Jurnal Keperawatan Suaka Insan (JKSI)
Volume 11, No 1, Juni 2026
P-ISSN : 2527-5798, E-ISSN : 2580-7633

The Implementation of Roy's Adaptation Model in the Stroke Unit: A Qualitative Phenomenological Study

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Article Info

Article history:

Received July 14, 2025
Accepted Mei 28, 2025

Keywords:

Roy's Adaptation
Stroke
Satisfaction
Nursing

ABSTRACT

Inability to adapt post-stroke significantly reduces a patient's quality of life and healthcare satisfaction, necessitating holistic conceptual frameworks like Roy's Adaptation Model (RAM) to support the recovery process. This study explored the implementation of RAM in supporting patient adaptation and its contribution to healthcare satisfaction within a stroke care unit. Employing a qualitative phenomenological design, data were gathered through in-depth interviews with nurses and supplemented by direct observations and triangulation with ward heads and patients' families. Thematic analysis revealed five major themes: (1) physiological adaptation via routine monitoring and multidisciplinary collaboration; (2) self-concept adaptation through empathy and psychosocial reinforcement; (3) role function adaptation via patient empowerment and family involvement; (4) interdependence adaptation through active family participation during recovery; and (5) enhanced patient and family satisfaction driven by therapeutic communication, continuous education, and holistic support. These findings suggest that RAM provides a valuable, structured framework for facilitating stroke adaptation, and its implementation in holistic nursing care contributes significantly to improving patient and family satisfaction with clinical services.

Ketidakmampuan beradaptasi pascastroke dapat menurunkan kualitas hidup pasien dan kepuasan terhadap layanan kesehatan, sehingga diperlukan kerangka konseptual yang komprehensif seperti Model Adaptasi Roy (MAR) untuk mendukung proses tersebut secara holistik. Penelitian ini bertujuan mengeksplorasi implementasi MAR dalam mendukung adaptasi pasien serta kontribusinya terhadap kepuasan pasien di unit perawatan stroke. Menggunakan desain kualitatif fenomenologi, data dikumpulkan melalui wawancara mendalam dengan perawat, yang didukung oleh observasi langsung serta triangulasi dengan kepala ruangan dan keluarga pasien. Analisis tematik menghasilkan lima tema utama, yaitu: (1) adaptasi fisiologis melalui pemantauan klinis rutin dan kolaborasi multidisiplin; (2) adaptasi konsep diri melalui pendekatan empatis dan penguatan psikososial; (3) adaptasi fungsi peran melalui pemberdayaan pasien dan keterlibatan keluarga; (4) adaptasi interdependensi melalui partisipasi aktif keluarga selama pemulihan; dan (5) peningkatan kepuasan pasien serta keluarga yang didorong oleh komunikasi terapeutik, edukasi berkelanjutan, dan dukungan holistik. Temuan ini menunjukkan bahwa implementasi MAR menyediakan kerangka kerja yang terstruktur dan berharga dalam memfasilitasi adaptasi pasien stroke, di mana intervensi keperawatan holistik berbasis model ini berkontribusi signifikan meningkatkan kepuasan pasien dan keluarga terhadap pelayanan asuhan keperawatan.

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Introduction

Stroke is an acute neurological disorder that causes changes in an individual's functional, emotional, and social abilities, and can lead to death. According to data from the World Health Organization (WHO), stroke ranks as the leading cause of disability and the second leading cause of death worldwide, contributing to approximately

11% of total global deaths (WHO, 2023). In Indonesia, the prevalence of stroke based on health professional diagnosis is 7 per 1,000 population, and 12.1 per 1,000 population when including self-reported symptoms. The prevalence of stroke increases with age, with the highest cases diagnosed by health professionals occurring among individuals aged over 75 years (43.1%), and the lowest among those aged 15–24 years (0.2%). The prevalence is slightly higher in men (7.1%) compared to women (6.8%). The highest regional rate is found in North Sulawesi (10.8%) and the lowest in Papua (2.3%). In Central Java, the prevalence is 7.7%, with nearly equal distribution between males and females. The increasing prevalence of stroke calls for more effective management strategies in stroke patient care (Kemenkes RI, 2025).

