation. After 1 week posttest was conducted. No intervention was given for the group after pretest, and subsequent observation was done after 1 week.

The caregivers in the group were also taught and allowed to clarify their doubts after the data collection was over for their benefit.

PLAN FOR DATA ANALYSIS

The data obtained were analyzed during descriptive and inferential statistics.

Descriptive Statistics

Frequency and percentage distributions were used to analyze demographic variables and to assess the level of knowledge & practice of group in meeting selected care needs of patients with stroke before and after the intervention.

Mean and mean score percentage was used to determine the difference in the level of practice in meeting selected care needs.

Ethical Consideration

Permission for the study was granted by the institutional ethical committee. The study adhered to ethical guidelines and was ethically justified. The nature, objectives, and methodology of the study, along with the intervention, were thoroughly explained to the caregivers, and their informed consent was obtained. Throughout the study, the privacy and comfort of the participants were ensured. Whenever participants had questions, clear and adequate explanations were provided, and all records related to each caregiver were kept confidential. Additionally, after the data collection process was completed, the caregivers were offered guidance and given the opportunity to clarify any doubts regarding the care techniques to benefit them.

ANALYSIS AND INTERPRETATION

Copper K. L. (2008) defines data analysis as the "systematic organization and synthesis of research data, along with the testing of research hypotheses using that data. Interpretation, on the other hand, involves making sense of the study's results and assessing their implications."

This article focuses on the analysis and interpretation of data collected from 60 caregivers of stroke patients, specifically concerning their practices in providing care to these patients.

Section 1: Demographic Profile of the Sample

This section presents the demographic details of the caregivers, including information on their age, gender, education, occupation, relationship with the patient, duration of caregiving, training received on stroke care, and the sources from which they received care instructions. The data is presented in terms of frequency and percentage.

Section 2

Comparison of the level of knowledge of group to provide care to Stroke patients before and after intervention.

The level of knowledge & practice in four aspects of care (oral care, bed bath & back massage, tube feeding and elimination) and the group has been analyzed and compared in frequency, percentage, mean score and significant difference before and after intervention.

This section presents demographic variables with the overall level of practice in providing care in groups before the intervention.

Section I. The Demographic Characteristics of Sample

Table 3 presents frequency and percentage distribution of samples according to personal characteristics of the sample.

Age

The age of the caregivers ranged from 20 to 30 years is 26% (16) in groups. Nearly 23% of the samples (14) in range 31–40 years age group and 42% of the samples (25) in the age group of 41–50 years. About 9% (05) in range 51–60 years age group.

Table 3. Frequency and percentage distribution of samples according to personal characteristics before intervention.

S.N.	Characteristics	Frequency	Percentage (%)
1.	*Age*		
	20–30 years	16	26%
	31–40 years	14	23%
	41–50 years	25	42%
	51–60 years	05	9%
3.	*Sex*		
	Male	40	66%
	Female	20	34%
4.	*Education*		
	Illiterate	16	26%
	High school	20	34%
	Higher secondary	12	20%
	School Graduate\Postgraduate	12	20%
5.	*Occupation*		
	Self-employment	17	28%
	Private employment	26	44%
	Government employment	07	11%
	Unemployed	10	17%

Note: N = 60.

Sex

In male group 66% (44) of samples and 34% (20) were females (where N = 60).

Education

The caregivers showed different levels of education. 26% of the samples (16) in the group were illiterates. 34% of the samples (20) in the group had high school education. Around 20% (12) were in the group high secondary school education. Nearly 20% (12) graduates\ postgraduates were found.

Occupation

In the case of occupation, 28% (17) were self-employed and 44% of the samples (26) in the group were having private employment. And 11% of the sample (07) were government employees. 17% (10) of the group were unemployed.

Table 4. Frequency and percentage of samples according to personal characteristics after intervention.

S.N.	Characteristics	Frequency (N = 60)	Percentage (%)
1.	*Period of stay with the patient*		
	≤5weeks	35	58%
	>5weeks	25	42%
2.	*Relationship with the patient*		
	Wife	12	20%
	Daughter	8	14%
	Sibling	15	25%
	Parents	18	30%
	Others	07	11%
3.	*Instructions regarding care of stroke patients*		
	Yes	35	58%
	No	25	42%

Note: N = 60.

