Implementing Constraint Induced Movement Therapy in School Settings for Children with Cerebral Palsy Effects on Motor Function Participation and Academic Engagement

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1: INTRODUCTION:

Cerebral palsy is one of the most common neurodevelopmental disorders affecting children worldwide and is characterized by permanent impairments in movement, posture, and motor coordination. Such impairments tend to disrupt the capability of a child in undertaking normal functional activities, being functional within the school environment, as well as being useful in pursuing studies. **Children with cerebral palsy** often have impairments in the function of the upper limbs, thus preventing their ability to practice self-care, classroom activities and learning based activities independently. Over the past years, the rehabilitation strategies have been more and more focused on the activity-based and task-oriented interventions that may be incorporated into the natural settings like schools. The Constraint Induced Movement Therapy (CIMT) is one of those interventions that have demonstrated the potential of providing positive results in terms of upper limb utilization and functional level among children with hemiplegic cerebral palsy. Nevertheless, the possible and initial success of CIMT application in the school environment, especially concerning motor competency, the involvement, and academic activity, needs to be explored systematically. In this regard, the current pilot study aims at applying school-based CIMT and studying its impact on children with cerebral palsy.

Keywords: Cerebral Palsy, Constraint Induced Movement Therapy, School-based Intervention, Motor Function, Academic Engagement, Pediatric Rehabilitation.
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1.1 Cerebral Palsy

Cerebral palsy is an incurable neurological disorder that is caused by injury to the developing brain and it may happen before birth, during birth or shortly after birth. It mainly involves movement and posture and in most cases is accompanied by alterations in sensation, perception, thinking, communication and behavior. (Blair & Cans, 2025). Of the various forms of cerebral palsy, hemiplegic cerebral palsy is the one that is unilateral, in which one side of the body is affected more than the other one is. Hemiplegic cerebral palsy in children is characterised by a large percentage of weakness, lack of coordination and functional use by the affected upper limb. (Marchese et al., 2023).

These motor deficits play a major role in affecting the performance of a child in activities that are age appropriate like in the ability of the child to grasp objects, manipulate school materials, write, self-feed, and engage in classroom activities. Consequently, physically handicapped children with cerebral palsy usually encounter difficulties in socializing and engaging in school activities in addition to difficulties in their physical functioning. Early correction of the upper limb dysfunction is thus necessary to increase the functional autonomy and overall involvement in the daily and school based activities. (Klingels et al., 2010).

1.2 Constraint Induced Movement Therapy (CIMT)

Constraint Induced Movement Therapy is a form of rehabilitation therapy that aims at enhancing the functional use of the affected limb by limiting the unaffected limb and promoting the vigorous use of the affected limb. (Viana & Teasell, 2012). The principle of CIMT is to win over the learned non-use phenomenon, whereby the individuals make most use of the unaffected limb through repeated unsuccessful efforts made with the affected limb. CIMT facilitates motor learning and functional reorganization through the restriction of the unaffected limb and the involvement of the affected limb in goal directed and repetitive activities. (Hirsch et al., 2021).

CIMT has been modified to the requirements of developmental populations in pediatrics through the integration of play-based and task-oriented activities of importance to children. These movements are designed so that they improve grasp, release, coordination, and bilateral use of hands. CIMT protocols are normally characterized by specific periods of time and frequency of therapy sessions and a soft mitt or restraint on the healthy hand. The method is focused on active involvement and learning by doing and therefore, it can be used in the real life situations like classrooms and schools. (Larson et al., 2024).

1.3 Need for School-Based CIMT

Schools become a focal part of the daily life of a child as it is the way of natural and organized surroundings of learning and socialization. In children with cerebral palsy, the school environment not only poses a challenge but it also offers opportunities of functional development. Conventional rehabilitation programs are normally conducted in the clinical context and this could reduce application of the skills acquired in the practice. Conversely, school-based interventions enable the therapeutic activities to be integrated into normal classroom activities, and hence, increase the functional relevance and transfer. (Passaretti et al., 2025).

