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The Indian Journal of Occupational Therapy

Editorial Statement

- ✓ **The Indian Journal of Occupational Therapy (IJOT) shall be published quarterly (four times a year), as Issue 1: (January-March), Issue 2: (April-June), Issue 3: (July-September) and Issue 4: (October-December): effective from January, 2017.**
- ✓ The IJOT Issues for the year 2016 will continue as: Issue 1: (January-April), Issue 2: (May-August) and Issue 3: (September-December). The latest (Version: April, 2016) '**Guidelines to Authors for Submission**' will be available in Issue 2: (May-August), 2016 of IJOT as well as on the website <http://www.aiota.org/ijot>, for the year 2016.
- ✓ **Please Note: From January, 2017 onwards the 'Guidelines to Authors for Submission' will be available only on the website : <http://www.aiota.org/ijot>, for download.**
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- ✓ The Journal's editorial board welcomes submissions of original scientific research papers, editorials, reviews, case reports, preliminary articles and conference abstracts, on all aspects of Occupational Therapy. IJOT also includes publications of book reviews & letters to the editor.
- ✓ IJOT editorial board welcomes contributions/announcements on news, academic events and information related to Occupational Therapy and rehabilitative aspects from all over the world.
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Editorial.....

OTICON'2017 has become very special due to valuable presence of Dr. Kit Sinclair, an internationally acclaimed person in the profession of occupational therapy. She is past President of WFOT and now WFOT Ambassador & Editor WFOT Bulletin. I am grateful to Kit for accepting the request for her participation and valued contribution in 54th Annual National Conference of AIOTA at Jaipur from Feb. 17-19, 2017. She will be delivering the Key Note Address and conduct COTE Workshop on Disaster Management. It would be a rare opportunity for delegates and students to interact and exchange views with her during the conference. Members, institutions and students are requested to participate in good no. and make this conference an exemplary event. The organizing committee is striving hard to provide a gala platform for holding this national event of AIOTA in a grand way at Jaipur.

Congratulations and best wishes to members on World OT Day 2016. World OTDAY on Oct.27 and OTINDIA Month from Oct.27 to Nov.26, 2016 was enthusiastically celebrated with the theme 'ACEESIBILITY@OTIndia' by AIOTA Branches and Institutions. The celebration report is published in the News Letter and will also be uploaded on aiota website.

I am pleased to announce that OT's graduated from R.M.M.C. Medical College (Annamalai University), Chidambaram and J.K.K.M.M.R.F., Ethirmedi, Komarapalayam (T. N. Dr. M.G.R. University, Chennai) are now authorized to become members of AIOTA and WFOT. After a long persistent pursuance for more than 3 years AIOTA ultimately succeeded to get the programs retrospectively approved from WFOT. I welcome the OTs from these institutions graduated before 2008 as regular life members of AIOTA.

Hon'ble CM of Bihar State Sri Nitish Kumar assured that the therapists will be employed soon at PHC level and the retirement age will also be extended to 67 years to bring the therapists at par with medical doctors. He further announced that occupational therapists and physiotherapists will be treated at par with medical, dental and Ayush doctors in Bihar as they are indispensable part of health services. While addressing at Bihar College of OT/PT, Patna at a function organized there, he also announced for setting up of State Council for monitoring the therapy services. I congratulate OT's of Bihar State and wish that they all will work together with more zeal and enthusiasm for an early implementation of these significant announcements made by the Hon'ble Chief Minister.

National trust for Welfare of Children of Department of Empowerment of PWD's under Ministry of Social Justice & Empowerment, Govt. of India has accepted AIOTA's request and decided to include one post of OT, in the few key projects of the National Trust namely DISHA, SAMARTH, VIKAAS and GHARAUNDA developed for welfare of children and adults with special needs. Ministry of Health and Family Welfare, Government of India has also accepted AIOTA's request and recommended to Ministry of Social Justice & Empowerment that OT's may be included as a part of the proposed Autism Medical Certification Board, because they are an integral part of any pediatric assessment and developmental disorder treatment. I sincerely acknowledge the dedicated efforts of members of Delhi Branch of AIOTA.

Government of Kerala is working to draw up a uniform design for the District Early Intervention Centres in districts of Kerala. These centres are aimed to provide facilities for antenatal screening for disabilities, special education, occupational therapy & sensory integration therapy, speech therapy, physiotherapy and play therapy etc. for the disabled children besides counselling and guidance for the parents. It will create ample opportunities for occupational therapists in the state.

I am optimistic of more such multifaceted growth of the profession in the health sector with valued cooperation of AIOTA Branches and the members.

The Indian Journal of Occupational Therapy (IJOT) shall now be published quarterly (four times a year), from January, 2017 in place of three issues in a year. Printing protocol, Guidelines to Authors and rates for subscription is also revised. The enthusiastic editorial team is working hard to further improvise the journal and its listing in many more national and international databases of repute.

I congratulate the authors whose studies are published in this issue. The issue carries 4 research studies, news & information of significance and also the review report of the book on Independent Living Following Stroke by the author Kate Rayon, who herself is a stroke survivor.



Dr. Anil K. Srivastava
Editor-in-Chief

Helping Parents Become their Child's Therapist: An Outcome Based Study

Vrushali S. Kulkarni¹, Sonam P. Shah², Anjali S. Joshi³, Madhura M. Gharpure⁴

Abstract

Introduction: Researchers working in the field of Paediatric Occupational Therapy have often reported how parent participation positively impacts compliance for home program, and therefore the therapy outcome in children with developmental disabilities.

Objective: This study was carried out with parents of children who participated in the 'Happy Hands Club', at Ummeed Child Development Center. The objective was to understand parent's perception of their role as active partners in developing strategies for their child's challenges in the area of fine motor skills.

Methodology: The parents of three children participating in the 'Happy Hands Club' were trained over a period of 16 group sessions. The focus was to help them identify their child's strengths, challenges and to plan activities at home. This was achieved in three parts: introducing the concept of task analysis, helping them plan and implement an activity for their child in the sessions, and scaffolding and problem-solving during the process. At the end of the group intervention program, the outcomes were assessed using a semi-structured parent interview. The interview was analysed using thematic data analysis to explore related themes.

Conclusion: The parents reported that being an active partner improved their competence in planning activities for their child. They felt that they are now in a better position to recognize their child's skill level and use play-based approaches to address their challenges. All the parents were in agreement that more opportunities of this nature would be beneficial.

Key Words: Active Partners, Family Centered Care, Parent competence, Parent Participation

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Trophy.*

Introduction

Occupational Therapists working with children are increasingly embracing the Family-Centered Care (FCC) approach to nurture a collaborative partnership with the parents¹. Parents and therapists participate in equal decision-making related to assessment, goal-setting, intervention planning and designing a home programme^{1, 2, 3, 4, 5}.

FCC is guided by the families' concerns, priorities and desires^{6, 7}. It involves building collaborative partnerships with parents based on the beliefs that family is the constant in the child's life; each family has strengths, individuality and unique methods of coping and each family is unique and is shaped by the racial, socio-economic and cultural values^{3, 6, 7, 8}.

FCC has two components - a 'relational' component where the therapist, uses active listening to develop a non-judgmental, empathetic relationship with the families and a 'participatory' component which promotes the partnership with families by sharing information, respecting their knowledge and skills and providing training opportunities⁹. A combination of both components contributes to family empowerment by promoting a sense of control in individuals and developing partnerships with service providers¹⁰.

Incorporating the 'participatory' component is strongly associated with empowerment, parent well-being and family quality of life^{6, 8, 9}. Involving parents in the therapeutic sessions through problem-solving and reflective questions helps them understand their child's functional level, strengths and difficulties thus empowering them in their role as a parent^{4, 11}.

Application of FCC in context of a therapeutic group is not widely studied as compared to individual therapeutic sessions and early intervention services^{1, 4, 12}. Literature within the Indian context suggests an on-going shift from client-centered to family-centered approach of acknowledging parental expectations and sharing information and not necessarily providing training opportunities¹³.

This study attempts to understand parental perspectives of participating in a group intervention program for their children focused on fine motor (FM) skills structured using both the 'relational' and 'participatory' component of the FCC approach.

Methodology

'Happy Hands Club' (HHC) is a therapeutic group conducted at the authors' work place, for children with developmental disabilities between three and a half to six and a half years of age having FM

Table 1. Happy Hands Club Structure Outline

No. of sessions/ week	Two
Total no. of sessions	Sixteen
Duration of each session	One and a half hours

difficulties. It is a structured program of 8 weeks conducted by two Occupational Therapists (OTs) (Refer **Table 1**) using the 'relational' and 'participatory' components of the FCC. This study employs a qualitative methodology with a phenomenological approach¹⁴ to understand the views of the participating parents in one such group conducted by the first author and an OT colleague.