Stroke patients face numerous challenges in the recovery process—physically, psychologically, and socially. Motor impairment, physical disability, depression, anxiety, and social isolation are among the most common problems experienced by stroke survivors (Mone et al., 2023). According to Liu et al. (2023), about 33% of stroke patients experience depression within the first year, while 22% suffer from anxiety. These psychological issues directly affect the patients' quality of life (Chun et al., 2022). Therefore, a holistic and patient-centered nursing approach is essential to support the adaptation process and improve satisfaction with the care provided (Putri et al., 2022). Holistic adaptation enables patients to better cope with physical limitations, emotional stress, role changes, and social dependency, which theoretically contributes to greater comfort, trust in healthcare providers, and overall satisfaction with healthcare services. Thus, successful adaptation is not only associated with improved clinical outcomes but also with positive patient perceptions regarding the quality of nursing care received.

The Roy Adaptation Model (RAM), developed by Sister Callista Roy in the 1970s, offers a comprehensive conceptual framework for understanding individuals' adaptive responses to health changes (Roy, 2021). The model views humans as adaptive systems that dynamically interact through four modes of adaptation: physiological, self-concept, role function, and interdependence (Pardede, 2021)

In the context of stroke care, the Roy Adaptation Model is used to identify barriers to adaptation experienced by patients and to design nursing interventions that support comprehensive adaptation (Khaerunnisa et al., 2024). At the physiological level, stroke patients often experience significant motor impairment that limits mobility and independence. In the self-concept mode, they may face an identity crisis triggered by changes in appearance or bodily function after stroke. The role function mode is affected as many previously active patients must adjust to new roles, both as patients and within their families. The interdependence mode also poses challenges, as many stroke patients suffer from social isolation, both in interpersonal relationships and within family dynamics (Smeltzer & Bare, 2021).

The Roy Adaptation Model provides a clear guideline for supporting stroke patients' holistic adaptation (Dharma & Rahayu, 2022). However, in practice, the implementation of this model in hospitals is often unstructured and not aligned with the specific needs of stroke patients—whether physical, psychological, or social (Kariasa, 2022). Barriers such as limited understanding and inconsistent application of the model in daily nursing practice still persist (Mendrofa, 2020). The implementation of the Roy Adaptation Model in stroke care has primarily focused on improving patients' functional independence and quality of life (Yeşilyurt, 2023). However, studies examining the relationship between the implementation of the Roy Adaptation Model and patient satisfaction in hospital care remain limited.

Previous research shows that patient satisfaction is closely related to the quality of nursing care, including the effectiveness of interventions and the quality of nurse–patient communication (Candan et al., 2022). This study was conducted at RSUD dr. Loekmonohadi Kudus, the main referral hospital for stroke patients in Kudus Regency and surrounding areas, making it a relevant setting to explore the implementation of the Roy Adaptation Theory in nursing practice. This study focuses on a more structured application of the Roy Adaptation Model to enhance stroke patients' adaptation and overall satisfaction, with the expectation that it will contribute to improving the quality of nursing care. The purpose of this study is to explore the implementation of the Roy Adaptation Model in the adaptation process of stroke patients and its contribution to patient satisfaction in stroke care services.

Research Methodology

This study employed a qualitative descriptive design with a phenomenological approach aimed at exploring, in depth, nurses' experiences in implementing the Roy Adaptation Model (RAM) in stroke patient care. The research was conducted in the Anggrek 2 Ward of RSUD dr. Loekmonohadi Kudus, which serves as a specialized unit for stroke patients. The participants consisted of eight nurses selected through purposive sampling. The inclusion criteria included nurses who had at least one year of experience working in the stroke inpatient unit and who were willing to participate as informants. This number of participants was considered sufficient because data saturation was achieved, indicating that additional interviews no longer generated new or meaningful information. To enhance data credibility, source triangulation was conducted with two additional informants, namely the head nurse of the ward and one family member of a stroke patient.

Data were collected through semi-structured in-depth interviews using a validated interview guide, participatory observation of nurses' behaviors during care delivery, and examination of supporting documents, such as Standard Operating Procedures (SOPs) and patients' daily care notes. All interviews were audio-recorded and transcribed verbatim. The data were analyzed using Braun and Clarke's thematic analysis framework, which includes data familiarization, initial coding, theme identification, theme review, theme definition and naming, and final report preparation. Triangulation revealed that nurses consistently implemented adaptive care strategies aligned with the principles of RAM in physiological, self-concept, role function, and interdependence modes. To ensure the trustworthiness of the findings, credibility and dependability were established through source triangulation involving nurses, head nurses, and patients' family members; methodological triangulation involving interviews, observations, and document review; member checking with participants; and maintenance of an audit trail. In addition, the use of multiple data sources and methods helped minimize bias and strengthen the consistency of the findings.

