



# The Effect of Orem's Self-Care Model on the Improvement of Personal Hygiene in Post-Stroke Clients

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## ABSTRACT

**Background:** Stroke is a leading cause of disability, resulting in impaired physical mobility and increased patient dependence in fulfilling basic needs, particularly personal hygiene. Orem's Self-Care Model is a nursing intervention that focuses on empowering patient independence through structured supportive nursing systems. **Objective:** To analyze the effect of implementing Orem's Self-Care Model on the improvement of personal hygiene among post-stroke clients. **Methods:** This study employed a pre-experimental design using a One-Group Pretest-Posttest approach. A total of 55 respondents were selected through purposive sampling at the General Hospital, Dr. Soehadi Prijonegoro, Sragen. Personal hygiene levels were assessed using the Barthel Index. Data analysis was conducted using the Wilcoxon Signed Ranks Test. **Results:** Prior to the intervention, the majority of respondents were categorized as totally dependent (41.8%). After three days of implementing the Orem Self-Care Model, no respondents remained in the total dependence category (0%), with most shifting to mild dependence (43.6%) and independent status (30.9%). Statistical analysis revealed a p-value < 0.001, indicating a significant effect of the Orem Self-Care Model on improving personal hygiene. **Conclusion:** The application of Orem's Self-Care Model was significantly effective in improving personal hygiene independence among post-stroke clients. This intervention is recommended for integration into rehabilitative nursing care in hospital settings.

## KEYWORDS

Orem Model, Personal Hygiene, Post-Stroke

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## 1. BACKGROUND

Stroke is a sudden neurological dysfunction caused by disrupted cerebral blood flow and is a leading cause of disability and mortality worldwide (Feigin et al., 2022). The World Health Organization (WHO, 2022) reported a 50% increase in lifetime stroke risk

over the past 17 years, with one in four individuals predicted to experience a stroke. In Indonesia, the prevalence of stroke reached 8.3 per 1,000 population based on the 2023 Indonesian Health Survey. This condition often leaves residual symptoms such as hemiplegia or hemiparesis, which

directly affect physical mobility and the individual's ability to fulfill basic daily needs (Li, 2023; Hubner et al., 2024).

One of the most critical consequences of stroke is the patient's inability to maintain personal hygiene. Post-stroke patients frequently experience total or partial dependence on family members for bathing, dressing, and other self-care activities (Yuan et al., 2024). If left unaddressed, this condition may reduce quality of life and increase the risk of infection-related complications. Therefore, nursing care approaches are required not only to address curative aspects but also to empower patients and families through structured self-care education.

Dorothea Orem's Self-Care Nursing Model provides a relevant framework to address this issue. Orem's theory emphasizes the individual's (or family's) ability to perform self-care activities independently to maintain health and well-being (Surani & Nursanti, 2023). Previous studies have demonstrated that the Orem approach is effective in improving cognitive function and daily activities in patients with acute stroke (Bal & Koc, 2024; Chen & Qiu, 2023). The Orem Model positions nurses not only as care providers but also as educators

for patients and families in the process of restoring independence.

Preliminary interviews and observations at the general hospital dr. Soehadi Prijonegoro Sragen revealed that 8 out of 10 stroke patients were still highly dependent on their families for personal hygiene activities. Field observations showed that most patients required full assistance for bathing, dressing, and toileting. Based on this phenomenon, this study aimed to analyze the effect of Orem's Self-Care Model on improving personal hygiene among post-stroke clients at the general hospital dr. Soehadi Prijonegoro Sragen.

## **2. METHODS**

This quasi-experimental study employed a One-Group Pretest–Posttest design and was conducted at the general hospital dr Soehadi Prijonegoro Sragen from August to September 2025. A total of 55 respondents were selected using purposive sampling based on predefined inclusion criteria. The intervention consisted of implementing Orem's Self-Care Model for three consecutive days (30 minutes per session).

The research instrument used was the Modified Barthel Index (10 items), which is

valid and reliable ( $\alpha = 0.988$ ). Data analysis included univariate and bivariate analyses (Paired Samples t-Test or Wilcoxon Test) in JASP, with a significance level set at  $p < 0.05$ .

### 3. RESULTS

**Table 1.** Demographic Characteristics of Respondents (n=55)

Respondent Characteristics	Frequency (f)	Percentage (%)
<b>Age</b>		
Early Adulthood (18–40 years)	3	5.5
Middle Adulthood (41–60 years)	20	36.4
Late Adulthood / Elderly (>61 years)	32	58.2
<b>Sex</b>		
Male	25	45.5
Female	30	54.5
<b>Educational Level</b>		
No Formal Education	15	27.3
Elementary School	29	52.7
Junior High School	5	9.1
Senior High School / Vocational School	5	9.1
Bachelor's Degree	1	1.8
<b>Occupation</b>		
Laborer	4	5.4
Teacher	1	1.4
Housewife	11	14.9
Private Employee	3	4.1
Trader	1	1.4
Village Official	1	1.4
Farmer	28	37.8
Driver	1	1.4
Entrepreneur	5	6.8
<b>Family Support</b>		
Adequate	55	100
Inadequate	0	0

The results indicate that the majority of respondents were elderly (>61 years) (58.2%), female (54.5%), had a low educational background (80%), and worked as farmers (37.8%). All respondents (100%) received adequate family support.