Participants

Four children with varying diagnoses were enrolled in the 15th 'Happy Hands Club' on referral by the Developmental Pediatrician for FM difficulties. One out of the four children discontinued participation after the sixth session due to time clashes with school. Three children and their parents participated for all 16 sessions. All three parents were invited to participate in a semi-structured interview to understand their views of involvement in such a group at the end of the program. One of the three could not make it for the interview due to the child being unwell.

Intervention Characteristics

Before commencement, all parents were oriented to the group design. For the first six sessions, end of session debriefs focused on analysing the activities using an open-ended questionnaire developed by first and third author (Refer **Appendix Table 2**). During the next four sessions, parents implemented activities planned by the therapists. For the next four sessions they were given opportunities to select an activity to meet the session goal.

In the 15th session, parents planned activities for the graduation day and during the last session, conducted a felicitation party for their children who were graduating from the 'HHC'. (Refer **Figure 1**)

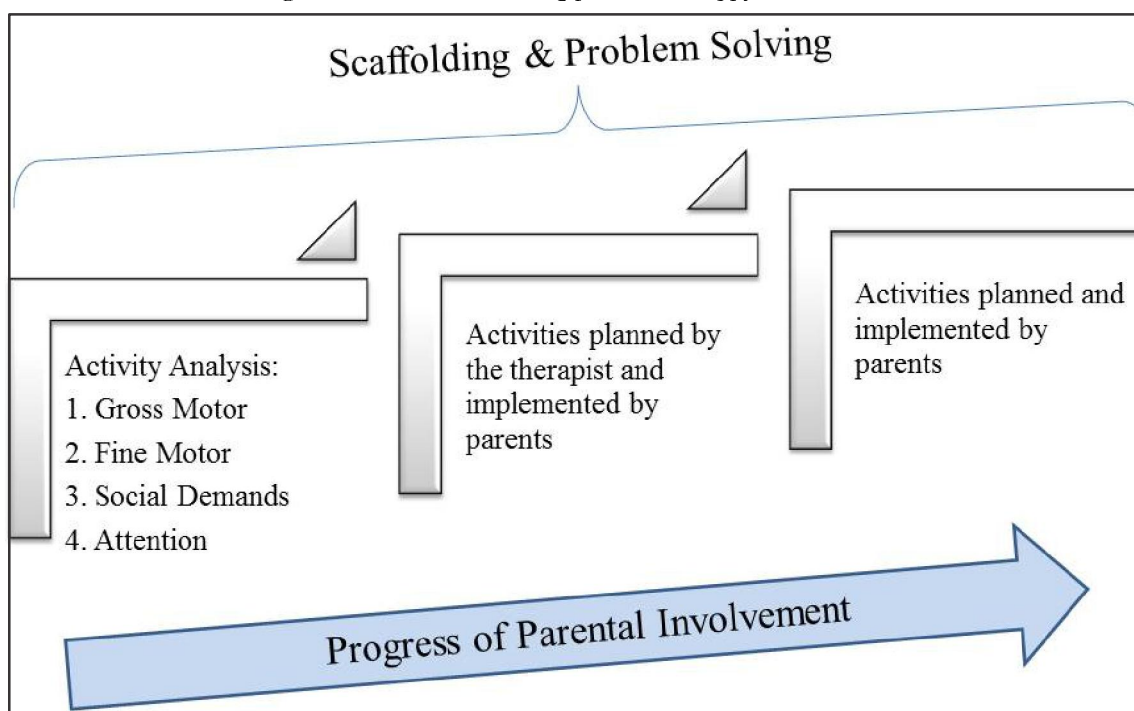
The role of both therapists was to provide opportunities to parents for working with their children. Approximately 15-30 minutes per session were spent to facilitate and scaffold exchange of ideas, reflect and problem-solve challenges with the parents. For example, if a child was distracted during an activity, the therapist reflected 'I wonder what is contributing to this inattention?'; 'What are some of the things you do to bring his attention back, at home?'; 'How can we modify the activity to help him attend?'.

Data Collection and Analysis

The second author and an OT colleague (experienced in running same group but not conducting the present one) conducted the semi-structured interview, consisting of eight open-ended questions (Refer **Appendix Table 3**). Informed, signed consents were taken from each parent for permission for participation in and recording the interview. The interview was conducted in Marathi, the primary language of the participants primarily.

The fourth author transcribed the recording verbatim to Marathi first, and then translated to English. The first author was then involved in the process of back translating the data to ensure that the meaning is retained.

Thematic analysis was employed to analyse the data using an inductive approach to explore patterns and formulate themes¹⁵. The first and the second author individually coded the data to identify key words or phrases. Both authors consulted to summarize the codes.

Figure 1. Process of involving parents in 'Happy Hands Club'

Results

Four over-arching and inter-related themes describing their views of participating in the 'HHC' emerged. The first theme, 'I can do it: sense of competence' sketches what empowerment means for the participating parents. The second theme, 'Thinking like a therapist' describes the skills they observed and embodied while working with their children. The third theme, 'Ripple effect: whole family follows' describes how the changed approach of working with their child is embraced by the whole family. The fourth theme, 'Finding my Voice' portrays the parents' feedbacks and suggestions on the program.

Theme 1

I can do it: Sense of Competence

Coaching parents using reflection and problem-solving to devise strategies towards therapeutic objectives increases their perceived competence and reduces stress⁴. The parents in this study described this sense of competence using words as below:

A: *"They (therapists) used to ask us questions..... thinking that therapists will ask us questions, we used to see the activity. We used to pick up small-small movements of the kids. Therapists made us do activities.... all of us did the activity in unison with everyone's opinion.... We considered all three kids and did the activities so that all could play the same game."*

B: *"New things we understood-what all happens in it... How to do it... What happens when you do this... Fingers, muscles, shoulder and all, what exercises can be done... How can we do it at home..."*

The quotes reflect the sense of competence as expressed by the parents due to active involvement in the 'HHC'. Understanding the rationale behind selecting a particular activity and opportunities to plan and implement helped nurture this sense; making it easy to modify activities for their children.

Making parents aware of goals and general therapy principles helps them feel more confident in carrying out therapeutic activities at home². Parents shared ideas about things they now want to focus at home for their children:

A: *"Small-small activities will be emphasized...Now the remaining thing is exercise...that is it..."*

B: *"Physical activities and all....Will focus on that...."*

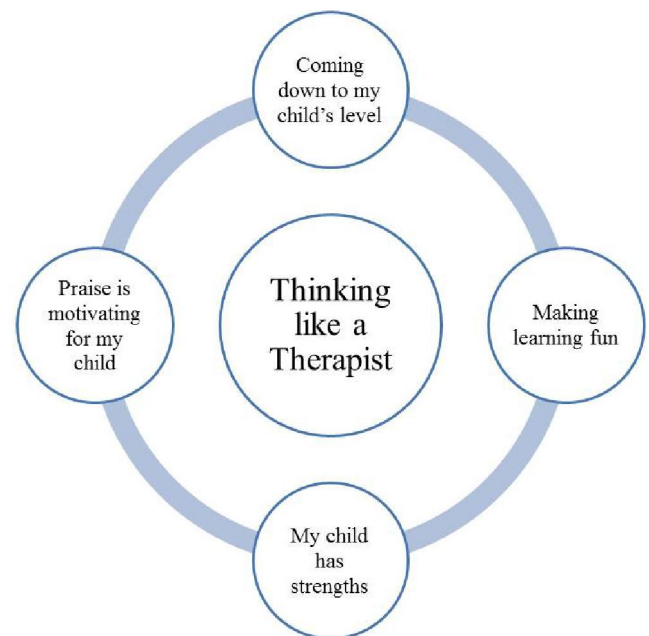
Theme 2

Thinking like a therapist

Parenting attitude is an important contributor to a child's progress⁸. Parents shared experiences and examples of ideas they are now more cognizant of while working with their children. One parent mentioned about this changed view in following words:

B: *"Therapists came down to younger kids' level and mixed with them (kids).... So kids mixed with them. Now even I have got an idea....now instead of thinking like mother I think of things like a therapist, as friend, like them (kids)..."*

Figure 2. Thinking like a Therapist



This change in attitude has been categorized in four sub- themes as follows (Refer **Figure 2**).

a. Coming down to my child's level

Striking a balance between the intrinsic challenge in the activity and the child's developmental competencies, is a product of providing the 'just right challenge' that is neither too easy nor too difficult¹⁶. One parent in the study shared an example showcasing an understanding of this:

B: *"Today (day of semi-structured interview) I drew a flower pot...Firstly I drew it as per my wish...according to me...then I thought he won't be able to make it... So I considered how it will be easier for him... I made it in shapes including slanting lines and triangles.. And then he did it easily.....I came to his level.... Initially I was saying 'do it...do it...' And then it clicked to me that...I will have to go to his level..."*

Opportunities to observe, implement and discuss activities with the therapists supported the parents understanding of their child's skills and place reasonable activity demands leading to success for both- child and parent.

b. Making learning fun

Play is used by pediatric OTs to facilitate the child's participation and learning new skills¹⁷. One of the parents mentioned how they observed this during the session and its influence when they work with their children.