This study obtained an ethical clearance exemption from the Health Research Ethics Committee of RSUD dr. Loekmonohadi Kudus (No. 49/KEPK/XI/2024) and ethical feasibility approval from the Ethics Committee of Universitas Karya Husada Semarang (No. 177/KEP/UNKAHA/SLE/XI/2024). All participants were provided with detailed information regarding the purpose, procedures, benefits, and potential risks of the study. Written informed consent was obtained prior to the interviews. Participant confidentiality and privacy were strictly maintained through the use of anonymous codes and secure data management throughout the research process.

Results

The analysis of interview data revealed five major themes that represent nurses' experiences in facilitating the adaptation process of stroke patients during hospitalization, based on Roy's Adaptation Model. The five themes are: (1) Physiological adaptation of stroke patients, (2) Self-concept adaptation, (3) Role function adaptation within family and community, (4) Interdependence and social support, and (5) Patient satisfaction and expectations toward nursing care. Each theme consists of subthemes that consistently emerged from participants' narratives, reflecting shared experiences in nursing practice.

Theme 1: Physiological Adaptation of Stroke Patients

Nurses described their role in comprehensively supporting the physiological adaptation of stroke patients through the implementation of the Roy Adaptation Model (RAM). Most patients were admitted in a severely weakened condition, frequently experiencing impaired mobility and communication difficulties. As stated by P1, "*Most stroke patients we admit are very weak, unable to move, and even unable to speak*." Initial nursing care focused on routine clinical monitoring, prevention of secondary complications, and maintenance of physiological stability. P1 further explained, "*We conduct routine monitoring of patients' physical conditions and vital signs every shift, reposition patients every two hours, initiate early mobilization when clinically possible, and insert nasogastric tubes (NGTs) for patients experiencing swallowing difficulties*."

To assess patients' clinical conditions, nurses utilized several standardized assessment tools, including the Glasgow Coma Scale (GCS), Barthel Index, and Early Warning Score (EWS). P2 mentioned, "*We use the*

Glasgow Coma Scale, Barthel Index, and EWS to evaluate patients' conditions." Triangulation revealed that these assessment tools were consistently applied to evaluate neurological status, functional ability, and physiological stability.

The major challenge identified by participants was the prevention of complications associated with immobility and impaired swallowing. P3 emphasized, "*The main challenge is preventing complications like bedsores and pneumonia*." Nurses reported that continuous observation and timely intervention were essential to minimize the risk of deterioration during hospitalization.

Care plans were individualized according to the patients' clinical progress and adaptation responses. P5 stated, "*If the patient can sit, we increase self-exercise activities; if their condition worsens, we adjust the plan accordingly*." Family involvement and interdisciplinary collaboration also played important roles in facilitating physiological adaptation. P6 shared, "*We educate families about stroke care at home, including feeding techniques and proper positioning*." Similarly, P7 explained, "*We work with doctors, physiotherapists, speech therapists, and nutritionists*."

Furthermore, participants highlighted that collaboration among healthcare professionals contributed significantly to the continuity and effectiveness of patient care. In cases where patients were uncooperative or experienced dysphagia, nurses continued providing intensive supervision and support. P8 stated, "*Stroke patients are often unconscious, restless, and difficult to communicate with. We need to turn them regularly and monitor closely*." P8 further added, "*Patients with swallowing difficulties often pull out their NGTs, so they require extra attention*."

These findings demonstrate that the implementation of the Roy Adaptation Model (RAM) in physiological care emphasizes holistic monitoring, individualized interventions, family participation, and multidisciplinary collaboration to promote patients' adaptive responses during recovery.

Theme 2: Self-Concept Adaptation of Stroke Patients

In addition to physiological adaptation, nurses also emphasized the importance of supporting patients' psychological and emotional adaptation during the recovery process. Nurses played a key role in rebuilding patients' self-concept and self-confidence following stroke-related disabilities. P1 shared, "*Initially, they feel hopeless, but after seeing small progress like being able to eat or speak a few words, they become motivated and want to recover*."

To enhance patients' motivation and emotional well-being, nurses provided consistent encouragement and positive reinforcement. P8 explained, "*I always greet them by name, encourage them, and praise every improvement so they feel appreciated*." Similarly, P5 added, "*I motivate them to keep practicing, even slowly, and often share success stories of other patients who recovered*."