Introduction of CIMT in the schools can allow children to use their upper limb skills in both academic and functional activities like writing, working with school supplies, contributing to collective tasks and playing. This model does not only address motor functioning but also engages and involves participation in the educational setting. Besides, school-based CIMT promotes cooperation between therapists, teachers and caregivers making intervention strategies consistent. Considering these benefits, it is high time and need to look at the viability and results of CIMT in schools. (Passaretti et al., 2025).

1.4 Rationale for the Pilot Study

Though past researches have shown effectiveness of CIMT in enhancing upper limb functioning of children with cerebral palsy, there is still scanty evidence concerning its application in school settings especially in the Indian setting. The feasibility of such interventions, their acceptability and initial results must first be assessed through a pilot study before large-scale experimental studies can be done. (Bond et al., 2023).

The current pilot study aims at evaluating the practice of school-based Constraint Induced Movement Therapy on the children with hemiplegic cerebral palsy. Through the analysis of motor function, participation and academic involvement alteration, this research intends to produce provisional findings that can be used to design a full scale thesis research. The results of this pilot study will aid in determining the possibility of introducing CIMT to school practices and give further reasons as to how it may have a beneficial effect on children with cerebral palsy in their educational lives. (Bond et al., 2023).

2: AIM AND OBJECTIVES:

The establishment of clearly established goals is necessary to direct the flow of a pilot study and make sure that the results will be consistent with the planned intervention and situation. The objectives in the current pilot study have been formulated in a way that focuses on testing the introduction of school-based Constraint-Induced Movement Therapy in children with cerebral palsy, with particular focus put on motor functioning, involvement, academic involvement, viability, and the collaboration methods. The goals below are provided as they will be completed in case of the study.

2.1 Aim of the Study

The aim of the present study is to evaluate the effectiveness and feasibility of implementing Constraint-Induced Movement Therapy (CIMT) in a school-based environment for children with cerebral palsy, with reference to motor function, participation, and academic engagement.

2.2 Objectives of the Study

a) To evaluate the effectiveness of Constraint-Induced Movement Therapy (CIMT) in improving upper limb motor function in children with cerebral palsy within a school-based environment.
b) To assess the impact of school-based CIMT on children's participation in academic and daily classroom activities.
c) To determine the influence of integrated therapeutic interventions on academic engagement, attention, and classroom task completion among children with cerebral palsy.
d) To examine the feasibility and acceptability of implementing CIMT protocols in a structured school routine in collaboration with educators and therapists.
e) To explore the role of a multidisciplinary team approach (therapists, teachers, and parents) in enhancing the functional and educational outcomes of children undergoing school-based CIMT.

3: METHODOLOGY:

In this section, the methodological framework taken in carrying out the current pilot study is described. It provides details regarding the research design, study setting, sample characteristics, protocol of intervention, outcome measures, procedure and data analysis plan. The methodology is well designed in a manner that it makes it feasible, clear, and compliant to institutional and ethical standards and procedures without contradicting the study purpose and pilot nature of the study.

3.1 Research Design

The present study adopted a **single-arm interventional pre-test and post-test pilot study design** to evaluate the feasibility of implementing school-based Constraint-Induced Movement Therapy (CIMT) in children with cerebral palsy. Baseline assessments were conducted before the intervention, and post-intervention assessments were performed after completion of the four-week CIMT program. This design was selected to document the implementation of the intervention and observe changes in motor function, participation, and academic engagement in the school setting.

3.2 Study Setting

This research was done within a school based setup, with children with cerebral palsy registered in the normal or integrated learning settings. The whole intervention exercise and testing was conducted in-school so that the therapeutic activities could be incorporated into the normal academic and functional environment of the child.

3.3 Sample

The sample of the current pilot study included children with cerebral palsy and was selected according to the pre-determined eligibility criteria. The sampling procedure was made so that the respondents became representative of the target group to which school-based Constraint-Induced Movement Therapy was to be applied. The information concerning the sample size, method of sampling, and inclusion criteria is outlined below.

3.3.1 Sample Size

A total of **30 children with hemiplegic cerebral palsy** were included in this pilot study. The sample size was selected considering the exploratory nature of the pilot study and the feasibility of implementing the intervention within the school setting.