### Respondent Characteristics

This study involved 55 post-stroke clients. Demographic characteristics are presented in [Table 1](#).

### Improvement in Personal Hygiene

Personal hygiene independence levels before and after the intervention were measured using the Barthel Index. The comparison of dependency levels is shown in [Table 2](#).

**Table 2.** Distribution of Dependency Levels Before and After the Intervention (n=55)

Classification	Pretest		Posttest	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Total Dependence	23	41.8	0	0
Severe Dependence	20	36.4	2	3.6
Moderate Dependence	9	16.4	12	21.9
Mild Dependence	2	3.6	24	43.6
Independent	1	1.8	17	30.9

Before the intervention, most respondents were categorized as totally and severely dependent (78.2%). After implementing Orem’s Self-Care Model, total dependence was completely eliminated (0%), and 74.5% of respondents achieved mild dependence to independent status.

**Effect of the Intervention**

The Kolmogorov–Smirnov normality test showed that the data were not normally distributed ( $p < 0.05$ ); therefore, the Wilcoxon Signed-Rank Test was applied.

**Table 3.** Effect of Orem’s Self-Care Model on Personal Hygiene Independence

Variable	Median (Min-Max)	P Value
Before Intervention	25 (0-85)	< 0.001
After Intervention	70 (40-100)	

The median independence score increased from 25 to 70. Statistical analysis revealed a p-value < 0.001, indicating a significant effect of Orem’s Self-Care Model on improving personal hygiene among post-stroke clients at the general hospital dr. Soehadi Prijonegoro Sragen.

**4. DISCUSSION**

The findings showed that the majority of respondents were elderly (>61 years), accounting for 58.2%. This aligns with the existing theory that increasing age is a major risk factor for stroke due to decreased

vascular elasticity. This finding is supported by Rismawan et al. (2021), who reported that stroke cases are predominantly found in individuals aged over 45 years.

Regarding educational background, most respondents had limited formal education. This result is consistent with a study by Rismawan et al. (2021) at RSUD Dr. Soekardjo Tasikmalaya, which found that the highest proportion of post-stroke patients were elementary school graduates (41.5%). Low educational attainment is often associated with limited knowledge of stroke prevention, risk factors, and adherence to

post-stroke treatment and dietary recommendations.

Most respondents worked as farmers (37.8%) and housewives (14.9%). This is similar to the findings of Geneva and Usman (2023), which indicated that heavy physical activity and occupational stress among farmers can trigger hypertension, a major precursor to stroke. Notably, all respondents (100%) received adequate family support. From a nursing perspective, the family functions as a supportive-educative system that plays a critical role in helping patients overcome self-care deficits and accelerate rehabilitation (Luo et al., 2024; Siallagan et al., 2024).

Before the intervention, 78.2% of respondents were classified as totally and severely dependent. This condition represents a common clinical manifestation in post-stroke patients due to neurological impairment and motor weakness (Nurhidayat et al., 2021; Qi et al., 2023). Such self-care deficits indicate a need for interventions that promote independence rather than passive assistance.

After three days of implementing Orem's Self-Care Model, there was a significant improvement in personal hygiene status, with the median Barthel Index score increasing from 25 to 70 ( $p < 0.001$ ). This

demonstrates that the Orem Model effectively transforms patients from passive recipients of care into active self-care agents. These findings are consistent with González & Requena (2023), who reported that systematic self-care approaches significantly improve functional independence.

The application of Orem's Model in this study emphasized three levels of nursing assistance: wholly compensatory, partially compensatory, and supportive-educative systems with strong family support at the general hospital dr. Soehadi Prijonegoro Sragen, education provided by nurses could be continued by family members at home. Collaboration between nurses as educators and family motivation created a conducive environment for patients to gradually practice self-care skills, leading to improved personal hygiene scores.

## **5. CONCLUSION**

This study concludes that implementing Orem's Self-Care Model significantly improves personal hygiene among post-stroke patients at the general hospital dr. Soehadi Prijonegoro Sragen ( $p < 0.001$ ). Prior to the intervention, most respondents were categorized as totally dependent (41.8%). However, after three

days of Orem-based guidance and education, respondents' independence increased substantially, with the majority achieving mild dependence to independent status. These findings confirm that nursing approaches focused on patient empowerment and active family involvement are highly effective in post-stroke rehabilitation

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### **AUTHOR CONTRIBUTIONS**

RR, WW, FAP was contributed to the conception and design of the study, data collection, and manuscript writing. RR was responsible for manuscript revisions and final approval of the version to be published. All authors have read and approved the final manuscript.

### **CONFLICT OF INTEREST**

The author declares no conflict of interest.

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### **DATA AVAILABILITY**

Supplemental data will be provided upon request.

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