Patients who initially experienced embarrassment and feelings of helplessness gradually demonstrated improved self-confidence during the adaptation process. P8 mentioned, "*At first, patients feel embarrassed, but once they can eat or talk a bit, they become more confident*." P7 stated, "*I help them start with simple tasks like combing their hair or holding a spoon. It helps them feel capable again*."

Participants also reported that restoring independence in daily activities contributed positively to patients' self-esteem and emotional adaptation. Adaptive techniques related to dressing, eating, and personal care were taught individually according to each patient's functional abilities. P7 explained, "*I teach adaptive techniques, like how to dress with one hand or how to eat safely*." These findings indicate that the Roy Adaptation Model (RAM) supports self-concept adaptation through therapeutic communication, emotional support, motivational reinforcement, and gradual restoration of independence in daily living activities.

Theme 3: Role Function Adaptation of Stroke Patients

Another important aspect identified in this study was patients' adaptation to changes in family and social roles after experiencing stroke. Stroke patients frequently experienced feelings of role loss and dependency within their families. P1 mentioned, "*Many patients feel useless because they can no longer perform their usual roles at home*." Similarly, P2 added, "*Often, male breadwinners feel ashamed because they can't work anymore. I educate families to be more understanding*." Nurses maintained patients' senseof usefulness and participation within the family environment. P3 shared, "*I help patients stay involved in small household decisions, such as matters related to their children*." P4 added, "*Role changes are difficult for patients, so we always involve families to support the adaptation process*."

Participants also emphasized the importance of reframing patients' perspectives regarding their social roles and contributions. P5 stated, "*Sometimes patients say, 'I'm just a burden.' I tell them, 'You can still help your grandchildren study*." Likewise, P7 emphasized, "*I help them realize they can still contribute in other ways, such as giving advice to family members*."

Family-centered interventions were considered essential in facilitating patients' acceptance of role changes and improving their psychosocial adaptation. Nurses reported that emotional support from family members significantly influenced patients' motivation and coping abilities during recovery. The findings suggest that the implementation of the Roy Adaptation Model (RAM) in role function adaptation enables nurses to support patients in redefining their social roles, maintaining family involvement, and developing adaptive coping mechanisms after stroke.

Theme 4: Interdependence and Social Support

Interdependence and social support emerged as essential components in facilitating the adaptation process among stroke patients. Nurses emphasized that family involvement contributed significantly to patients' emotional stability, motivation, and continuity of care both during hospitalization and after discharge.

P1 stated, "*I always involve family members from the beginning so they understand the patient's condition and can help during and after hospitalization*." P2 added, "*I ask the family to assist in training—helping reposition the patient, feeding, or simple communication*." P3 observed, "*Patients who are frequently visited are more motivated. If visits are rare, we contact the family to encourage more attention*."

Participants also reported conducting routine communication and educational support for family members to improve caregiving confidence and reduce anxiety during the recovery process.

P4 highlighted the importance of open communication: "*I always inform the family about the patient's progress so they feel involved and can continue care at home*." P5 noted, "*I often explain the patient's condition to the family in simple terms. Sometimes they are anxious, so I help calm them down*." P6 added, "*I teach families simple techniques, such as holding a spoon or changing positions, so they feel confident when taking the patient home*."

These findings indicate that the implementation of the Roy Adaptation Model (RAM) in stroke care extends beyond physiological adaptation and includes strengthening interdependence through collaborative relationships between patients, families, and healthcare providers.

Theme 5: Patient Satisfaction and Expectations Toward Nursing Services

In addition to supporting patient adaptation, the implementation of the Roy Adaptation Model (RAM) was also associated with patient and family satisfaction regarding nursing services. Participants described that empathetic communication, responsiveness, and clear health information positively influenced the perception of care quality.

P1 stated, "*Usually, patients and their families are satisfied when the service is quick, friendly, and the information is clear. They often express their gratitude*." P2 added, "*Families feel happy when we provide regular updates on the patient's condition—it makes them feel cared for*."

Furthermore, participants explained that family feedback and active participation reflected trust and comfort toward the nursing services provided in the stroke unit.

Families also provided feedback, as noted by P3: "*When families ask many questions, it's actually a sign they feel comfortable. But sometimes, they also give suggestions about things like the waiting area or patient meals*." P4 emphasized, "*Sometimes families ask for a more detailed explanation of the prognosis. I try to use simple language so they can understand easily*." P5 mentioned, "*I think families feel satisfied because they see nurses being patient, attentive, and responsive whenever patients need help*." P6 added, "*We also provide educational leaflets about stroke and arrange doctor consultations when families need more detailed explanations*."