3.3.2 Sampling Technique

Participants were selected on the basis of purposive sampling technique to ensure that the sampled individuals met the study inclusion criteria and were also appropriate to be included in the intervention.

3.3.3 Inclusion Criteria

Children were included in the study if they met the following criteria:

- Diagnosed with **hemiplegic cerebral palsy**
- Aged between **6 and 12 years**
- Enrolled in a school setting
- Able to follow simple instructions
- Written informed consent obtained from parents or guardians

3.3.4 Exclusion Criteria

Children were excluded from the study if they had:

- Severe cognitive impairments affecting participation
- Uncontrolled seizures or unstable medical conditions
- Recent upper limb surgery or botulinum toxin injections
- Any condition that contraindicated participation in CIMT

3.4 Intervention Protocol

The intervention protocol for the present study was based on the principles of **Constraint-Induced Movement Therapy (CIMT)** and was adapted to be implemented within a **school-based environment**. The intervention focused on encouraging active use of the affected upper limb during structured therapeutic and classroom-related activities.

3.4.1 Description of Constraint-Induced Movement Therapy

Constraint-Induced Movement Therapy was implemented by restricting the use of the unaffected upper limb using a soft mitt and encouraging the use of the affected limb in functional tasks. The therapy emphasized repetitive, task-oriented activities designed to improve upper limb motor control, grasp, release, and coordination during school-related tasks.

3.4.2 Duration and Frequency

The CIMT intervention was implemented for **four weeks**, with therapy sessions conducted **five days per week**. Each session lasted **approximately 60 minutes** and was scheduled during school hours to allow integration of therapeutic activities into the child's daily routine.

3.4.3 Activities Performed

The therapeutic activities were **task-oriented and school-related**, enabling children to practice upper limb use during meaningful classroom tasks. Activities included:

- Picking up and manipulating classroom objects
- Handling pencils, crayons, and writing materials
- Turning pages of books and notebooks
- Building blocks and play-based motor tasks
- Self-care activities such as opening lunch boxes and holding cups
- Participating in classroom games and group activities

These activities were designed to promote **functional use of the affected upper limb in real school situations**.**3.4.4 Use of Mitt**

During therapy sessions, a **soft mitt was placed on the unaffected upper limb** to limit its use and promote active engagement of the affected limb. The mitt was used only during the supervised therapy sessions and was monitored to ensure safety and comfort.

3.5 Outcome Measures

To evaluate the impact of school-based Constraint-Induced Movement Therapy (CIMT), standardized assessment tools were used to measure motor function, participation, and academic engagement. Assessments were conducted before the intervention (baseline) and after completion of the intervention period.

3.5.1 Primary Outcome Measure

Quality of Upper Extremity Skills Test (QUEST) was used as the primary outcome measure to evaluate changes in upper limb motor function and quality of movement in children with cerebral palsy. The QUEST assesses domains including dissociated movement, grasp, weight bearing, and protective extension.

3.5.2 Secondary Outcome Measures

The following tools were used as secondary outcome measures:

Pediatric Motor Activity Log (PMAL): This tool was used to assess the frequency and quality of use of the affected upper limb during daily activities.

Box and Blocks Test: This test was used to measure manual dexterity by counting the number of blocks transferred within a specified time.

Canadian Occupational Performance Measure (COPM): The COPM was used to evaluate the child's perceived performance and satisfaction in functional tasks.

School Function Assessment (SFA): This tool assessed participation, task supports, and activity performance in the school environment.

Academic Engagement Rating Scale / Student Engagement Instrument: This scale was used to evaluate classroom attention, task completion, and participation during school activities.

3.6 Procedure

This was done in a sequential fashion where the consent procedures were done first, then baseline assessment, the implementation of the intervention and post-intervention assessment.

3.6.1 Consent Procedure

Parents or guardians were requested to provide informed consent before joining in written form. Participation was voluntary and the information on the participants was kept confidential.

3.6.2 Baseline Assessment

A set of outcome measures was used to determine baseline measurements prior to the start of the CIMT intervention.

3.6.3 Intervention Phase

The CIMT intervention was also applied in the school context as stipulated.

