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EFFECT OF COGNITIVE ORIENTATION TO DAILY OCCUPATIONAL PERFORMANCE (CO-OP) APPROACH TO IMPROVE SELF-CARE PERFORMANCE AMONG PATIENTS WITH CHRONIC STROKE

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ABSTRACT

Background: Stroke is a leading cause of disability worldwide, often resulting in impairments in self-care performance. Conventional occupational therapy has been widely used to address these deficits, but recent approaches, such as the Cognitive Orientation to Daily Occupational Performance (CO-OP) approach, offer promising alternatives. This study evaluates the effectiveness of the CO-OP approach in improving self-care performance among patients with chronic stroke. **Methods:** A quasi-experimental study was conducted among 30 patients with chronic stroke aged 40 years and above. Participants were divided into a control group receiving conventional occupational therapy and an experimental group undergoing CO-OP intervention for 12 weeks. The Mini-Mental Status Examination (MMSE) was used for cognitive screening, while the Katz Index of Independence in Activities of Daily Living (Katz ADL) and the Canadian Occupational Performance Measure (COPM) were used for

outcome assessment. Statistical analysis was performed using the Wilcoxon signed-rank test and Mann-Whitney U test. **Results:** The experimental group demonstrated significant improvements in self-care performance, with post-test scores of Katz ADL (3.47 ± 1.18) and COPM (3.95 ± 0.74), compared to the control group (Katz ADL: 2.47 ± 0.74 , COPM: 3.2 ± 1.31) ($p < 0.05$). The CO-OP approach facilitated better goal-oriented self-care strategies and promoted independence in daily activities. **Conclusion:** The CO-OP approach is an effective intervention for enhancing self-care performance in patients with chronic stroke. It demonstrates greater improvements compared to conventional occupational therapy, indicating its potential for integration into neurorehabilitation programs.

Keywords: Self-care performance, Cognitive Orientation to Daily Occupational Performance (CO-OP) approach, Chronic stroke, Occupational therapy

INTRODUCTION

Stroke is a major public health concern and a leading cause of long-term disability worldwide. It results from a disruption of blood flow to the brain, leading to neurological deficits affecting motor function, cognition, and self-care abilities [1-3]. Stroke survivors often experience difficulties in performing activities of daily living (ADLs), including dressing, bathing, feeding, and toileting, which significantly impact their quality of life and independence [4, 5].

Traditional rehabilitation approaches, including conventional occupational therapy, focus on restoring motor function through repetitive task practice and compensatory strategies. However, recent advancements in neurorehabilitation have emphasized the role of cognitive-based approaches in enhancing functional recovery [6-8]. One such approach is the Cognitive Orientation to Daily Occupational Performance (CO-OP), a client-centered,

problem-solving intervention originally developed for individuals with developmental coordination disorder and later adapted for adults with neurological impairments, including stroke [9, 10].

The CO-OP approach facilitates skill acquisition through guided discovery, strategy development, and metacognitive awareness [11, 12]. Unlike traditional interventions, CO-OP emphasizes cognitive engagement and problem-solving techniques to improve functional independence. Given its success in other neurological populations, this study aims to evaluate the effectiveness of the CO-OP approach in improving self-care performance among patients with chronic stroke [13].

MATERIALS AND METHODS

Study Design: This study employed a quasi-experimental pre-test and post-test design to assess the impact of CO-OP on self-care performance in chronic stroke

patients.

Participants: A total of 30 patients with chronic stroke (more than six months post-stroke) were recruited from two rehabilitation centers: Brain & Spine Hospital, Chennai, and Saicharan Physio Centre, Arakkonam. Patients were divided into two groups:

- **Control Group (n=15):** Received conventional occupational therapy.
- **Experimental Group (n=15):** Underwent CO-OP intervention.

Inclusion Criteria:

- Patients aged 40 years and above
- Diagnosed with chronic stroke (≥ 6 months post-stroke)
- Mild cognitive impairment (MMSE score > 19)
- Ability to follow simple verbal instructions

Exclusion Criteria:

- Patients with neuropsychological conditions, global aphasia, or severe cognitive impairment

Intervention:

- **Control Group:** Received conventional occupational therapy, including task-oriented training and motor relearning programs for self-care activities.
- **Experimental Group:** Received CO-OP-based intervention for 12 weeks (36 sessions, three days per

week, 40 minutes per session). The CO-OP intervention focused on:

- Identifying self-care goals
- Teaching cognitive strategies (Goal-Plan-Do-Check framework)
- Guided discovery and problem-solving
- Training caregivers for reinforcement

Outcome Measures:

- Mini-Mental Status Examination (MMSE) for cognitive screening [12, 14].
- Katz Index of Independence in Activities of Daily Living (Katz ADL) for self-care performance assessment [13, 15].
- Canadian Occupational Performance Measure (COPM) for occupational performance and satisfaction assessment [12, 17].