These findings suggest that holistic nursing care based on RAM not only supports patient adaptation in physiological and psychosocial dimensions but also enhances satisfaction with healthcare services through effective communication, emotional support, and family-centered care approaches.

Data Triangulation

Triangulation revealed that nurses demonstrated an adequate understanding of the Roy Adaptation Model (RAM), although the model had not yet been formally incorporated into the hospital's standard operating procedures (SOPs). The head nurse explained that the model was implemented implicitly in daily nursing practice, while patients' families directly perceived the adaptive approaches provided by nurses. Physiological adaptation was implemented through assistance with activities of daily living, physical exercise programs, and fulfillment of basic patient needs. These findings were consistently acknowledged by both nurses and family informants. In addition, self-concept adaptation was facilitated through interpersonal communication and emotional support, which patients' families perceived as motivating and psychologically beneficial for stroke patients.

Role function adaptation was not formally documented; however, it was reflected in nurses' communication and educational efforts regarding patients' changing roles and functional adjustments after stroke. Furthermore, interdependence adaptation was demonstrated through active family involvement in patient care and intensive communication between nurses and family members. Evaluation of the adaptation process was conducted informally through daily nursing rounds, clinical observations, and handover discussions among healthcare professionals. The primary barriers identified included limited nursing time and heavy workloads. Meanwhile, family members suggested increasing the duration of nurse–patient interactions and improving supportive healthcare facilities to optimize adaptive care delivery.

Participant Observation

Observation of the eight participants (P1–P8) demonstrated that nurses in the Anggrek 2 Ward implemented various adaptive nursing approaches that reflected the integration of physiological, self-concept, role function, and interdependence modes consistent with the principles of the Roy Adaptation Model (RAM). The implementation process was holistic, considering patients' cultural values, spirituality, psychosocial conditions, and individual functional capacities.

Empathetic, therapeutic, and communicative behaviors were consistently observed during nurse–patient interactions. Participants P1 and P2 demonstrated nursing approaches that focused not only on physical assistance but also on encouraging family involvement in clinical decision-making processes. Meanwhile, P3 and P4 implemented emotional and social support strategies by fostering therapeutic relationships, providing nutritional education, and offering psychological support to patients and their families.

Participants P5 and P8 adapted nursing interventions to patients' cultural and spiritual backgrounds, whereas P6 and P7 implemented educational strategies tailored to patients' cognitive and functional abilities, including the use of visual aids and self-reflection techniques. These findings indicate nurses' commitment to facilitating comprehensive patient adaptation through individualized and holistic nursing care in accordance with the theoretical principles of RAM.

Furthermore, the integration of interview findings, participant observation, and triangulation data strengthened the credibility, dependability, and confirmability of this study. This comprehensive approach provided a deeper understanding of the implementation of the Roy Adaptation Model in the nursing care of stroke patients.

Discussions

The findings of this study indicate that the implementation of the Roy Adaptation Model (RAM) in nursing practice for stroke patients during hospitalization contributes positively to improving both the patients' adaptive processes and their satisfaction with care. Five main themes emerged, reflecting the core adaptive modes of Roy's model, physiological adaptation, self-concept, role function, interdependence, and service satisfaction, all of which emphasize the importance of an empathetic, educational, and collaborative nursing approach.

1. **Implementation of Physiological Adaptation to Enhance Stroke Patient Recovery**
   Nurses play a central role in facilitating the physiological adaptation of stroke patients. Within the framework of the Roy Adaptation Model (RAM), this dimension is operationalized through interventions such as vital sign monitoring using GCS, Barthel Index, and EWS, early mobilization, prevention of complications (e.g., pressure ulcers and pneumonia), and collaboration with physicians and the rehabilitation team. Nurses also actively educate family members regarding home care techniques, including feeding methods and proper patient positioning.

   Participants reported conducting routine clinical monitoring and collaborative nursing interventions to support patients' physiological stability and recovery processes. Triangulation findings further demonstrated that nurses had practically implemented physiological adaptation principles, although these practices were not yet formally standardized in institutional SOPs. Observational data additionally confirmed the presence of responsive and collaborative practices in addressing patients' basic physiological needs.

   The findings of this study are consistent with previous studies demonstrating that the implementation of RAM supports the physical adaptation process in stroke patients (Hosseini & Soltanian, 2022; Kusuma et al., 2024). Jiang et al. (2020) reported that RAM contributes to the reduction of physical symptoms and improves adaptive responses among stroke patients. Similarly, Baequny et al. (2020) found that optimal RAM implementation accelerates recovery and decreases the risk of complications during hospitalization.