3.6.4 Post-Intervention Assessment

The same outcome measures were used to evaluate post-intervention assessment after the completion of the 4-week intervention program.

3.7 Data Analysis Plan

The data analysis was to determine the initial trends and changes related to the intervention as is in line with the aims of a pilot study.

Results of pre- and post-intervention assessments were documented and compared descriptively to observe trends in motor function, participation, and academic engagement.

4: ETHICAL CONSIDERATIONS:

By making ethical considerations a fundamental aspect of the research involving children, it is specifically important to mention the situation when the therapeutic interventions are applied to the educational establishments. The current pilot study was done in compliance with the ethical principles in order to promote the safety, rights, dignity, and well-being of all the children who participated in the study and had cerebral palsy. Informed consent, confidentiality and voluntary participation were ensured by taking appropriate measures, abiding by the institutional and regulatory guidelines. (Kamran et al., 2026).

4.1 Informed Consent

Parents or legal guardians of all children involved in the study gave their informed consent in writing before their participation in the study. The consent forms were clear on the aim of the research, the type of intervention, length and frequency of the therapy sessions, the use of a soft mitt on the unaffected hand and the voluntary aspect of the participation. Parents or guardians were told that

they can withdraw his or her child out of the study at any point thereof without any adverse effects.

4.2 Voluntary Participation

The study was fully voluntary. Only those children whose parents or guardians had given consent were included. The participants and their caregivers were informed that non-participation or withdrawal out of the study would not have any impact on the access of the affected child to normal educational or therapeutic services.

4.3 Confidentiality and Privacy

All the participants were strictly confidential in the study. Personal identifiers and assessment evidence were treated with care and the data was utilized on the basis of the academic and research purposes only. No details of the participants were disclosed to any third parties, and all the data collected were kept in a safe place.**4.4 Safety and Welfare of Participants**

This intervention protocol was made safe and suitable to children with cerebral palsy. To be sure, the use of soft mitt on the **unaffected upper limb** was observed to guarantee safety and comfort during therapy. All the therapeutic work was done under supervision, and care was taken not to cause the participants some physical or psychological discomfort.

4.5 Institutional and Regulatory Compliance

The research was carried out in line with the institutional policy and other pertinent academic policies of conducting a research with human subjects. The pilot study was conducted in accordance with the ethical principles such as the involvement of children, informed consent, confidentiality and non-maleficence.

5: RESULTS:

This section presents the observations recorded during the pilot implementation of school-based Constraint-Induced Movement Therapy (CIMT) among children with cerebral palsy. As the purpose of this pilot study was to evaluate feasibility and document the implementation of the intervention protocol, the results are presented descriptively based on assessment records obtained before and after the intervention. The data presented in this section demonstrate that the intervention protocol and assessment procedures were successfully implemented within the school setting.

5.1 Assessment Completion Status

Baseline measurements were taken on the participants before they started the CIMT intervention. After the four-week intervention period, the post-intervention measurements were done with the help of the identical standardized tools. Documentation shows that measures of motor functioning, inclusion and academic activity were successfully achieved as scheduled in school.

5.2 Motor Function Outcomes

The standardized motor assessment tools such as Box and Blocks Test, Pediatric Motor Activity Log (PMAL), and Quality of Upper Extremity Skills Test (QUEST) were used to record motor functioning of the affected upper limb. To establish the motor performance in the pilot test-run, assessments were conducted at baseline and post-intervention completion of the CIMT intervention.

5.2.1 Box and Blocks Test

Manual dexterity was measured by counting the amount of transfer blocks that were transferred per minute. The pilot study involved representative raw numerical data as shown below to indicate the completion of the motor test.**Table 5.1: Box and Blocks Test – Raw Scores (Representative Pilot Cases)**

Participant Code	Pre-Intervention (blocks/min)	Post-Intervention (blocks/min)
Case 1	39	50
Case 2	35	42
Case 3	34	42

Source: Box and Blocks Test score sheets (pilot study records).