Table 4 presents the frequency and percentage distribution of samples according to personal characteristics.

Period of Stay with the Patient

In the group 58% (35) stayed with the patient for more than 5 weeks & 42% (25) samples stayed with the patient less than 5 weeks.

Relationship with the Patient

20% of samples (n = 12) in group were wives. 14% of samples (n = 8) group were daughters. 25% of samples (n = 15) in group were siblings and 30% of samples (n = 18) were parents & others are 11% (where n = 7).

In all the samples (58%) 35 in the group received instructions from the doctors\nurses & 42% (25) had not received any instructions regarding care of stroke patients.

Section 2. Comparison of Practice of Group to Provide Care to Stroke Patients Before & After Intervention

Table 5 shows frequency and percentage of group according to level of practice to provide overall care before and after intervention.

Most of the samples in group (95%, n = 57) showed poor and 3.5% samples (n = 2) showed average level and 1.5% of samples (n = 1) showed good level of practice in providing care before intervention. After intervention all the samples (64%) showed average level (n = 38) and (36%) and (n = 22) & (36%) shows good level of practice.

The table concludes that the level of practice in providing care to patients with stroke increased considerably in the group after intervention compared to before intervention.

Table 5. Frequency and percentage of group according to level of practice to provide overall care before and after intervention.

S. N.	Level of Practice	Before Intervention		After Intervention	
		Frequency	***Percentage %***	***Frequency***	***Percentage %***
1.	Poor	57	95%	0	0%
2.	Average	2	3.5%	38	64%
3.	good	1	1.5%	22	36%

Note: N = 60.

Table 6. Frequency and percentage of group according to level of practice in different aspects of care before intervention.

Aspects of Care	Level of Practice					
	Good		***Average***		***Poor***	
	F	*%*	*F*	*%*	*F*	*%*
Oral care	5	8%	25	42%	30	50%
Bed bath & back massage	0	0%	60	100%	0	0%
Tube feeding	0	0%	O	0%	60	100%
Assisting in Elimination	2	4%	10	16%	48	80%

Note: N = 60.

Table 6 shows frequency and percentage of group according to level of practice in different aspects of care before intervention.

All the samples (100%, n = 60) in group showed poor practice to perform tube feeding.

All (100%) the samples (n = 60) in both group showed average practice in providing bed bath and back massage.

Most of the samples, 80% (n = 48) in group showed poor performance & 16% (n = 10) showed average and 4% (n = 2) showed good performance in assisting in elimination.

In oral care 50% of samples (n = 30) showed poor performance, 42% of samples (n = 25) showed average performance and only 5 (8%) samples showed good performance in oral care.

The table concludes that the level of practice in providing oral care, bed bath and back massage, tube feeding and assisting in elimination were almost same and showed poor and average level of practice before intervention.

Table 7. Frequency and percentage of group according to level of practice in different aspects of care after intervention.

Aspects of Care	**Level of Practice**							
	Excellent		***Good***		***Average***		***Poor***	
	F	***%***	***F***	***%***	***F***	***%***	***F***	***%***
Oral care	50	84%	5	8%	4	6%	1	2%
Bed bath & back massage	48	80%	12	20%	0	0%	0	0%
Tube feeding	9	15%	44	73%	7	12%	0	0%
Assisting in Elimination	50	84%	10	16%	0	0%	0	0%

Note: N = 60.

Table 7 shows frequency and percentage of group according to level of practice in different aspects of care after intervention**.**

In oral care 84% (n = 50) shows excellent performance & 8% (n = 4) show good performance and 6% (n = 4) samples showed average performance.

80% of samples (n = 48) shows excellent performance & 20% (n = 12) showed good performance in bed bath & back massage.

In tube feeding, 15% (n = 9) shows excellent & 73% (n = 44) showed good performance and 12% of samples (n=7) were showed average performance.