B: *"Instead of getting mad, I think of how I can make it easier/better. What should I use...trick...to teach him...Like these people used to use...some things... Like they used to make stories...or something...or used to talk..."*

Making learning fun using play may help strengthen the parent-child relationship bond and reduce stress of the parents assuming

an additional role as the child's therapist². In this study, parents were observed to use stories, songs, animations, actions, and easily available objects to make the activities fun and play-based for their children.

c. *My child has strengths*

Recognizing and building on the child's abilities rather than limitations is an important tenet of the strengths-based approach¹⁸. One parent describes becoming more aware of the child's strengths and having realistic expectations thus reducing the stress on each of them and their relationship:

B: *"I used to get angry at my son sometimes....But after this group..... I think, these things are there in my child, these things aren't there... lets work on that gradually. No need to put force. He will understand those things according to age as he grows up...No need to take stress.....It makes it easier for me to deal with my child..."*

d. *Praise is motivating for my child*

Acknowledging small gains made by the child is motivating and encouraging². Observing therapists during the session, using 'specific' praise to reinforce desired behavior of the children helped the parents' replicate similar strategies while working with their children in the session. They retold accounts of using this during other times at home. Here is a quote:

A: *"It is there in her minds that when I study nicely mumma gives me star."*

Theme 3

Ripple effect: Whole Family Follow

Primary caregiving extends beyond parents to other family members in Indian scenario, making them important stakeholders in child's development. Thus influencing the families' attitude may impact the child's progress and provide a support system for the parents to cope^{19, 20}.

Here is what one of the parents shared:

A: *"Now day before yesterday she was watching a video... I told my husband....don't say anything...if she is concentrating on one thing she focuses on only that thing....My husband understood that let her see whatever she is seeing and then...talk...And there is a lot of difference now...."*

A: *"In my family there is a lot of improvement...once I go home from here...she used to show it (things done in session) to aaji (grandmother).....aaji has also improved...whatever happens...aaji says 'You(child) did well'.... Because of which the family environment has also become very good...as compared to initially..."*

Here is an account shared by one parent of noticing gains made by the child.

B: *"When relatives visit after a long time they see improvement....They keep on saying, 'he colours so well...or he is drawing so well'....when I listen to these comments.... then I*

feel, it's the fruit of my hard work."

Theme 4

Finding my voice

Evaluating the program effectiveness in collaboration with the parents through respecting their opinions and feedback extends FCC beyond therapeutic sessions²³. A trusting, non-judgemental relationship with the therapist and having a sense of competence may contribute to the parents sharing their opinions. Parents in this interview shared their opinions and suggestions as mentioned below:

A: *"We were involved later, but if you could take one session and then involve us from second session, then there will be a lot of difference...Because when we started getting excited about what we will do next...it was time for the group sessions to end."*

A chance to interact with other parents gives them a platform to share their experiences of child rearing²¹. This induces a sense of support and belonging with others going through a similar journey. Both the parents mentioned that these opportunities were provided as an inherent component of the group. However, they suggested the need for this interaction to start from the beginning.

B: *"First two-three weeks we were quiet during the lectures... Then third session onwards we got together.... if you can introduce parents before."*

They also suggested that they should have opportunities to interact with parents in forthcoming groups.

B: *"If previous group parents are allowed to attend 1-2 discussions during the future session.... To see...how these parents behave...how they discuss...how did they do the activity...what all ideas they have on activities...what all they are doing for their child...anything extra that you do..."*

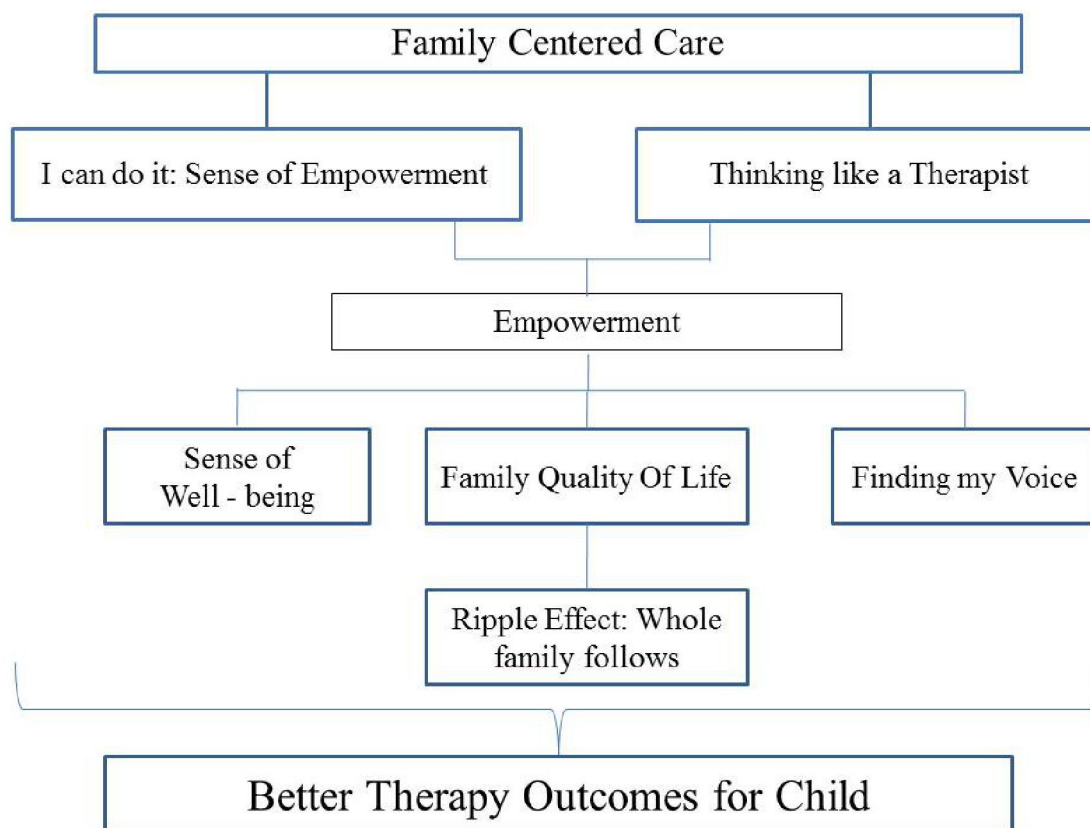
Discussion

The findings reflect the positive influence of relational and participatory components employed during the intervention on parental empowerment, sense of well-being and family's attitude towards the child thus increasing the therapy outcomes for the child (Refer **Figure 3**).

Parent empowerment is an outcome of FCC associated with a sense of control that arises by providing the parents with opportunities to experience success while working with their children^{1, 10}. Combining both 'relational' and 'participatory' components nurtures the parent-therapist partnership contributing to parents' sense of control, well-being and family quality of life¹¹.

In this study, building a warm, trusting relationship with the participating families and children by devoting time to orient them to the group process and respecting their suggestions without being judgmental, corresponded to the 'relational' component. The 'participatory' component corresponded to therapist sharing knowledge, using reflective questions to problem-solve, taking a backseat to give parents an opportunity to plan and implement activities and collaborating to formulate strategies to work with

Figure 3. Outcomes of Family Centered Care



the children.

From the findings of the present study and a literature review of past studies, the authors share their understanding of links between the different outcomes of FCC and its relation to the child's outcomes. This is explained in Figure 3.

Parents expressed high levels of self-efficacy in handling their child and reduced stress post the coaching sessions⁴. This supports the findings from the present study. During the semi-structured interview, parents reported an enhanced sense of competence and reduced sense of burden while working with their children. As reported by the parents, reasons underlying this were opportunities to observe and partner with the therapist, discuss activity rationale and implement activities. They shared examples of increased compliance and decreased resistance from the children to engage in activities.