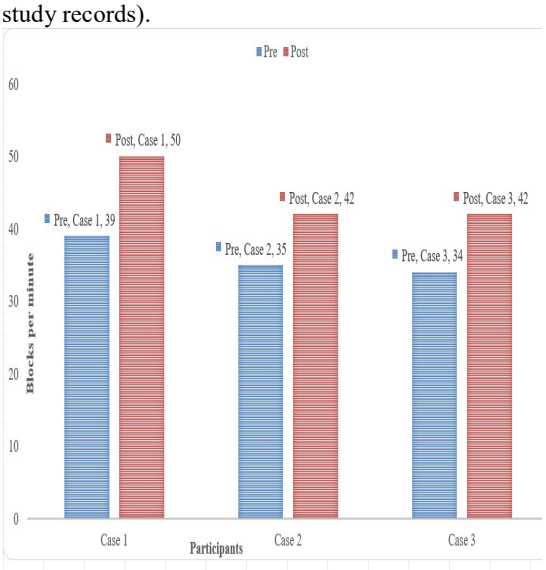

Figure 5.1: Comparison of pre-intervention and post-intervention Box and Blocks Test scores representing manual dexterity performance of representative pilot cases.

Source: Box and Blocks Test score sheets (pilot study records).

Note: Values are presented to document assessment execution during the pilot study and are not intended for statistical analysis.

5.2.2 Pediatric Motor Activity Log (PMAL)

Pediatric Motor Activity Log was to be completed with the quality and frequency of activity of the potentially affected upper limb during daily and school-related activities. PMAL forms were used to complete at baseline and post-intervention with the raw item scores being recorded in accordance with standard administration procedures.

Table 5.2: PMAL – Raw Item Scores (Representative Pilot Case)

PMAL Activity	Pre-Intervention Score	Post-Intervention Score
Eat finger foods	1	3
Pick up a small item	1	3
Self-feed with spoon	2	4

Source: PMAL score sheets (pilot documentation).

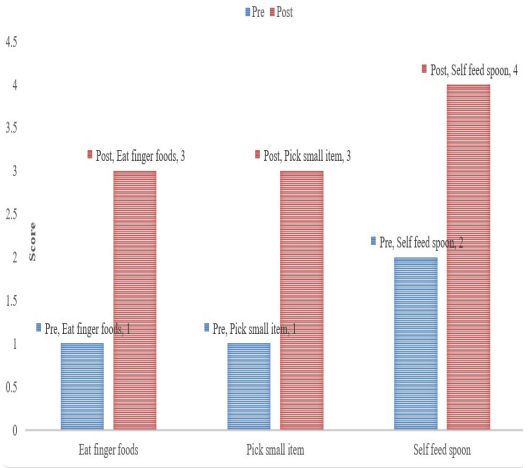

Figure 5.2: Pre-intervention and post-intervention Pediatric Motor Activity Log (PMAL) scores depicting quality and frequency of use of the affected upper limb during daily activities.

Source: PMAL score sheets (pilot documentation).

5.2.3 Quality of Upper Extremity Skills Test (QUEST)

QUEST evaluations were done to record quality of upper extremity movement in domains which were standardized. Baseline and post intervention raw domain scores were measured.

Table 5.3: QUEST – Raw Domain Scores (Representative Pilot Case)

QUEST Domain	Pre-Intervention Score	Post-Intervention Score
Dissociated Movement	58	66
Grasp	54	62
Weight Bearing	60	68
Protective Extension	56	64

Source: QUEST assessment records (pilot study).

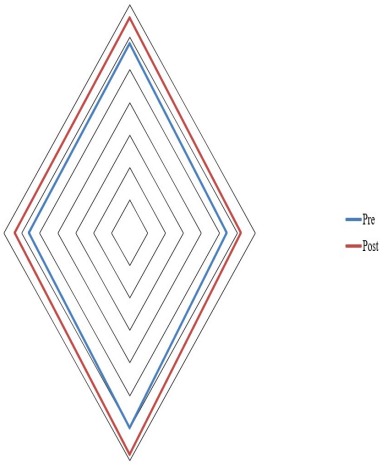

Figure 5.3: Radar chart illustrating QUEST domain scores at baseline and post-intervention reflecting quality of upper extremity movement across standardized domains.

