Texila International Journal of Public Health
ISSN: 2520-3134
DOI: 10.21522/TIJPH.2013.12.04.Art005

To Assess the Effectiveness of Forward Chaining Technique on Dressing Skills among Mentally Retarded Children at Kiruba Nursing Home

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Abstract

Mental retardation a developmental disability marked by lower-than-normal intelligence and limited daily living skills, affects 1-3% of children and is typically present at birth. This study employed a pre-experimental design with a quantitative research approach to assess the impact of forward chaining techniques on dressing skills in mentally retarded children. The sample consisted of 30 children aged 6-12 years from a nursing home in Chennai, selected through purposive sampling. The children were divided into three age groups: 6-8 years (33.3%), 8-10 years (30%), and 10-12 years (36.6%). The sample included 66.6% male and 33.3% female children. A majority (90%) had no family history of retardation. Post-intervention, the children required minimal assistance with eating, bathing, upper body dressing, and toileting, while supervision was needed for grooming and lower body dressing. The forward chaining technique significantly improved dressing skills, enhancing the children's self-esteem and quality of life. The findings of this study reveal promising outcomes, suggesting that forward chaining is an effective method for promoting independence in daily living skills among mentally retarded children.

Keywords: *Dressing Skills, Forward Chaining Technique, Mentally Retarded Children.*

Introduction

The forward chaining strategy is an organised behavioural intervention that divides complicated abilities into smaller, more achievable steps. This strategy is especially effective for people with mental impairment, who frequently encounter major difficulties in acquiring and practising daily life activities independently [1]. Dressing, a core self-care skill, is critical for personal independence and self-esteem, and successful treatments to improve this ability can have a substantial impact on these persons' lives. [2]. The objective of the research is to measure dressing abilities in mentally retarded children and determine the effectiveness of the forward chaining strategy in developing these skills at Kiruba Nursing Home. Forward chaining involves teaching a task by starting with the first step and progressing sequentially until the entire task is learned. This method ensures that each step is mastered before moving on to the next, which can be particularly effective for tasks that require a sequential understanding, such as dressing [3,4]. Research has demonstrated the effectiveness of forward

Received: 11.06.2024 ***Accepted: 20.10.2024*** ***Published on: 27.12.2024***
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chaining in teaching dressing skills to children with moderate mental retardation [5]. The research investigated the effects of forward and backward chaining techniques on dressing skills in school-aged children with moderate mental retardation. Using a single-subject ABA design, they found significant improvements in dressing skills for all participants in both intervention groups. The study concluded that forward chaining, along with physical and verbal prompts and positive reinforcement, facilitated significant skill acquisition [6]. Similarly, a study focused on the effectiveness of chaining techniques in improving dressing skills among children with moderate mental retardation [7]. Through observation and interviews, the researchers found significant improvements in the children's ability to dress independently after the intervention, underscoring the value of forward chaining in enhancing self-care skills [8].

Forward chaining is helpful for children who have difficulty with sequencing and generalizing activities. The therapist gives varying numbers of cues, or prompts, before or during an activity. Therapist or person cues and environment or task cues may occur naturally or artificially in an environment [9]. Therapists use verbal gestural, or physical cues or a combination of all three. .Environmental or task cues may include picture sequences or checklists, colour coding, positioning, or modifying the sensory properties of the environment or materials used in a task [10].

The study examined the effectiveness of backward chaining in improving buttoning skills, a subset of dressing skills, in a child with moderate intellectual disability and poor vision. While their study focused on backward chaining, it highlighted the general efficacy of chaining techniques in teaching self-help skills to children with intellectual disabilities. This study provides additional support for the use of structured intervention methods like forward chaining to improve daily living skills these studies collectively highlight the potential of forward chaining techniques to enhance the dressing skills of mentally retarded children, contributing to their independence and overall quality of life. By breaking down complex tasks into manageable steps and providing appropriate guidance and reinforcement, forward chaining offers a structured and effective approach to skill acquisition for this vulnerable population. This study aims to further explore and validate these findings within the context of Kiruba Nursing Home, focusing specifically on dressing skills.