Parent-implemented interventions assist parents to feel more competent in their role as a parent, better compliance of intervention and well-being of the parent and family^{4, 8, 11, 22}. The intervention then begins to occur in context of daily routines thus reducing the burden of following additional home programmes². This supports the findings of the present study. Parents reported motivation, creativity and flexibility to try and carry out activities at home as a result of discussions with the therapists during the session.

Stress related to parenting role is usually associated with feeling

of isolation, frustration, lack of support and juggling different roles and responsibilities²². This supports past literature that burdening parents with an additional role as their child's therapist may add to the stress. Parents in this study reported a change in their attitudes and it being recognized and followed by other family members contributing to happy family environment. Changed parental attitudes may possibly be related to the 'participatory' component of the group. However, a changing trend of family attitude perhaps maybe supplemented by observing a progress in the child's skills.

Being part of a group intervention program provided the parents in this study with natural opportunities to interact and share experiences and ideas with other parents. Parents' expressed that participating in a group gave them a chance to work with other parents, understand their parenting style and recognize the individuality of each child and parent in group. They also articulated a need to have more such opportunities in future. A conscious effort to enhance the peer support and studying its influence on the 'HHC' needs to be studied in the future.

Several researchers report parent involvement at multiple-levels from assessment, goal-setting, planning and implementing intervention and designing home programmes^{1, 2, 3, 4}. Families may also be involved in evaluating whether a program follows a FCC approach^{7, 23}. The present study used a semi-structured interview as a means to understand parental views. Apart from this, it may be used to evaluate the program and its impact and assist in making changes in future programs.

Future Scope and Study Limitations

The present study focused on studying parental views of participating in a group intervention following the FCC principles within Indian context. This study focuses on parental views of such learnings immediately after the group. In future, studies should evaluate if these learnings are sustained for a longer period.

A group intervention programme in itself provides an opportunity for parents to share ideas and experiences. This can be further utilized to develop support groups which will help in reaching out to more families.

In India, where there is scarcity and difficulty in accessing professional services and resources by all, empowering parents to work with their children seems to have great value. Even in absence of direct therapeutic services, making parents aware of basic principles can ensure better outcomes for the child.

Further exploration around certain themes such as importance of whole family involvement and peer support should be undertaken. There is a need to study the perspective of the child receiving services based on FCC approach.

Conclusion

Findings from the present study support use of combined 'relational' and 'participatory' components of FCC for parental empowerment and its linkage with parent, child and family outcomes. Partnering with parents can be done at different stages during session debriefs, planning and implementing activities, problem solving, and also in reviewing the programme. Such a partnership eventually helps near the ultimate goal of Pediatric Occupational Therapy-helping the child achieve his/her maximum potential.

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APPENDIX 1**Table 2.** Activity Analysis Questionnaire

ACTIVITY ANALYSIS QUESTIONNAIRE	
1.	What were the gross motor skills demanded or required during the activity? For example, muscles of shoulder girdle, or hips, back etc.
2.	Make a note of all the fine motor skills observed during the activity? For example, using both hands, pencil grip etc.
3.	What opportunities did the child get for social interaction during the activity such as taking turn, waiting for others, sharing, talking to others?
4.	How was the child's attention during the activity? What helped him to attend better or vice versa? Make a note of the child's behaviors which are suggestive of him attending to a particular activity like his ñ instruction following ñ speed of performance in particular activity ñ number of prompts needed during the activity.

APPENDIX 2**Table 3.** Semi Structured Interview Questionnaire

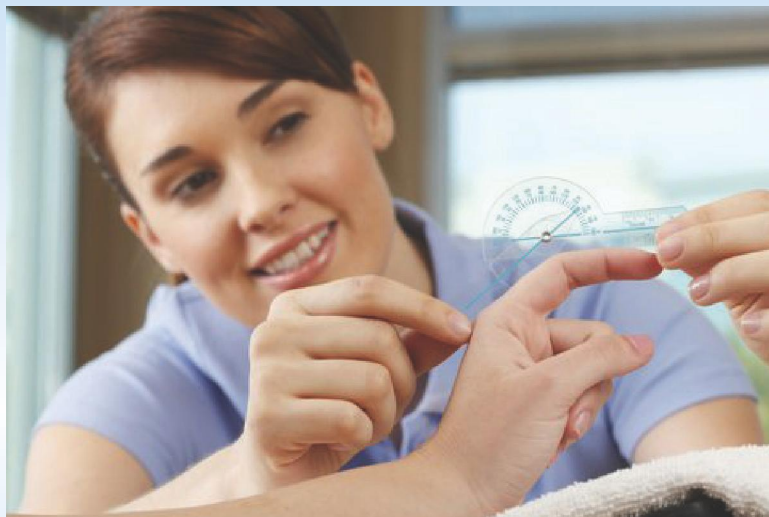
SEMI-STRUCTURED INTERVIEW QUESTIONS	
1.	What were some of your expectations when you signed up for the group?
2.	What were some of the things according to you that really stood out for you in the group?
3.	What is the one thing you will change after being the group?
4.	What effect does this have on your child/ you and your family?
5.	Does this fit in with your expectations and hopes at start of the group?
6.	What are some of the things you want to take forward from the journey of this group?
7.	What are some of the things that will help us make the process smoother for others?
8.	Two months from now what would I see you doing? Who would not be surprised to see that?

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Effect of fostering self-regulation in children with Attention Deficit Hyperactivity Disorder

Aishwarya Swaminathan¹, Hemant P. Nandgaonkar²

Abstract

Title:Effect of fostering self-regulation in children with Attention Deficit Hyperactivity Disorder.

Background:Self-regulation is the ability to stay calmly focused and alert, i.e. the ability to attain, maintain and change arousal levels appropriate for a task or a situation (Baumeister&Vohs' Handbook of Self-Regulation).Attention Deficit Hyperactivity Disorder (ADHD) is considered as the disorder of self-regulation.

Objective: To study the effect of fostering self-regulation in children with ADHD

StudyDesign: Prospective AB design

Methods: 10 children with ADHD age range 6 -10 years participated in the study. They were assessed on Sensory Profile Caregiver Questionnaire (SPCQ). Individualized goals were set to improve self-regulatory abilities using the Goal Attainment Scaling (GAS). Individualized comprehensive occupational therapy program was provided to them for 12 weeks. Intervention included Occupational Therapy based on Sensory Integration Principles and components of Alert Program ®. Participants were re-assessed using SPCQ, GAS post intervention. Parent and teacher reports were also collected post intervention.

Results:(1)SPCQ shows significant improvement as per paired t test ($P<0.05$) in sub sections scores post intervention. The percentage changes being Sensory Processing (4.5%), Modulation (9.2%), Behavior & Emotional Reactions (7.9%). SPCQ ADHD worksheet also showed changes post intervention. (2) As per GAS 20% less than expected outcomes, 54% expected outcomes and 22% more than expected outcomes achieved post intervention.

Conclusion: This study, gave an insight into the role of the comprehensive occupational therapy program based on Sensory Integration Principles incorporating components of Alert Program®, in fostering the sensory, cognitive and social self-regulation abilities in the children with ADHD. The effect of fostering self-regulation in the children was seen in the form of achievement of the set individualized goals (decreased inattention/distractibility, improved on task behaviors, improved social behaviors at home and school), and positive impact on the parents and teachers.

KeyWords:Attention Deficit Hyperactivity Disorder, Children, Occupational Therapy, Self-Regulation, Sensory Integration

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Period of Study :

May, 2013 - October, 2013

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Introduction

In the simplest terms, self-regulation can be defined as the ability to stay calmly focused and alert, i.e. the ability to attain, maintain and change arousal levels for appropriate for a task or a situation (Baumeister & Vohs' Handbook of Self-Regulation).

A high percentage of children with attention disorders also have sensory processing disorders (SPD) along with the core symptoms of inattention, hyperactivity and impulsivity.¹The sensory processing abnormalities and associated behaviors reflect the child's inability to self-regulate the sensory input and achieve an optimal or comfortable level of arousal or alertness.²

The current study, studied the effects of fostering self-regulation in children with Attention Deficit Hyperactivity Disorder (ADHD) using a comprehensive individualized Occupational Therapy program based on Sensory Integration Principles incorporating components of Alert Program®.

Aims and Objectives

The aim of the study is as follows:

1. To study the effect of fostering self-regulation in children with ADHD.

The objectives of the study are

1. To understand the effect of fostering self-regulation sensory, cognitive and social areas.
2. To study the effect of fostering self-regulation on achievement of individualized goals (inattention/distractibility, on task behaviors, social behaviors at home and school).
3. To understand the impact on the subjects' parents & teachers.