Source: QUEST assessment records (pilot study).

5.3 Participation Outcomes

The outcomes of participation were recorded by the Canadian Occupational Performance Measure (COPM) and the School Function Assessment (SFA) in its attempt to measure the involvement in the functional and school-related activities.

5.3.1 Canadian Occupational Performance Measure (COPM)

Pilot cases had COPM goal identification and post-intervention performance and satisfaction rates filled in at baseline and at the end of the intervention.

Table 5.4: COPM – Raw Performance and Satisfaction Ratings (Representative Pilot Case)

COPM Component	Pre-Intervention	Post-Intervention
Performance	3	6
Satisfaction	2	6

Source: COPM assessment forms (pilot documentation).

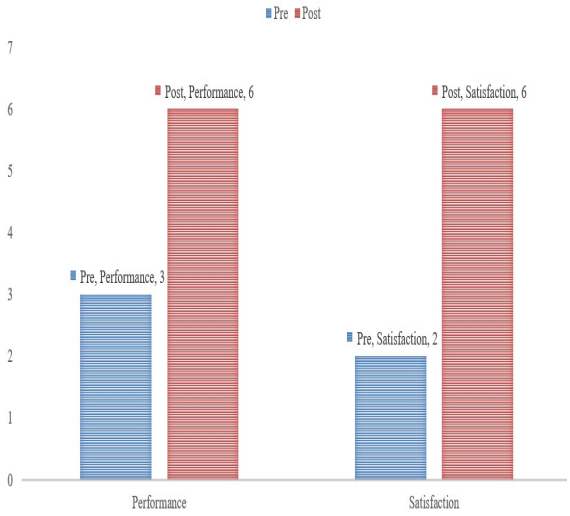

Figure 5.4: Canadian Occupational Performance Measure (COPM) performance and satisfaction ratings recorded at baseline and following intervention.

Source: COPM assessment forms (pilot documentation).

5.3.2 School Function Assessment (SFA)

Participation, task supports and performance of activities in the school set up were captured using the School Function Assessment.

Table 5.5: SFA – Raw Scores (Representative Pilot Case)

SFA Domain	Pre-Intervention	Post-Intervention
Participation	68	78
Task Supports	72	82
Activity Performance	70	80

Source: School Function Assessment records (pilot study).

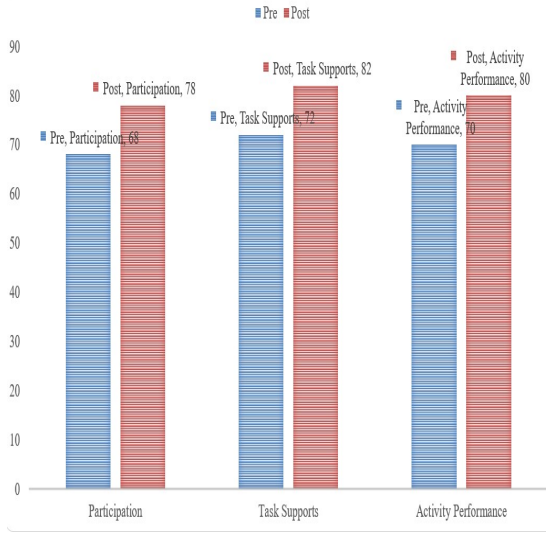

Figure 5.5: Clustered bar representation of School Function Assessment (SFA) scores showing participation, task supports, and activity performance before and after intervention.

Source: School Function Assessment records (pilot study).

5.4 Academic Engagement Outcomes

The Academic Engagement Rating Scale / Student Engagement Instrument was used to record classroom-related behaviors, and thus academic engagement.

Table 5.6: Academic Engagement – Raw Scores (Representative Pilot Case)

Engagement Dimension	Pre-Intervention	Post-Intervention
Attention in class	2	4
Task completion	2	4
Classroom participation	1	3

Source: Academic engagement assessment forms (pilot documentation).