   This study also highlights an important contextual dimension within the Indonesian healthcare setting. The active involvement of family members, which reflects Indonesia's collectivist cultural values, appeared to strengthen the adaptive process experienced by stroke patients. Family participation in patient education sessions, assistance with daily care, and emotional support contributed positively to the continuity of care and patient recovery.

   These findings extend previous literature that has primarily focused on the patient–nurse relationship by emphasizing the contribution of family support as an essential factor in the successful implementation of RAM. Therefore, the effectiveness of physiological adaptation in stroke care should not only be viewed as the outcome of nursing interventions, but also as the result of strong collaboration between nurses, patients, and family caregivers within the sociocultural context of care (Wijaya et al., 2022).

2. **Implementation of Self-Concept Adaptation to Support the Psychological Stability of Stroke Patients**
   Stroke often disrupts patients' self-concept due to physical impairment and increased dependence on others. Within the Roy Adaptation Model (RAM), nurses facilitate adaptive self-concept reconstruction through simple yet meaningful interactions, such as addressing patients by name, validating their identity, offering praise for small achievements, providing encouragement, and supporting their spiritual well-being. These interventions help patients gradually rebuild self-recognition, self-worth, and emotional acceptance during the recovery process.

   Triangulation findings from head nurses and family members indicated that empathetic nurse–patient interactions positively influenced patients' motivation and emotional resilience. In addition, observational

findings demonstrated that nursing care was delivered holistically by incorporating spiritual and cultural dimensions into daily patient care. This holistic approach strengthened patients' psychological adaptation and reduced feelings of helplessness during hospitalization.

This finding aligns with studies by Pardede (2021) and Hosseini & Soltanian (2022), which emphasized the importance of affirmative communication in strengthening stroke patients' self-confidence and emotional stability. Consistent therapeutic communication has been shown to improve psychological adaptation and enhance patients' ability to cope with functional limitations after stroke.

The present study also provides an important contribution within the Indonesian healthcare context, where spirituality and family involvement strongly influence the adaptation process. Family members were actively involved in motivating patients, assisting daily activities, and reinforcing emotional support throughout treatment. This finding suggests that the effectiveness of RAM is influenced not only by individual nursing interventions but also by sociocultural factors embedded within Indonesia's collectivist culture.

Furthermore, this study enriches the existing literature by demonstrating that the Roy Adaptation Model can be implemented more meaningfully when aligned with local cultural values, including spirituality and family participation. Integrating these contextual factors into nursing care may increase the relevance, acceptability, and effectiveness of adaptation-based interventions in stroke patients. Such findings support previous research highlighting the importance of culturally sensitive nursing care in improving patient outcomes (Syamsidar et al., 2023).

3. Implementation of Role Function Adaptation in Restoring the Social Identity of Stroke Patients

Stroke affects not only patients' physical conditions but also disrupts their social and familial roles. The findings of this study revealed that the implementation of the Roy Adaptation Model (RAM) within the role function mode supported patients in redefining their social identity through family support and nurse-led education. Nurses encouraged patients to participate in simple and meaningful activities, such as engaging in household decision-making, providing advice to family members, and performing light tasks according to their physical abilities. These interventions helped patients reconstruct the meaning of their social roles within their families and communities (Kim & Kim, 2023).

Triangulation findings from head nurses and family members demonstrated that nurses consistently implemented educational and communicative strategies to restore patients' role functions. In addition, observational data showed that nurses actively provided motivation, emotional encouragement, and moral support to help patients regain a sense of purpose and self-worth after stroke.

This finding is consistent with previous studies conducted by Jiang et al. (2020) and Dharma et al. (2021), which reported that redefining patient roles contributes to faster social adaptation and reduces depressive symptoms among stroke survivors. The present study further strengthens these findings by demonstrating that role adaptation is not solely influenced by nursing interventions but is also reinforced by family involvement during the recovery process.

Within the Indonesian collectivist cultural context, family participation emerged as a central factor in strengthening patients' social identity following stroke. Family members played an important role in encouraging patients to remain involved in social and household activities despite physical limitations. This cultural dimension expands the application of Roy's Adaptation Model by showing how culturally embedded family support can enhance psychosocial adaptation and improve patients' sense of meaning and belonging.