Methods

Design of study

A prospective study of AB design (i.e.) a single group, pre and post design. The study was approved by “Committee for Academic Research Ethics” of the Institute.

Study population

Inclusion criteria

- a) Age group 6 to 10 years
- b) Diagnosed cases of ADHD both males and females (according to DSM –IV criteria) with normal intelligence.
- c) Children having sensory processing difficulties as mentioned by their parents

Exclusion criteria

- a) Children with co morbid impairment of speech, hearing, vision system and/or moderate to severe mental retardation and /or pervasive developmental disorders.
- b) Children whose parents are not willing to participate in the study.

Procedure and design of the therapy

- 10 subjects, between age group 6-10 years, both boys & girls, diagnosed as case of ADHD were included as per the inclusion criteria.
- Subjects were assessed on Sensory Profile Caregiver Questionnaire (SPCQ) for detailed sensory processing evaluation
- Five Individualized goals were formed in collaboration with the parents and teachers using GAS (Goal Attainment Scaling) for each subject. The goals were set to address inattention/distractibility, on task behaviors and social behaviors at home & school. Comprehensive individualized occupational therapy program based on Sensory Integration Principles incorporating components of Alert Program® was provided to the subjects. Subjects attended these therapy sessions twice a week for 12 weeks. Each session of 45 minutes. Initial 20 sessions were provided as individual therapy. The last 4 sessions were conducted as group therapy with 3-4 children in a group. Parent training and teacher counseling was also provided. Parents were given briefing about the therapy sessions, Alert program and home program (including individualized sensory diet) for 15 minutes post each session. Teachers were counseled through notes and telephone.
- Subjects were re-evaluated using SPCQ and GAS at 12 weeks post intervention. Parent and teachers reports were also collected post intervention.

Comprehensive Occupational Therapy Program

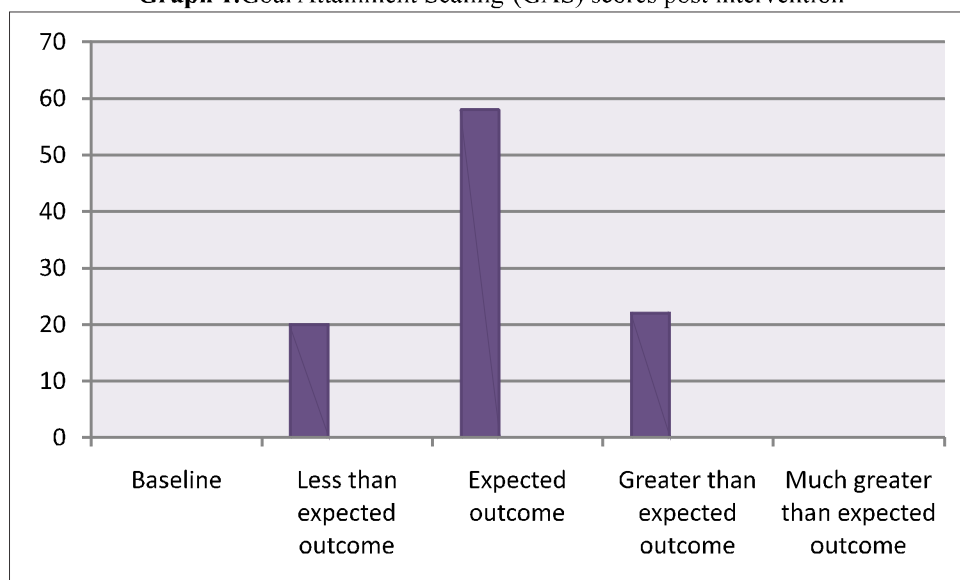
- Occupational Therapy Program using Sensory Integration Principles was provided based on Fidelity Guidelines,³ as follows:

- 1) Providing sensory opportunities including tactile, vestibular and proprioceptive opportunities.
 - 2) Providing just-right challenges
 - 3) Collaborating with the child
 - 4) Creating play context
 - 5) Maximizing child's success
 - 6) Ensuring physical safety
 - 7) Arranging room and equipment to motivate child to choose and engage in an activity
 - 8) Fostering therapeutic alliance by respecting child's emotions, conveying positive regard towards the child.
 - 9) Guiding self-regulation to the extent the child is capable of.
 - 10) Supporting optimal arousal so that the therapy situation is conducive to attaining and sustaining the child's optimal arousal by making changes to environment or activity to support the child's attention, engagement and comfort.
- Components of Alert Program® was provided using Alert Leader's Guide.⁴

Alert Program®- is a manualized program, developed by Occupational Therapists Mary Sue Williams and William Shellenberger in 1996. Using components of Alert Program® subjects were taught how their bodies which are like engines can be in “fast”, “slow” and “just right” speeds at various times. They were taught various Alert strategies to identify, label and change/maintain the “just right” arousal state that is required to participate in a task or a situation. Parents and teachers were taught and encouraged to use the Alert strategies at home and school with their children.

Results

- 1) As per **Graph 1**: Post intervention scores of GAS shows none of the goals remained at baseline, 20% of goals attained less than expected outcomes, 58% of goals attained expected outcomes, 22% of goals attained greater than expected outcomes, and none of the goals attained much greater than expected outcomes.
- 2) As per **Table 1**: Post intervention scores of SPCQ shows significant improvement ($P < 0.05$) in all three sections as per paired t test. The percentage change in the three sections i.e. sensory processing, modulation, emotional and behavioral responses are 4.2 %, 9.2% and 7.9% respectively.
- 3) As per **Table 2**: ADHD SPCQ Worksheet shows significant improvement ($P < 0.05$) is seen in all four sections. The percentage change in the four sections i.e. visual tactile perception, sensory seeking, inattention/distractibility, emotional reactions are 15.6%, 20.52%, 8.2%, 41.6% respectively.

Graph 1. Goal Attainment Scaling (GAS) scores post intervention**Table 1.** Comparison of Sensory Profile Caregiver Questionnaire (SPCQ) scores pre and post intervention

	SECTIONS		Mean	SD	SE	P-value*	%change
1	Sensory Processing	pre	276.8	12.461	3.941	<0.05	4.5
		post	289.2	10.581	3.346		
2	Modulation	pre	123.7	9.286	2.937	<0.05	9.2
		post	135.1	9.597	3.035		
3	Behaviour and Emotional Responses	pre	100.5	12.791	4.045	<0.05	7.9
		post	108.4	9.168	2.899		

*Significant changes ($P<0.05$) seen in all three sections post intervention

Table 2. Comparison of SPCQ ADHD worksheet scores pre and post intervention

	SPCQ ADHD Worksheet		Mean	SD	SE	P-value*	%change
1	Visual /Tactile Processing Cluster	pre	34.1	8.15	2.58	<0.05	15.6
		post	41.1	6.42	2.03		
2	Sensory Seeking	pre	44	4.40	1.39	<0.05	20.52
		post	49	6.32	2		
3	Emotionally reactive	pre	60.9	15.75	4.98	<0.05	8.2
		post	65.9	11.6	3.68		
4	Inattention / Distractibility	pre	13.2	2.89	0.92	<0.05	41.6
		post	18.7	4	1.27		

*Significant changes are seen in all four subsections ($P<0.05$) post intervention

Discussion

Sensory Self-Regulation

As per Table 1, there is improvement in Sensory Processing, Modulation. These findings are in accordance with *Chenget al.*⁵ who mentioned that impaired self-regulation and social behaviors in children with developmental disabilities may have an underlying sensory processing or modulation dysfunction as the cause. It concludes that these underlying sensory issues need to be treated by a sensory based Occupational Therapy to lead to better regulation of arousal levels (self-regulation) and therefore lead to decreased dysregulated behaviors. *Robertset al.*⁶ describes

the effects of classical sensory integration therapy. This study concludes that classical sensory integration therapy leads to improved self-regulation and thus improves behaviors like decreased aggression and hitting behaviors and improved engagement in academic tasks.

As seen in Table 2 the improvement in scores in the sensory seeking and visual/tactile processing may be attributed to the individualized sensory diet given as home program using Alert Concepts. As mentioned by *Weeks et al.*⁷ although direct therapeutic intervention is very essential, the implementation of individualized sensory diet also plays a major role in maintaining a child's optimum arousal throughout the day. As the sensory diet provides the

required sensory inputs to the child at regular intervals, this helps the child to better self-regulate and participate in various activities throughout the day.