And 84% of samples (n = 50) shows excellent & 16% (n=10) showed good performance in assisting in elimination.

The table concludes that the level of practice in providing care to the patients with stroke in all the four aspects (oral care, bed bath and back massage, tube feeding and assisting in elimination) increased considerably in the after intervention compared to before intervention.

Table 8. Comparison of overall mean practice score of group before and after intervention and level of significance.

Observation	**Max. Score**	**Mean Score**	**Mean Score %**	**SD**
Before intervention	60	22.10	36.83	4.08
After intervention	60	47.16	96.33	4.91

*Note: N = 60. * – Significant. NS – Not Significant.*

Table 8 shows comparison of overall mean practice score of experimental and control group before and after intervention and level of significance.

Before intervention the overall mean practice score was 36.83% in the group.

After the intervention, the overall mean knowledge score was 96.33% in the group.

Statistically there was a significant difference in the mean practice score between after the intervention.

So, the hypothesis (H1) that there will be a significant difference between the mean practice score of groups in meeting selected needs (oral care, bed bath & back care, tube feeding, and elimination) of patients with stroke after the intervention is accepted

The hypothesis (H01) there will not be any significant difference between the mean practice score of group in meeting selected needs (oral care, bed bath & back care, tube feeding & elimination) of the patients with stroke before intervention is accepted.

Figure 2 presents overall mean practice score regarding provision of care before and after intervention.

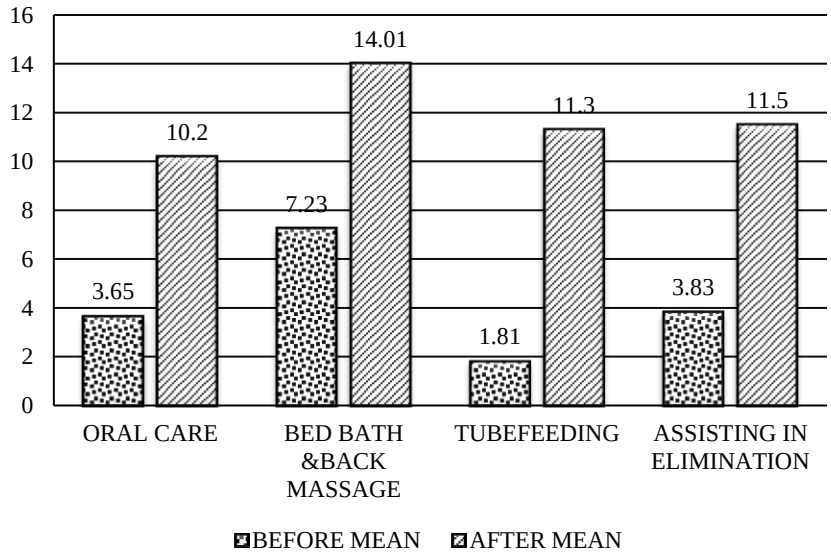

Figure 2. Overall mean practice score regarding provision of care before and after intervention.

Table 9. Comparison of mean practice score of group in different aspects of care before intervention and level of significance.

Aspects of Care	**Max. Score**	**Mean**	**SD**
Oral care	12	3.65	2.5
Bed bath & back massage	17	7.23	1.28
Tube feeding	18	1.81	1.48
Assisting in elimination	13	3.83	1.94

Note: N = 60.

Table 9 presents mean practice score of experimental and control group in different aspects of care before intervention and level of significance.

Before the intervention, the mean practice scores for the group ranged from 24.17% to 38.85% across the four care aspects. The highest practice score was observed for bed bath and back massage (mean = 47.65%), while the lowest score was for tube feeding (mean = 24.17%). The mean practice

scores for oral care and assisting with elimination were 38.85% and 38.88%, respectively. The group displayed a similar trend, with mean practice scores ranging from 23.33% to 48.24% across the areas of oral care, bed bath and back massage, tube feeding, and assisting with elimination before the intervention. The highest score of practice was seen regarding bed bath and back massage (mean = 48.24% and the lowest score of practice was seen regarding tube feeding was 23.33% the mean practice score for oral care (mean = 37.50%) and for assisting in elimination was 40%.