Statistical Analysis: Data were analyzed using SPSS version 23. The Wilcoxon signed-rank test was used to compare pre-test and post-test scores within groups, while the Mann-Whitney U test was used for inter-group comparisons. Statistical significance was set at $p < 0.05$.

RESULTS:

The findings of the study indicate that the experimental group, which received CO-OP intervention, showed significantly greater improvements in self-care performance

compared to the control group, which underwent conventional occupational therapy. As shown in **Table 1**, the mean Katz ADL score in the control group increased from 1.67 ± 0.61 (pre-test) to 2.47 ± 0.74 (post-test) ($p=0.008$), suggesting a modest improvement in self-care independence. However, as **Table 3** demonstrates, the experimental group exhibited a more substantial improvement, with the mean Katz ADL score increasing from 2.47 ± 1.18 (pre-test) to 3.47 ± 1.18 (post-test) ($p=0.001$). The post-test comparisons between the groups, indicate a statistically significant difference ($p=0.03$), favoring the CO-OP intervention. The COPM scores reflected a notable improvement in occupational performance and satisfaction in the experimental group. **Table 2** reveals that the control group's COPM scores increased from 2.45 ± 1.23 to 3.2 ± 1.31 ($p<0.05$). In contrast, as seen in **Table 4**, the experimental group demonstrated a more pronounced enhancement in self-care satisfaction, with scores rising from 2.75 ± 0.64 to 3.95 ± 0.74 ($p=0.001$). The post-test comparison further supports the effectiveness of CO-OP, showing a significant difference between groups ($p=0.044$). The graphical representation of these results is depicted. illustrating the comparative improvements in both Katz ADL and COPM scores. Notably, highlights the greater post-test

Katz ADL scores in the experimental group compared to the control group, reinforcing the impact of CO-OP on self-care performance. Likewise, visually demonstrates the superior COPM score improvements in the experimental group. The statistical analyses provide compelling evidence that the CO-OP approach yields superior outcomes in self-care performance compared to conventional occupational therapy. These findings emphasize the value of incorporating CO-OP into stroke rehabilitation programs to enhance functional independence and quality of life in stroke survivors.

Table 1: Comparison Of Pre-Test And Post-Test Katz Scores In Control Group

Katz- Control group	Mean	S.D.	N	Z value	P value
Pre test	1.6667	0.61721	15	-2.652	0.008*
Post test	2.4667	0.74322	15		

*Significant at 5% alpha level

Table 2: Comparison of pre-test and post-test COPM scores in control group

COPM- Control group	Mean	S.D.	N	Z value	P value
Pre Test	2.4533	1.23165	15	-3.51	0.00*
Post test	3.2	1.31366	15		

Table 3: Comparison of pre-test and post-test Katz scores in experimental group

Katz- Experimental	Mean	SD	N	Z value	p value
Pre Test	2.4667	1.18723	15	-3.217	0.001*
Post Test	3.4667	1.18723	15		

Table 4: Comparison between the Post -Test Scores of Katz In Control Group And Experimental Group

Katz	Mean	SD	N	Z value	p value
Control	2.4667	0.74322	15	-2.177	0.03
Experimental	3.4667	1.18723	15		

DISCUSSION:

The results of this study highlight the effectiveness of the CO-OP approach in improving self-care performance among patients with chronic stroke. The structured cognitive strategy training facilitated goal setting, problem-solving, and metacognitive awareness, enabling participants to develop adaptive strategies for daily tasks [18]. Compared to conventional occupational therapy, CO-OP provided greater improvements in self-care independence. The use of goal-directed problem-solving strategies helped participants generalize their skills beyond trained tasks, enhancing their ability to perform ADLs. These findings align with previous research, including studies by McEwen *et al.* (2015) [19] and Henshaw *et al.* (2011) [20], which reported significant gains in occupational performance among stroke patients using

CO-OP. The approach's emphasis on client engagement and self-directed learning contributes to its success in promoting long-term functional improvements.

Despite these positive outcomes, limitations include the small sample size and short follow-up period. Future studies with larger cohorts and extended assessments are recommended to further validate these findings.

CONCLUSION

The CO-OP approach is a highly effective intervention for improving self-care performance in patients with chronic stroke. It offers greater functional gains than conventional occupational therapy by enhancing problem-solving abilities and metacognitive awareness. These findings support the integration of CO-OP into standard neurorehabilitation programs to improve long-term recovery and

independence in stroke survivors.

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