Cognitive Self-Regulation

In this study subjects learnt to use “engine analogy” to identify and label their engine levels/ alertness levels (i.e. fast, slow or just right) as per Alert Program®. This may have helped the subjects understand their internal states i.e. to develop self-awareness. *Barkley*⁸ in his article mentions that ADHD is a disorder of executive functioning and self-regulation involving deficits in self-awareness. He mentioned that the dysfunctions in the executive system are delays in development and they are not complete absence of abilities. To help children with ADHD to overcome this delay we have to provide them with compensations and accommodations. This will in turn help them to better self-regulate and participate in a task or a situation.

The ability of the subjects to be able to understand and use the cognitive self-regulation strategies taught to them through Alert program® engine analogy also helped. This may have been possible as all subjects aged 6-10 years had normal intelligence as per their intelligence quotients. Similar findings in study by *Nikharge, Mulgaonkar*⁹ in which 22 children aged 4 to 12 years with normal intelligence were studied to evaluate the sensory perspective of ADHD. They concluded that Alert program may be used as an adjunct in treatment of children in ADHD to improve self-regulation.

Social Self-Regulation

As per Table 1 and 2, there was improvement in emotional / behavioral responses and emotional reactions thus showing improvement in the subjects' social behavior. Providing alert materials and cues within the context i.e. therapy room, home, school played a major role in maintaining the “just right” engine speeds and thus improve social behavior in social situations. This finding is supported by *Barkley*¹⁰ who mentions that in children with ADHD since self-regulation is poor; their behavior is mainly controlled by the context. Due to poor internal forms of information i.e. self-regulation deficits, in these children it is required to provide them with “external information” and that too at appropriate times and in their immediate contexts. This will better guide their behaviors and facilitate better participation in activities.

Group therapy in the last four sessions provided the subjects an opportunity to utilize the Alert self-regulation strategies in a group setting. This may have acted as training for children to later utilize these skills in social situations. This is supported by a study conducted by *Willset al.*¹¹ In their study they used group therapy intervention by adapting and incorporating Alert concepts to treat children with Fetal alcohol syndrome of which 74% of children also had Attention deficit hyperactivity disorder. The authors mentioned that the alert sensory motor strategies taught to the subjects were reinforced in the group setting and played a major role in improving self-regulation in group settings.

Achievement of goals

As per Table 2 the decreased inattention/distractibility may be

attributed to the improved self-regulation abilities in subjects which helped them maintain “just right” engine speed by using the Alert strategies during tasks and situations. *Oliver et al.*¹² used sensory-based techniques for increasing time on tasks. This study analyzes sensory strategies (adaptation of Alert Program®) for increasing time on task and work production in adults in mental retardation using three case studies. It concludes that sensory strategies help in maintaining the “just right” engine speed and thus help in decreasing distractibility and increasing time spent on tasks.

The attainment of “just right” engine speed i.e. the optimum level of arousal improved the task performance as well as social behaviors, and this may have led to achievement of goals of expected level (58%) as per Graph 1. *Kimball*¹³ pointed out that over arousal states led to behavioral disorganization, anxiety, and potentially negative responses and moderate arousal produced an ideal adaptive environmental interaction. This finding is supported by a study by *Hebb*¹⁴ which identified an inverted U curve relationship between arousal and performance i.e. the performance is best when the level of alertness is moderate/ optimum.

As per Graph 1, 20% of goals attained outcomes below the expected level and 22% of goals attained outcomes greater than expected level. This can also be attributed to the fact that some parents were not as educated or motivated whereas as compared to others in terms of implementation and following of the intervention program. And also the underlying self-regulation and sensory problems of each child were different. The individual abilities of each child to maintain “just right” arousal or engine speed for a particular task, situation or achievement of goals were different. These findings are in line with the work by *Berlyne*¹⁵ who mentioned qualities of sensation as role players in the modulation of arousal. He further suggested that optimum arousal was linked to limbic and ANS functions, and that there may be individual differences in tonic arousal levels and “arousability”.

Impact on parents and teachers

Parents mentioned that the family-centered approach used was beneficial to them. Meaningful prioritization of goals in collaboration with the parents helped in facilitating partnership. As per parent and teacher reports children had developed a level of independence in the self-regulatory abilities. Children were able to understand their alertness levels and help in choosing appropriate self-regulation strategies to achieve an optimum level of alertness required for successful task participation. This reduced the burden on the parents and teachers as mentioned by them.

The improvement in self-regulation can be majorly attributed to the team work by the Alert team (parents/caregiver and teachers) who implemented the taught program at home and school. The parent/ caregiver training and teacher counseling helped in improving the self-regulatory abilities in the subjects at home and school. This finding is supported by a systematic review by *Zwi et al.*¹⁶ in which they reviewed the effectiveness of parent training interventions for ADHD children aged 5 to 18 years and concluded that parent training may have a positive effect on regulatory behaviors of children with ADHD at home and school. The Alert program helped the Alert team parents/ caregivers and teachers an

insight into their own alertness levels and sensory motor preferences using “engine analogy” (reframing). This helped them understand their childrens’ behaviors and difficulties in terms of self-regulation and therefore help their children to self-regulate in a better way.

Conclusion

This study gave an insight into the role of comprehensive occupational therapy program based on Sensory Integration Principles incorporating components of Alert Program®, in fostering self-regulation abilities in children with ADHD. The effect of fostering sensory, cognitive and social self-regulation in the subjects was seen in the form of achievement of the set individualized goals (decreased inattention/distractibility , improved on task behaviors, improved social behaviors at home and school) , and positive impact on the parents and teachers.

Limitations and Future Implications

Small study population limited the generalizability of findings. Similar study of larger sample size with single or double blinded Randomized Control Trials can be conducted using different diagnosis in which self-regulatory issues are present.

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Effectiveness of Driving Training Program in a Patient with Guilliane Barré Syndrome - A Single Case Study

Sinoy Thekkepurackal Sam¹, Sujata Missal²

Abstract

Background : The study is to evaluate the patient abilities and too improve patient physical and cognitive ability in different areas in driving capacities which would help the patient independent.

Objective : The Objective of the study was to investigate the feasibility of driving rehabilitation training in a patient recovering from Guilliane Barré Syndrome (GBS).

Study Design : An ABA single case design was used for the study.

Method : A participant with post seven months GBS and having five years of driving experience with corrected vision and MMSE score of 25 was selected from the Outpatient unit of KMCH Occupational Therapy Department, Coimbatore. Pre and post intervention measures were done for the participant using driving fitness assessment, driving simulator, and on road assessment. The treatment was given one hour weekly twice for two months which include flexibility exercises, strengthening exercises and on road training.

Result : Result showed a significant improvement in muscle power, gross and fine hand functions, grip and pinch strength, and coordination and on road skills like visual, vehicle handling, vehicle positioning and strategical skills.

Conclusion : This study showed a significant improvement in performance components which thereby helped to transfer skills to improve driving safety and driving performance better.

Key Words : Driving Fitness Assessment, Driving Rehabilitation, Guilliane Barré Syndrome (GBS), Occupational Therapy, On-Road Evaluation Sheet, Simulated Driving Test

Introduction

Guilliane Barré Syndrome (GBS) is a collection of clinical syndromes that manifests as an acute inflammatory polyradiculoneuropathy that results weakness and diminished reflexes. GBS can lead to significant cognitive, motor, perceptual, and behavioral deficits. The incidence of new cases is estimated to be 1-2 in 100,000, with Male: Female ratio of 2:1.¹

A client named X with a history of GBS for 7 months aged 66 years, married and having two son's was recruited from the outpatient department of Occupational therapy, KMCH, Coimbatore for the study. The participant was an Indian staying in Pollachi having a history of Coronary heart disease and CABG was done 4 years back. The participant has completed his master's degree in mechanical engineering and having a driving license for 40 years. A written consent was obtained from the subject.

At the time of the assessment participant had intact vision (Eye power of left eye: 11.0D and right eye: 7.0D) and a MMSE score of 30 which indicates that he was cognitively intact. He did not have any impairment in the head and neck flexibility and had motor deficit in sensation (protective sensation) as tested on the SW monofilaments. On Trail making test it was found that he had a score of 37.5sec (A) and 58.3sec (B) showing the initial cognitive processing speed. On driving fitness assessment, participant showed poor muscle power in lower limb mainly in knee and ankle muscles i.e. in Iliopsoas, Rectus Femoris, Gluteus Maximus and Minimus, Adductors, External and Internal rotators of Hip, Hamstrings and Quadriceps of Knee, Gastrocnemius, Soleus, Anterior and Posterior Tibial, Peroneus Tibial, brevis and longus of Ankle, Lumbricals, Flexor and Extensor digitorum brevis, longus of Toe. The participant 'X' had a high stepping gait and, according to Berg balance score of 40 which means that he was able to stand with assistance. He was unable to maintain unilateral stance and able to stand for less than 1 minute with a narrow base of support.