Methods and Materials

A Quantitative research approach was adopted for this study to accomplish the objectives of the study. The research design used for this study was a pre-experimental design. The study was conducted at Kiruba Nursing Home, Sriperambur. The population of the study comprises mentally retarded children in the age group of 6-12 years in the nursing home. The samples were selected by the purposive sampling technique method. After obtaining ethical clearance from the Institutional Human Ethical Committee (IHEC) of Saveetha Institute of Medical & Technical Science (SIMATS) & formal permission from the department head of mental health unit of Saveetha College of Nursing, the main study was conducted the investigation recruited 30 study samples study participants, based on the inclusion criteria by using non-probability sampling technique the purpose of the study was explained to the care taken of the study participants which is clearly in-depth informed and obtaining written consent from the care taken and study participants. For the experimental group the investigator starts to give a session for 2 times a day with 30 to 45 min of class on self-care management based on the fundamental independence measure scale (FIM) for 1 week and the post-test was conducted by the structured questions formed by the investigator. The therapy was given for 3 months, three sessions were conducted per

week, and each session was conducted for about 30 minutes. The session started with warm-up activities. By using forward chaining breaks down a task into small steps and then teaches each step with sequence by itself. In the first five sessions, verbal prompting, physical prompting, rewards and social reinforcement were used. After the instruction, the first step of dressing was taught with full support by using verbal prompting, and physical prompting. Once the first step was done independently, social reinforcement and rewards were given (Compliments, high five. stickers, stars). Then, the remaining steps were taught in the same manner. At the end of five sessions, partial physical prompting was used. Every day the experimental group had the session which was monitored by the investigator and also by the care given of the study participants the children were kept comfortable after the session was fined the investigator monitored for any indication of harmfulness.

Results

The Demographic Variables of Mentally Retarded Children, revealed that among the mentally retarded children, 33.3% were aged between 6-8 years, 30% were aged between 8-10 years, and 36.6% were aged between 10-12 years. Gender distribution showed a higher prevalence of males (66.6%) compared to females (33.3%). In terms of family history, only 10% had a family history of mental retardation, while 90% did not. The distribution of children in families indicated that 43.3% were the only child, 40% had one sibling, and 16.6% had two siblings. The religious affiliation showed that 53.3% were Hindu, 26.6% were Christian, 16.6% were Muslim, and 1.6% belonged to other religions (Table 1).

Table 1. Frequency and percentage distribution of demographic variables of the Mentally retarded children.

N = 60

Demographic Variables	Frequency (f)	Percentage (%)
Age in years		
6-8	10	33.3
8-10	9	30
10-12	11	36.6
Gender		
Male	20	66.6
Female	10	33.3
Family history of previous retardation		
Yes	3	10
No	27	90
Total number of children in the family		
1	13	43.3
2	12	40
3	5	16.6
Religion		
Hindu	16	53.3
Christian	8	26.6
Muslim	5	16.6
Others	1	1.6

The Assessment of Dressing Skills Among Mentally Retarded Children assessment of dressing skills among mentally retarded children indicated various levels of

independence. For eating, 6.6% demonstrated complete independence, 20% had modified independence, 23.3% required supervision, 30% needed minimal assistance, 10% required moderate assistance, 10% needed maximal assistance, and none required total assistance. Grooming skills showed that 13.3% had complete independence, 30% had modified independence, 30% needed supervision, 16.6% needed minimal assistance, 6.6% required moderate assistance, 3.3% needed maximal assistance, and none required total assistance. Bathing abilities were as follows: 10% complete independence, 16.6% modified independence, 33.3% supervision, 26.6% minimal assistance, 10% moderate assistance, 3.3% maximal assistance, and none required total assistance. For dressing the upper body, 6.6% had complete independence, 26.6% had modified independence, 36.6% needed supervision, 16.6% minimal assistance, 6.6% moderate assistance, 6.6% maximal assistance, and none required total assistance. Dressing the lower body skills indicated that 10% had complete independence, 33.3% had modified independence, 30% needed supervision, 20% minimal assistance, 3.3% moderate assistance, 3.3% maximal assistance, and none required total assistance.

Finally, in toileting, 6.6% had complete independence, 23.3% had modified independence, 33.3% needed supervision, 13.3% minimal assistance, 3.3% moderate assistance, 10% maximal assistance, and 10% required total assistance. Table 3 shows the mean and standard deviation of dressing skills among mentally retarded children The assessment of caregivers' knowledge and practice regarding post-stroke rehabilitation showed varying levels of competence across different activities. The eating skill scores ranged from 2 to 7, with a median of 6.5, a mean of 4.53, and a standard deviation (SD) of 1.38. Grooming skill scores ranged from 2 to 7, with a median of 5, a mean of 5.17, and a SD of 1.26. Bathing scores ranged from 2 to 7, with a median of 4.5, a mean of 4.8, and a SD of 1.28. Dressing the upper body scores also ranged from 2 to 7, with a median of 4.5, a mean of 4.6, and a SD of 1.27. Dressing the lower body scores had a range of 2 to 7, a median of 4.5, a mean of 5.17, and an SD of 1.18. Finally, toileting scores ranged from 1 to 7, with a median of 4, a mean of 4.47, and an SD of 1.76 (Table 2).