Therefore, this study confirms previous evidence while also contributing new contextual insights into the cultural adaptation of Roy's Adaptation Model in stroke care. The integration of holistic nursing care, family involvement, and culturally sensitive support emphasizes the importance of theory-based nursing interventions in restoring the social identity and psychological well-being of stroke patients.

4. Implementation of Interdependence as a Pillar of Social Support in Stroke Patient Adaptation

The interdependence mode in Roy's Adaptation Model emphasizes the importance of mutual support among patients, families, and the nursing team. The findings of this study demonstrated that the implementation of this mode was reflected through active family involvement from the beginning of care, direct nurse-led education regarding basic activities such as repositioning, feeding assistance, and communication support, as well as the establishment of open and scheduled communication between nurses and families. According to (Callis, 2020), interdependence plays a crucial role in shaping patients' adaptive responses.

Triangulation revealed that families felt appreciated and actively involved in decision-making processes. Observations also confirmed that nurses delivered education through personalized, repetitive, and family-centered approaches. These findings indicate that effective communication and continuous family engagement contribute positively to the adaptation process of stroke patients.

The findings are consistent with studies conducted by Yuniarti & Kariasa (2020) and Zhang et al. (2024), which highlighted the importance of family empowerment in supporting stroke patients' adaptation. This study strengthens previous evidence by demonstrating that family involvement is not only supportive in nature but also functions as an essential component of daily caregiving activities. In the Indonesian context, families actively participate in repositioning patients, assisting feeding, and facilitating communication during hospitalization.

The cultural context also plays a significant role in the successful implementation of interdependence. Indonesian collectivist values position the family as the primary source of emotional, social, and physical support for patients. As a result, adaptation processes become more optimal when nurses are able to integrate family participation into nursing care planning and implementation. This finding supports Kumar et al. (2022), who emphasized that culturally sensitive and family-centered care can improve patient adaptation outcomes.

Furthermore, this study expands the understanding of how interdependence can be operationalized in clinical practice. Structured communication, continuous education, and collaborative caregiving between nurses and families created a supportive environment that enhanced patient adaptation. Compared to healthcare settings that rely primarily on professional caregivers, the Indonesian context demonstrates a distinctive interaction pattern in which family members serve as the main companions throughout the recovery process.

Therefore, the implementation of Roy Adaptation Model (RAM) in stroke care should not only focus on individual patient adaptation but also encompass collective adaptation involving patients, families, and healthcare providers. This collaborative adaptation process may strengthen emotional resilience, improve caregiving continuity, and support better rehabilitation outcomes among stroke patients.

5. Implementation of Roy's Adaptation Model to Enhance Patient and Family Satisfaction

Patient and family satisfaction served as a direct reflection of the successful implementation of the Roy Adaptation Model (RAM) in nursing practice. Satisfaction was primarily observed through effective communication, nurses' empathetic attitudes, regular information sharing, prompt responses to patient needs, and the provision of educational materials such as leaflets. These nursing practices enhanced the patients' and families' sense of trust, respect, and appreciation toward the care received.

This finding is consistent with previous studies conducted by Mawikere et al. (2021) and Susanti & Yulistiani (2024), which emphasized that responsive nursing care addressing both physical and psychosocial needs is strongly associated with higher levels of patient satisfaction. In this study, triangulation revealed that patients and families expressed a high degree of satisfaction, particularly regarding communication, education, and timely nursing responses.

Observational findings further demonstrated that the humanistic approach adopted by nurses created a positive and supportive inpatient environment. Nurses were consistently observed providing emotional

support, involving family members in care discussions, and maintaining respectful interactions with patients. These findings reinforce the holistic and person-centered principles that are central to the Roy Adaptation Model (RAM).

The present findings also expand the existing literature regarding RAM implementation. Previous studies have primarily emphasized the physiological and psychosocial adaptation dimensions of the model. However, this study demonstrates that patient and family satisfaction may also serve as an important indicator of successful RAM implementation in clinical nursing practice. Thus, RAM functions not only as a framework for improving patient adaptation but also as a holistic care approach that integrates family satisfaction as part of the healing process (Kumar et al., 2022).

Within the Indonesian cultural context, this study identified the significant role of family involvement in the care of stroke patients. Families were actively engaged in decision-making, emotional support, and daily patient assistance during hospitalization. This finding highlights the importance of understanding adaptation not only at the individual level but also within the family system. Therefore, this study proposes the concept of "collective satisfaction," which combines patients' adaptive responses with families' emotional experiences during hospitalization. This concept suggests that the application of RAM in collectivist cultures such as Indonesia may require modification from the classical, more individualistic interpretation of the model.