The participant "X" was not able to hold an object more than 1 minute due to the tremors. He had poor equilibrium skills especially in lower limb activities due to poor muscle power.

On the **driving simulator**, the subject was unable to accelerate up to simulator level due to poor plantar flexion and compensation of hip and knee joint (the subject was able to press brakes and accelerator by extension of hip and knee) and had poor reaction time (1.095). The subject was

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unable to control the steering in proportion with clutch and brakes while turning in accordance with simulator due to poor coordination and muscle power.

A prospective study reported the disability and health-related Quality Of Life level in 42 patients (mean age 52 years) with GBS during the first 2 years after the acute onset. After 2 years of the onset of the GBS, 12% of the patients were dependent in Activities of Daily Living and 26% in Instrumental Activities of daily living. At 2 weeks, all of the patients that were working before the onset were unable to work owing to GBS and at 2 years, 17% were unable to work. At 2 weeks, scores on Sickness Impact Profile were elevated in all dimensions; at 2 years, they remained elevated in the physical dimension and in the categories of home management, work and recreation, and pastimes. These results attempt to show that the impact of GBS on ADL, work, social activities and health-related quality is considerable after 2 years of the onset and presumably persists beyond this time point.²

Depending on the degree of the residual disability encountered, consequences can range from being relatively minor to being completely devastating. OT advises on specific energy conservation strategies to manage fatigue and facilitate patient functional independence and provide adaptive equipment for the patient to facilitate personal care. This continues over time to incorporate in different tasks.

Driving and community mobility are considered as important aspects of IADL. The occupational profile should consider transportation, understanding where an individual client wants to go, how he or she plans to get there, (i.e.) Does the client's plan include driving?, driving habits, roles, and history. More importantly, driving should be viewed as a dynamic task influenced by both internal and external factors.

Internal factors may include cultural influences; the natural aging process; illnesses; injuries; and physical, cognitive, sensory, emotional, and visual changes. External factors may include medications, type and condition of roadways, time of day the individual drives, and weather conditions which may facilitate and hinder driving performance.³

There are various methods to do driving evaluation for the disabled population. Clinical results of a study suggest that driving ability may not be a static ability within person, but may vary and develop over time.

Driving is an important issue that needs to be addressed after GBS. Perhaps there is some reluctance to address this issue due to absence of clear guidelines, especially in India?

According to Stapleton T.³ the process of determining fitness to drive after GBS needs clarification and standardization. A study says that developing resources that support safe driving will facilitate the safety of those with arthritis and other road users.

Aims and Objectives

Aim

To find out the effectiveness of driving training in a GBS patient

Objective

To evaluate the patient abilities and deficit areas for driving rehabilitation

To develop the clients performance components required for driving

To evaluate the outcome of driving rehabilitation

Materials and Method

Research design: A single - case ABA design was used for 2 months for the study. ABA design is a design in which pre-assessment and post-assessment is done before and after the training programme and one assessment will be done during middle of training. Informed consent was obtained from the subject.

Selection Criteria

Inclusion Criteria

- A client diagnosed with Post GBS 6 month or before
- Age of the participant between 40 and 70 years
- Medically fit for driving rehabilitation.
- Participant should have been an active driver with driving license and experience in driving more than 5 years
- Participant should have scored 24 or more on the MMSE
- Muscle power in all four extremities of at least 3/5 on neurological testing
- Corrected vision >20/40 Snellen test, without visual agnosia

Exclusion Criteria

- Participants with severe psychiatric (e.g.) psychoses or physical conditions (e.g.) missing limbs, that would preclude full participation.
- Participant on multiple psychotropic medications that would negatively affect mental or physical functioning because of side effects; that would preclude participation

Instruments Used

Clinical measures

The occupational therapist will measure the participant's physical abilities using driving fitness assessment scale.

Driving fitness assessment

This is a 10-item fitness screening scale. This is developed to evaluate the patient's physical conditions including Muscle power, ROM, Hand functions and manipulations, vision, cognitive and perceptual components, trial making test part A and B using standardized measurements.

Simulated driving test

After the baseline clinical test administration, the participant was tested in driving simulator. The pretest involved a 6 minute urban drive scenario consisting of 4 straight drives and 3 turns and a 7 minute city/highway scenario consist of 7 straight drives and 5

turns. Response triggers were programmed into each drive scenario to potentially elicit a reaction from the participant. Three triggers were programmed into the city/highway drive. These triggers include trash, disabled road users, people passes by. For each scenario, the OT recorded the number and type of driving errors of the participant. The type of driving error and verbal responses from the participant's reaction to the response triggers were recorded. The entire battery of clinical and simulated driving assessments administered by the OT took about 2 hours to administer. This was to find out the driving abilities of patient in virtual environment to measure patients driving skills, reaction time, perception, visual field.

On road evaluation score sheet

This is to find the participants driving skills and to mark the driving errors on three on-road evaluations: (1) pre-intervention; (2) immediately post-intervention and (3) delayed post-intervention (within 2 months of the treatment). These evaluations are referred as Drive 1, Drive 2, and Drive 3, respectively.

The on road evaluation consisted of a scoring system from 0 to 4. These scores were used to indicate competence on specific subscales within 4 domains of driving performance. These domains fell under 3tactical and 1strategic sets of driving skills. A participant who had the opportunity to demonstrate the skill in question, but never did so received a score of 0. A score of 1 indicates that the participant demonstrated the skill in question on roughly 25% of the opportunities afforded during the on-road evaluation; a score of 2 on roughly 50%; and a score of 3 on roughly 75% of their opportunities. A score of 4 indicates that a study participant consistently performed the skill in question when presented with the opportunity.

Under the 4 domains of driving performance, the evaluation includes scores assigned under normal traffic conditions and under unusual, high-density conditions. The venue for these on-road evaluations, Greenville afforded very few high-density conditions, and the one roads in this city with the highest traffic densities were included in the evaluation drives. As a result, virtually all of the scores for all of the driving skills/behaviours reflect normal traffic conditions and driving errors are recorded. In rare instances, scores were assigned under high-density conditions are noted.

Feedback form

This was used to rate the therapy sessions and driving experience of the participant after the session. It consist of scoring from one to five (strongly disagree to agree).

Procedure

Intervention

The participant received the pre-test, intervention and post-test after 8 weeks. Based on guidance from physicians and driving rehabilitation specialists about the behavioural countermeasures most likely to preserve and extend safe driving practices among older adults (Staplin, 2012).³ As the participant did not have any problems in attention and visual skills only physical conditioning

training programs was selected as intervention which was based on the "Smart Wheels" protocol designed by Dr. Deborah Krotish and offered by Palmetto Health. The intervention consisted of an exercise protocol which was based on the deficits in performance components following the baseline assessment. The protocol included 1 hour sessions for 8 weeks which included flexibility, strengthening exercises.

Complexity of the exercises were monitored based on the progress of client by using various techniques like decreasing the base of support while stooping, weighted cuff was changed from 1kg to 3kg, Squatting was given in a lower level, Hard ball was given instead of soft ball under the toes while squatting, ball kicking was given in a grass surface to increase complexity. All these exercises were given 3 times with 10 counts each and counts were increased up to 50 counts with weighted cuff within fatigue range. After each exercise the patient was given rest for 2 to 3 minutes according to the severity of exercises. Activity table was given to the participant for recording the data.

On road evaluation was conducted after 2 weeks of intervention due to the failure in driving simulator. The driving sessions were divided into 3. In **drive-1**, the subject was given low traffic roads with a speed of 20 to 30 miles and with 1 or 2 intersection without any turns. In **drive-2**, the subject was given roads with moderate traffic with a speed limit of 40-50miles and having 2 or more interconnections and turns. And in **drive-3**, the subject was given heavy traffic roads with a speed limit of 50-60 miles with signal interconnections, U turns. The subject had good operational skills in using both heavy and light vehicle. But had poor tactical skills especially in vehicle positioning and handling on low traffic roads in initial stages, which improved later.³ (Refer Table 1 and Figure 1)

Post Test Evaluation

After 2 months of physical conditioning training the post test was again administered by the investigator and an Occupational therapist with specialization in Neurology reassessed the participant using driving fitness assessment, driving simulator assessment and On road assessment. The OT administered the posttest in conditions similar to baseline using driving fitness assessment and by using driving simulator and on road assessment and OT recorded the data and driving errors.