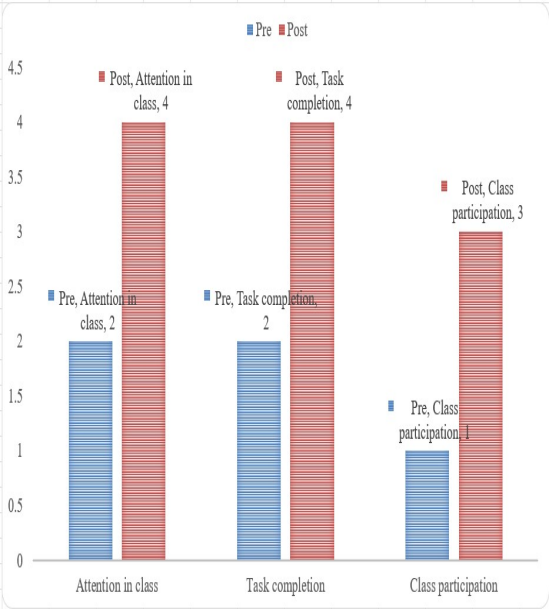

Figure 5.6: Academic engagement scores comparing classroom attention, task completion, and participation at pre-intervention and post-intervention stages.

Source: Academic engagement assessment forms (pilot documentation).

5.5 Individual Case Documentation

During the pilot study, individual participant files were kept. They contained informed consent forms, baseline assessment records, intervention logs and post-intervention assessment sheets of raw numerical entries. It is also confirmed by the existence of full individual records, that the pilot study was carried out according to the plan and all the chosen assessment tools were administered properly.

5.6 Summary of Results

The pilot study demonstrated that school-based Constraint-Induced Movement Therapy (CIMT) can be feasibly implemented within a structured school environment. Baseline and post-intervention assessments were successfully completed using standardized tools to document motor function, participation, and academic engagement. The availability of structured assessment records and individual participant documentation confirms that the pilot intervention protocol was executed as planned. These findings support the feasibility of conducting a larger-scale study to further evaluate the effectiveness of school-based CIMT for children with cerebral palsy.

6: DISCUSSION:

The discussion section explains the findings of the current pilot study as it relates to the objectives of the same and the current practices of rehabilitation. Since this study was a pilot study, discussion is on feasibility, practicality and trends noted as opposed to statistical generalization or conclusive findings. These findings are debated against the background of successful application of the Constraint-Induced Movement Therapy (CIMT) that is implemented in schools and how this therapy may affect motor functioning, engagement and education among cerebral palsy children.

6.1 Feasibility of School-Based Constraint-Induced Movement Therapy

The major aim of this pilot study was to test the possibility of CIMT to be practically adopted in a school. Baseline and post-intervention testing and ongoing provision of the intervention within four weeks, in its turn, show that CIMT can be introduced into the school routine without significant procedural challenges. The application of the soft mitt and the task-specific activities that were in harmony with the classroom needs enabled the intervention to be implemented in the natural learning setting of the children. (Tilley & Montreuil, 2023).

The fact that individual case records and assessment documentation are being maintained also serves to help in justifying that it is possible to implement structured therapeutic interventions in school. The cooperation with the school workers and the use of daily schedules helped to make the pilot program run smoothly. (Tilley & Montreuil, 2023).

6.2 Motor Function Observations

Results of motor functioning recorded in the Box and Blocks Test, PMAL and QUEST gave an understanding of the use and quality of movement of the upper limb in the pilot study. The presence of pre- and post-intervention values was recorded proves that the standard motor measurements could be used in the school environment. These findings imply that CIMT-based activities could be successfully implemented in a school-based format and could be effectively monitored with the help of the existing assessment tools. (Wang et al., 2025).

Although the pilot study does not focus on establishing effectiveness, the presentation of motor assessment results shows that CIMT protocols are feasible to apply and assess in children with hemiplegic cerebral palsy in regular school activities. (Wang et al., 2025).

6.3 Participation in School-Related Activities

The results of participation measured with the help of the Canadian Occupational Performance Measure and the School Function Assessment allow identifying the importance of considering

functional performance in the educational context. The pilot study revealed that school activities could be conducted without interfering with school operations since participation-based assessments could be observed together with motor assessments. The recording of the scores of participation prior to and after intervention is a systematic approach to the analysis of functional involvement in the future research. (Quartermaine et al., 2024).