There was no statistically significant difference observed in the mean practice scores for oral care, bed bath and back massage, tube feeding, and assisting with elimination between the control and experimental groups.

Figure 3 presents practice score of group regarding different aspects of care before intervention in percentage.

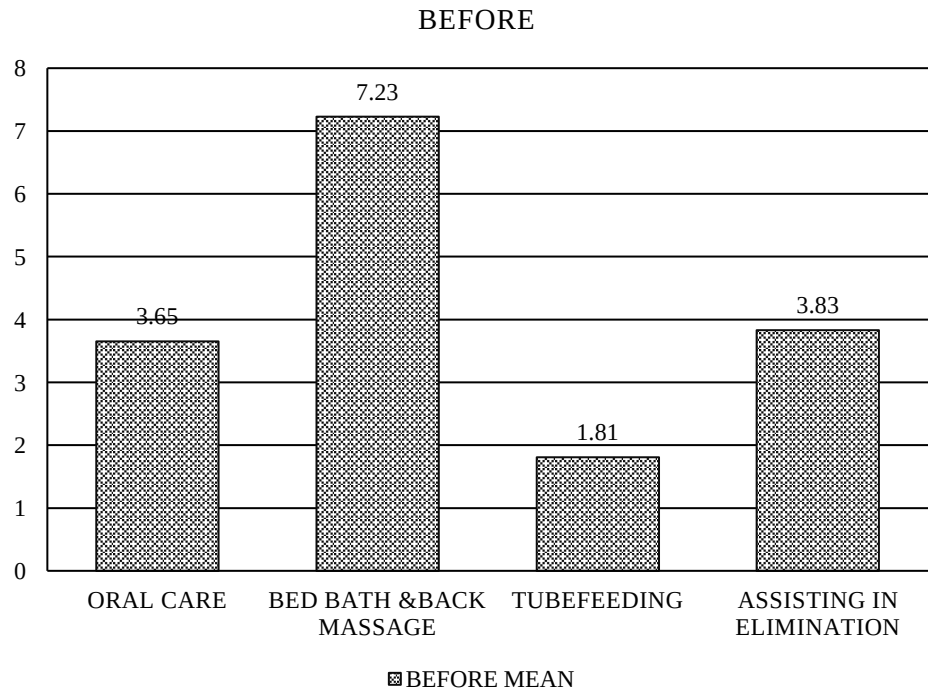

Figure 3. Mean practice score of group regarding different aspects of care before intervention in percentage.

Table 10. Comparison of mean practice score of group in different aspects of care after intervention and level of significance.

Aspects of Care	Max. Score	Mean Score	SD
Oral care	12	10.2	0.48
Bed bath & back massage	17	14.01	0.48
Tube feeding	18	11.3	0.56
Assisting in elimination	13	11.5	0.69

Note: N = 60.

Table 10 presents the mean practice score of in different aspects of care after intervention and level of significance.

After the intervention, the group demonstrated a high mean practice score of 97.94% in performing bed bath and back massage. The mean practice scores across other areas ranged from 94.44% to

97.94%. Specifically, the mean practice scores for tube feeding, assisting with elimination, and oral care were 94.44%, 96.15%, and 97.08%, respectively.

In contrast, the control group's mean scores for all four aspects of care remained unchanged when compared to the baseline observation, even after 1 week.

Figure 4 presents Mean practice score of group regarding different aspects of care after intervention in percentage.