The clinical implication of these findings is the need to develop RAM-based standard operating procedures (SOPs) that emphasize empathetic communication, repetitive and family-tailored education, and the utilization of simple educational media. Through this approach, both patient and family satisfaction may become measurable indicators of RAM effectiveness while simultaneously strengthening trust in nursing services within hospital settings.

Study Limitations

This study has several limitations that should be considered when interpreting the results. First, the research was conducted at a single regional hospital, RSUD dr. Loekmonohadi Kudus, which limits the generalizability of the findings to other cultural contexts or healthcare systems. Second, the small sample size of eight nurses was adequate to achieve data saturation in a qualitative design but may restrict the diversity of perspectives and may not fully represent the range of experiences of nurses in other institutions. Consequently, the findings might not capture the complete experiences of stroke nurses working in hospitals with different organizational structures or patient populations. Additionally, time constraints and heavy workloads among nurses may have affected the depth of interviews and observations, as some participants were unable to allocate sufficient time for in-depth data exploration.

The implementation of Roy's Adaptation Model (RAM) has not yet been formally supported through standard operating procedures (SOPs) or written guidelines in the clinical setting, resulting in varying degrees of application depending on each nurse's personal understanding and clinical experience. This could lead to inconsistencies in adaptive nursing practices. Furthermore, the absence of standardized SOPs may have influenced the consistency and validity of participants' responses, as each nurse may have interpreted and implemented RAM differently in daily clinical practice. These variations could contribute to differences in perceptions, experiences, and reported nursing interventions during the interviews, thereby affecting the uniformity of the collected data.

Another limitation is the potential for social desirability bias, as participants might have provided responses they believed aligned with the researcher's expectations. To minimize this risk, data triangulation was employed through interviews with head nurses, family members, and direct observations. Nevertheless, such bias cannot be completely eliminated. The researcher also acknowledges the potential for subjectivity during data interpretation. To enhance objectivity and ensure the credibility of findings, critical reflection on the researcher's role and collaborative discussions with the research team were undertaken. Despite these limitations, the study provides valuable insights that can serve as a foundation for future research with broader

sampling, mixed-method approaches, and more structured implementation of Roy's Adaptation Model through formalized and standardized nursing practice guidelines.

Conclusion

The implementation of the Roy Adaptation Model (RAM) in the care of stroke patients at Anggrek 2 Ward, RSUD dr. Loekmonohadi Kudus, has made a positive contribution to the patients' holistic adaptation process and overall satisfaction with nursing care. The adaptive approach applied by nurses encompasses five modes of adaptation, physiological, self-concept, role function, interdependence, and service satisfaction, which are integrated through empathetic, educational, and collaborative interactions. The findings emphasize that empathetic approaches, effective communication, family empowerment, as well as spiritual and cultural support are essential components in enhancing patient and family satisfaction within professional nursing practice. Family involvement plays a central role in the patient's adaptation process, serving as a practical experience that broadens the understanding of how the Roy Adaptation Model can be applied in cross-cultural clinical settings.

Although the adaptation modes of Roy have not yet been formally incorporated into the hospital's standard operating procedures (SOPs), their principles have been consistently implemented in daily nursing practice. This study recommends that the Roy Adaptation Model be formally integrated into institutional care policies. Furthermore, it highlights the need to strengthen nurses' competencies in applying the Roy Adaptation Model through regular training to ensure sustainable, theory-based, and high-quality nursing care. The development of theory-based clinical guidelines for stroke patient care is also recommended to enhance the integration of theoretical frameworks into professional nursing practice.

Acknowledgment

The researcher extends sincere gratitude to all individuals and institutions who provided invaluable support throughout the conduct of this study. Special appreciation is conveyed to the respondents and informants who generously dedicated their time and shared essential data and insights that greatly enriched the research findings. The researcher also expresses deep appreciation to the host institution for granting permission and providing the necessary facilities during data collection. Heartfelt thanks are extended to the academic supervisor for continuous guidance, constructive feedback, and motivation throughout the research process. The technical and administrative assistance from colleagues was also instrumental in ensuring the smooth and timely completion of this study.

CreDiT Author Statement

Eriyana Hariyanti: Conceptualization, Methodology, Investigation, Writing - Original Draft. **Fery Agusman:** Data Curation, Formal analysis, Software, Writing - Review & Editing. **Any Rosiana M:** Supervision, Validation, Project administration, Funding acquisition.

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