Table 2. The Mean and Standard Deviation of Dressing Skill among Mentally Retarded Children

	Minimum	**Maximum**	**Median**	**Mean**	**S.D**
Eating	2	7	6.5	4.53	1.38
Grooming	2	7	5	5.17	1.26
Bathing	2	7	4.5	4.8	1.28
Dressing - upper body	2	7	4.5	4.6	1.27
Dressing - lower body	2	7	4.5	5.17	1.18
Toileting	1	7	4	4.47	1.76

Since the p-value of 0.037 is less than 0.05, an alternate hypothesis is accepted. Hence, the results showed that there is a statistically highly significant difference in post-test mean scores between the experimental and control group of the WeeFIM scores. The results suggest that the experimental group intervention had more impact than the control group intervention.

Since the p-value of 0.0000 is less than 0.05, an alternate hypothesis is accepted. Hence, the results showed that there is a statistically highly significant difference in post-test mean scores between the Experimental and Control Group of the Upper body dressing and Lower body dressing performance.

Discussion

The results of this study align with and diverge from various findings in the existing body of research on mentally retarded children's daily living skills and caregivers' knowledge in post-stroke rehabilitation. The current study revealed a significant need for supervision and assistance in daily living activities, particularly in bathing, dressing, and toileting. It also highlighted a notable gender disparity, with more males (66.6%) in the sample, and a low prevalence (10%) of family history of mental retardation [11].

These findings identified a higher incidence of mental retardation diagnoses in males compared to females, suggesting a potential bias in diagnosis or reporting [12]. A low incidence of family history in mental retardation cases, reinforces the notion that environmental or developmental factors might be more influential than genetic ones [13]. Furthermore, the finding that mentally retarded children often require significant assistance with daily living skills, particularly in more complex activities such as dressing and toileting, which involve higher cognitive and motor functions. Other studies corroborate these findings [14]. For example, a study by Johnson et al reported varying levels of caregiver competence and emphasized the importance of standardized training programs to ensure consistent and effective care [15]. This aligns with the current study's findings of moderate to high levels of competence among caregivers, with notable variability in their abilities. They highlight the critical need for targeted education to enhance caregiver skills, particularly in activities with higher variability in competence, such as bathing and toileting [16].

Additionally, the findings on the demographic distribution and family history provide insights into the socio-cultural dimensions of mental retardation. The religious composition observed in the current study, with a predominance of Hindu children (53.3%), is reflective of the general population demographics of the region. This raises questions about the role of cultural and religious factors in the care and support of mentally retarded children [17]. A study by Gupta and Singh found that cultural beliefs and practices significantly influence the acceptance and care of mentally retarded children, with certain communities showing greater support and resources for these children [18]. In terms of intervention and support, the current study's findings on the need for supervision and assistance in daily living skills align with the recommendations of several other researchers. For instance, tailored interventions focusing on the most challenging activities, such as bathing, dressing, and toileting, enhance overall independence. They argue that targeted programs can significantly improve the quality of life for mentally retarded children by promoting greater self-sufficiency and reducing the burden on caregivers [19]. The current study also highlights the importance of comprehensive training programs for caregivers to ensure consistent and effective post-stroke rehabilitation [20]. This finding demonstrated that enhancing caregiver skills through targeted education significantly improves patient outcomes and reduces the burden on healthcare systems. They suggest that standardized training modules, focusing on specific activities where caregivers show the most variability, can lead to better recovery outcomes for stroke patients [21].

Overall, the comparative analysis with other studies underscores the need for targeted interventions and standardized training programs to address the specific challenges identified in the current study. Enhancing the skills of both mentally retarded children and their caregivers through tailored programs can foster greater independence and better recovery outcomes, aligning with the broader findings in the literature. Future research should continue to explore the long-term impact of such interventions and the role of cultural and

demographic factors in shaping care practices.

Conclusion

In conclusion, this research study has provided valuable insights into the effectiveness of the forward chaining technique in enhancing the dressing skills of mentally retarded children at Kiruba Nursing Home. Through a carefully designed intervention program and a comprehensive assessment process, we have gained a deeper understanding of the impact of this technique on the lives of these children. The findings of this study reveal promising outcomes. The implementation of the forward chaining technique resulted in significant improvements in the dressing skills of the participants. This is a promising sign, as the ability to dress independently is a fundamental aspect of daily living that directly contributes to a child's sense of self-esteem and overall quality of life.

Limitations

1. The limitations of the study include small members of samples (30) of moderate mentally retarded children.
2. The age group of the participants was confined to 6-12 years.
3. The participants were restricted to only MR children.

Conflict of Interest

Nil.

Acknowledgements

We thank Saveetha College of Nursing SIMATS for providing us with the support to conduct the study.

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