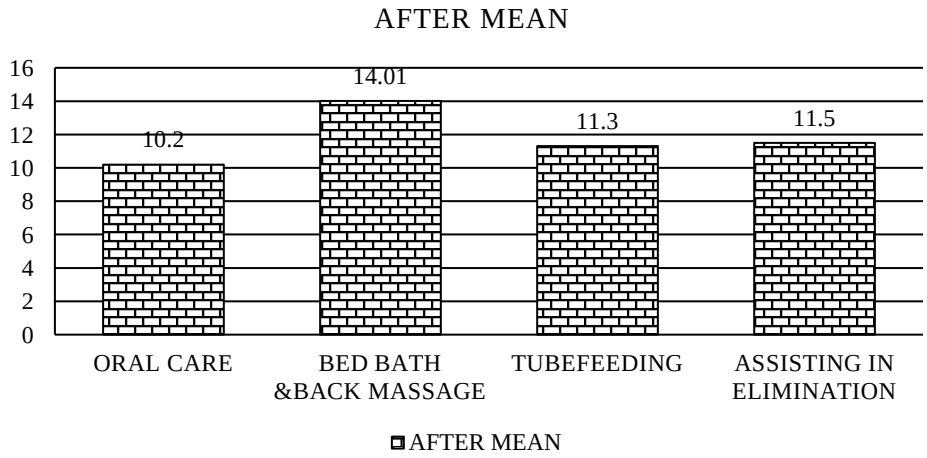

Figure 3. Mean practice score of group regarding different aspects of care after intervention in percentage.

Table 11. Selected demographic variables with overall level of practice in providing care before intervention.

S.N.	Characteristics	Poor		Average	
		F	***%***	***F***	***%***
1.	*Age*				
	20–30 yrs.	16	7.50	0	0.00
	31–40 yrs.	14	20.00	2	5.00
	41–50 yrs.	25	52.50	3	7.50
	51–60 yrs.	5	7.50	0	0.00
2.	*Education*				
	High school	16	47.5	1	2.50
	Higher Secondary	32	27.5	2	5.00
	graduate	12	12.5	2	5.00
3.	*Occupation*				
	Self employed	17	7.5	–	–
	Private	26	12.5	–	–
	Government	7	2.5	–5	–12.5
	Unemployed	10	65.0		
4.	*Relationship with patient*				
	Wife	12	22.5	2	5.0
	Daughter	15	50	2	5.0
	Sibling	15	7.5	1	2.5
	Others	18	7.5	–	–

Note: N = 60.

Table 11 indicates that there was no significant correlation between age, education, occupation, relationship with the patient, and the level of practice in providing care prior to the intervention.

DISCUSSION

In the discussion section, the researcher draws conclusions about the meaning and implications of the finding. This section tries to unravel what the results mean, why things turned out the way they did and how the results can be used in practice.

The study focused on assessing the effectiveness of participation of patient's caregivers in care, on their practice in meeting the selected care needs of patients with stroke.

Personal Characteristics of the Group

Table 3 data shows most of the caregivers were aged between 41 and 50 years, females, educated, and unemployed.

Table 4 explains frequency and percentage distribution of samples according to the personal characteristics. The findings revealed that in both the group, all the samples stayed with the patients for more than 5 weeks. A total of 60% of the samples in the experimental group and 50% of the samples in the control group were daughters. All the caregivers (100%) had not received any instructions regarding care of stroke patients from anywhere.

Tables 5–11 explain the level of practice to provide selected care needs before and after intervention.

Table 5 explains the practice of experimental and control group to provide overall care before and after intervention. Before intervention 85% of samples in experimental and 90% of samples in control group showed poor level of practice and 15% of samples in experimental group and 10% of samples in control group showed average level of practice in providing care. After intervention 100% of samples in the experimental group showed excellent level of practice in providing care whereas the control group remained in the same preintervention level of practice.

The present study revealed that, the level of practice in meeting the selected care needs was improved in the experimental group who participated in care, whereas in the control group there was no improvement in the level of practice in providing care.

Table 6 shows the level of practice of experimental and control group in different aspects of care like oral care, bed bath and back massage, tube feeding and assisting in elimination before intervention. Most of the samples showed poor practice in oral care, tube feeding and assisting in elimination and all samples in experimental and control group showed average practice in bed bath and back massage.

Table 7 shows the level of practice of the experimental and control group in different aspects of care like oral care, bed bath and back massage, tube feeding and assisting in elimination after intervention. The table revealed that the experimental group had a significant increase in the level of practice in different aspects of care after the intervention but the control group showed the same preintervention practice status.