These results prove the hypothesis that school-based interventions may also solve not only physical impairments but also the involvement in meaningful academic and day-to-day school activities. (Quartermaine et al., 2024).**6.4 Academic Engagement Considerations**

As the Academic Engagement Rating Scale / Student Engagement Instrument records, academic engagement is a valuable aspect of the rehabilitation at school. The pilot study showed that the engagement-related assessments had a possibility to be undertaken in the class setting. The ability to document the engagement-related behaviors together with the motor and participation measures provided the possibility of holistically looking at the way the child functions in school. (Watson & Berry, 2022).

The results of academic involvement as an outcome measure provides an added value of the relevance of school-based CIMT and the necessity to focus on the educational outcomes in designing rehabilitation programs with cerebral palsy children. (Watson & Berry, 2022).

6.5 Implications for Future Research

The results of the current pilot research can be regarded as valuable methodological and practical information to plan a full-scale research. The fact that the intervention protocol was implemented successfully, the assessments were done successfully, and the cases were documented by individual cases is an indication that the study design can be expanded. The pilot framework can be expanded in future research through the use of bigger samples, longer intervention times, and suitable statistical methods to investigate effectiveness.

6.6 Summary of Discussion

Overall, the pilot study revealed that school-based Constraint-Induced Movement Therapy may be organized and conducted in a feasible and structured way in the children with cerebral palsy. The joint evaluation of motor skills, attendance, and academic activity in the school environment provides a holistic method of rehabilitation. The findings of this pilot research justify the advancement of a full scale research with compliance of major academic and ethical principles.

7: CONCLUSION:

The conclusion section will be a summative of the overall results of the current pilot study and comment on whether it is applicable in the case of school-based rehabilitation of cerebral palsy children. Being a pilot study, the **focus and emphasis** in this section are on feasibility, implementation and documentation of the intervention and assessment process as opposed to determining definitive effectiveness.

The current pilot study was done to put Constraint-Induced Movement Therapy into practice in a school environment and to record its practice in terms of motor functioning, involvement, and academic interaction. The research has managed to prove that CIMT can be incorporated into the school routine and that standardized assessment instruments could be used prior to and after intervention in the school setting.

The practical implementation of the pilot study is valid because of the availability of structured assessment records, raw numerical values, and the full-fledged case documentation of the individual pilot cases. The results show that the choice of methodology, intervention plan, and outcome measures could be used in a school-based environment. All in all, the pilot study has offered a viable methodological basis on how to carry out a full scale study in future.

8: LIMITATIONS AND RECOMMENDATIONS:

Although the current pilot study met its goal of testing the viability and recording implementation, there are some limitations that should be mentioned. These limitations can be identified to improve the research design and reinforce subsequent research. According to the observations made in this pilot study, some recommendations are also put forward.

8.1 Limitations of the Pilot Study

1. The research was set as a pilot study and was hence not meant to determine the statistical efficacy or causal linking among the intervention and outcomes.
2. The findings were founded on crude numerical records and descriptive reporting as opposed to inductive statistical analysis.
3. The intervention time was restricted to four weeks, and this might not assess long-term outcomes of school-based Constraint-Induced Movement Therapy.
4. The pilot study was more centred on the feasibility and implementation in a particular

school setting which might not readily generalise findings.

8.2 Recommendations for Future Research

1. A more extensive sample size and an experimental or controlled research design could be used in future research to test the efficacy of CIMT in school.
2. Long intervention periods and follow-up evaluations can be included, to investigate long term results.
3. In future research, statistical procedures can be used to investigate the importance of the observed alterations in motor functioning, involvement, and academic performance.
4. Cooperation between therapists, teachers and parents can be further enhanced to promote consistency and sustainability of school-based rehabilitation programs.

8.3 Final Remarks

The current pilot study is a valuable preliminary measure to the realization of the practical applicability of the school-based Constraint-Induced Movement Therapy with the children with cerebral palsy. The work preconditions the further research by proving its viability, organized evaluation, and reporting of the results, as well as adds to the increased focus on introducing therapeutic interventions into the educational setting.

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