Table 8 shows the comparison of overall mean practice score of experimental and control group before and after intervention and its level of significance. Here the data suggest that the mean practice score of experimental and control group are almost similar before intervention (mean score of experimental group was 36.83% and control group 37.25%). After intervention, mean score of experimental group was higher than the mean score of control group. So, the hypothesis (H1), there is significant difference in mean practice score of experimental and control group in meeting selected

needs (oral care, bed bath, and back massage, tube feeding and assisting in elimination) of patients with stroke after intervention is accepted.

Table 9 presents comparison of mean practice score of experimental and control group in different aspects of care before intervention and level of significance. Both the groups demonstrated a low practice score in all the four aspects of care. In oral care the experimental group showed 38.33% and the control group showed 37.50%. In bed bath and back massage, the experimental group showed 47.65% and the control group showed 48.24%. In tube feeding the experimental group showed 24.17% and the control group showed 23.33%. In assisting in elimination, the experimental group showed mean practice score of 38.85% and the control group showed 40%.

It was concluded from the table that no significant difference was found in level of practice in providing care in different aspects like oral care, bed bath and back massage, tube feeding and assisting in elimination between experimental and control group before intervention.

Table 10 presents comparison of mean practice score of experimental and control group in different aspects of care after intervention and level of significance. The experimental group showed a high mean practice score ranged from 94.44% to 97.08% in different aspects of care after intervention. But the control group showed a similar low mean practice score pattern.

Study results showed that there was a significant difference in the mean practice score in all the four areas among experimental group compared to control group after intervention.

Association of Study Variables with Selected Demographic Variables

Table 11 presents association between selected demographic variables and overall level of practice in providing care before intervention. The present study showed that there was no significant association between age, education, occupation and relationship with the patient and level of practice in providing care before intervention.

CONCLUSIONS

The findings of the study conclude that the participation of patient's caregivers in care influences practice of patient caregivers in providing care. It improves their practice in providing care, thereby ensures the safety of patients and minimizes the risk of complications.

Implication

The findings of the study will have implication for Nursing Education, Nursing Service, Nursing Administration and Nursing Research.

Nursing Practice

Providing care for the patient is primarily a nurse's responsibility. Because of the shortage of nursing staff in the hospitals, the nurses get less time to provide care for each patient. When the caregivers are involved in providing care for the patient, the nurses should ensure that the caregivers are having adequate knowledge and skill in providing care and thus ensure the safety of the patients. The findings of the study clearly prove that the caregivers are poorly prepared for providing care for the stroke patients and majority of them lack professional guidance and supervision. So, the nurses should be more vigilant in educating and supervising the caregivers, to avoid the unwanted complications especially institutions like stroke patients who will be discharged. The nurses should make sure that the caregivers are competent enough in dealing with the patients who are completely or partially dependent on others for their needs.

Nursing Education

Nursing staff and students should be trained on the importance of educating and supervising caregivers who are responsible for the care of stroke patients. Nurse educators should raise awareness

about key aspects of care, including oral care, bed baths and back massages, tube feeding, and assisting with elimination, while also supervising caregivers as they provide care to their family members. This will help enhance patients' nutritional status and improve their overall quality of life.

Nursing Administration

Nurse administrators should take an active role in organizing and coordinating training programs for caregivers caring for stroke patients. They must ensure that staff nurses provide proper guidance and instructions regarding patient care, and caregivers should not be allowed to perform tasks like tube feeding without proper training. Additionally, nurse administrators should facilitate specialized training programs for caregivers in home settings through the hospital's community outreach services.

Nursing Research

This study serves as an initial exploration into the effectiveness of educating caregivers about the care of stroke patients. However, there is a need for more in-depth research into caregivers' knowledge, preparedness, and the physical and emotional stress they experience while providing care. Such research could help develop strategies to improve caregiver support services.

Recommendations

1. A similar study can be replicated on a large population.
2. A study can be conducted among staff nurses to assess their knowledge and technique regarding care of patients with stroke in the aspects of oral care, bed bath and back massage, tube feeding and assisting in elimination.
3. A study can be conducted to assess the preparedness of caregivers in caring their diseased or hospitalized relatives.

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