Statistical Analysis

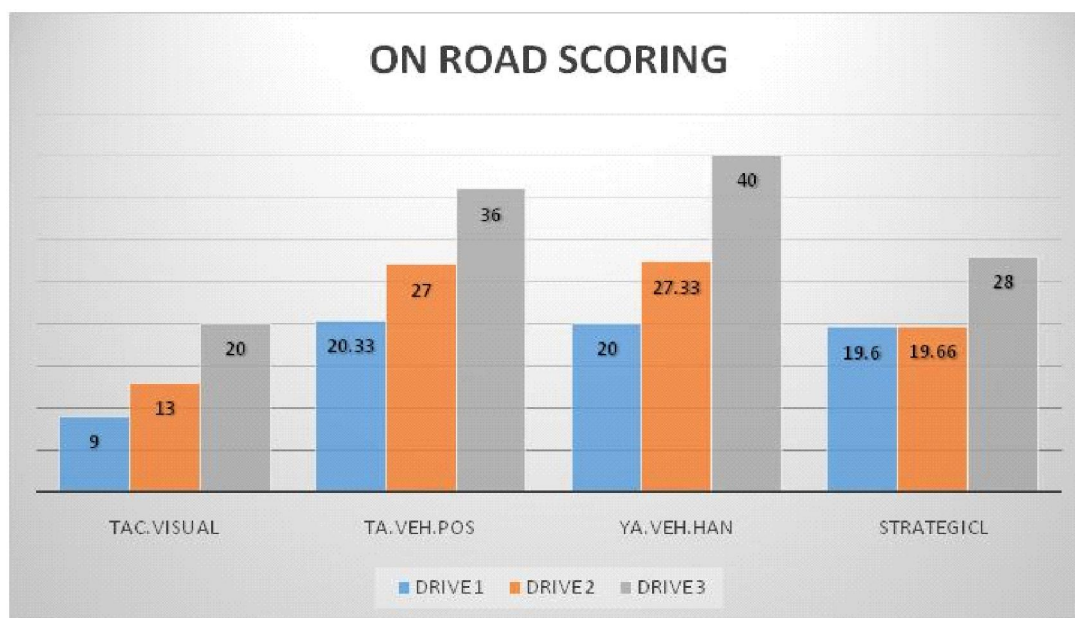
Scores were measured using descriptive analysis by calculating the percentage of each component. Formula: Percentage (%) = $n/N \times 100$

Discussion

On driving fitness assessment it was found that there was differences in pre and posttest results of the motor areas like ROM, muscle power, hand functions as the participant's motor performance was unstable before participation. Therefore the participant was trained invarious strengthening exercises for one hour session for eight weeks which helped the patient to improve the gross and fine hand function, grip strength, pinch strength.

Table 1. Difference in Percentages and Average Total Score of Tactical Visual Skills, Vehicle Positioning, Vehicle Handling and Strategic Skill in On-Road Evaluation Sheet

COMPONENTS	DRIVE 1				DRIVE 2				DRIVE 3			
								TOTAL				TOTAL
On Road Assessment Dates	1 ST DAY	7 TH DAY	14 TH DAY		21 ST DAY	28 TH DAY	35 TH DAY		42 ND DAY	48 TH DAY	56 TH DAY	
Ta. Visual Skills	9	8	10	9	10	14	15	13	20	20	20	20
Ta. Vehicle Positioning	24	19	18	20.33	27	27	27	27	36	36	36	36
Ta. Vehicle Handling	20	20	20	20	26	26	30	27.33	40	40	40	40
Strategic Skills	19	20	20	19.6	19	19	21	19.66	28	28	28	28

Figure 1. On-Road Scoring

Motor scores improved in post intervention which indicates that there was a possible learning effect during intervention. This training helped in motivating the client, further it was a realistic experience and helped the participant to improve the driving skills. The driving training program helped the participant to perform well in both simulator and in on-road driving.

Hurt L.A in 2008² also stated the importance of driving rehabilitation for older adults. For older participants the key components like visual perceptual skills, cognitive skills, and sensory functions are assessed. In this study though the participant X age was 66 years, he showed few deficits in cognitive skills (Trail making test, MMSE=30), but more sensory and motor deficits, therefore there was a greater importance for driver intervention in this client. There

is progressive improvements especially in Trail making test (test A: 37.5sec to 24.5sec and B: 58.3sec to 54.5sec), which could be due to the speed and strength gains following intervention. The findings align with that of the study done by Classen, S., et al. in 2014, where in a combat veteran cultivated selective and divided attention skills following occupational therapy driving intervention.⁴

The on-road training helped in improving the driving skills from drive 1 to drive 3 thus reducing the driving errors. There was an improvement in tactical skills (visual skills, vehicle handling, vehicle positioning), motor skills and strategic skills which is similar to the study done by Stapling L, et al. 2013, which shows that there was an improvement in the participants performance in

motor skill and driving skills from drive one to drive-3.

Shechtman O. in 2009 in his study replicated real-world intersections in their driving simulator, they found that during assessment of driving errors negotiating turns in the simulator can be generalized or transferred to the road under the same testing conditions. Similarly the participant in the present study showed driving errors on driving simulator during the pretest, when he was given the same experiences in realistic conditions the participant could understand the errors and make changes, which helped him to improve the driving skills.

On driving simulator, the participant showed a significant improvement in driving performance in posttest with remarkable improvement in reaction time from 1.095 to 1.367. He was also able to drive in all condition traffic roads, that was from low to heavy traffic roads with two or more interconnections, at turns, proper vehicle handling, making appropriate stops which is similar to the findings of the study done by Daniel.J.Cox, et.al 2010 on TBI patients.⁵

In the study done by Lew Henry most patients and control subjects reported that they found the driving simulator more difficult than driving a car. They related this to inherent features of the simulation as well as to challenges that were intentionally programmed into the driving scenarios. Similarly in the present study it was noted that initially the participant had difficulty in adjusting with simulator and on road training especially in making turns, braking, handling which improved in later sessions due to the training effect.

Finally the feedback provided by the participant was encouraging in terms of participants' agreement with the statements, ***"The training activity I participated in will help me be a safer driver," and "I would recommend this training activity to a friend or family member."***

Conclusion

There are some important caveats when drawing conclusions from this study. It is possible that physical conditioning training task will exhibit transfer-of-training to driving. It is also fair to question whether data from a 2-month intervention provides a sufficient basis upon which to draw conclusions about the persistence of training effects. Perhaps most critically, the present findings do not strongly support conclusions about the potential for the training approaches to remediate serious deficits in driving. The value of such training may be limited to those already performing at a very high level as the participant in this study was already a driving licence holder for past 40 years and it was his passion to get back to driving post GBS which he has taken as a challenge to

accomplish.

Limitations

Treatment duration was less

Absence of a high fidelity simulator and vehicle

Absence of standardized scales which can be used for simulator

Absence of studies related to driving rehabilitation on GBS patient

Absence of a team approach to driving rehabilitation

Recommendations

Large sample size

Long term treatment sessions

More standardized scales for more accurate values.

Follow study can be conducted to see long term effect of driving.

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Effectiveness of Oral and Non-Oral Sensorimotor Stimulation to Facilitate Oral Feeding in Preterm Infants - A Comparative Study

Christina Catherine. R¹, Sugi. S²

Abstract

Title : Effectiveness of Oral and Non-Oral Sensorimotor Stimulation to Facilitate Oral Feeding in Preterm Infants - A Comparative Study

Objective : To compare the effects of oral stimulation and combined oral and non-oral sensorimotor stimulation programs in facilitating oral feeding (readiness, performance and time-taken) and weight gain in preterm infants

Methods : Fourteen participants under tube feeding were included in oral intervention group (N=7) and combined intervention group (N=7). Preterm Infants Oral feeding assessment scale (POFRAS) was used before, during and after the stimulation. Intermediate and post-test measures of oral feeding performance (rate of intake, volume of intake, volume loss and proficiency) were assessed. Weight gain of the samples was noted. Design- Two group pre and post Quasi experimental.

Results : Within group comparison of pre-test and post-test POFRAS measures shows a significant difference in oral feeding readiness scores in oral and combined stimulation groups. Between groups comparison of oral feeding readiness and performance measures did not show any significant difference in readiness scores, rate of intake, volume of intake and volume loss. But the intermediate and final mean values of proficiency were greater for combined intervention group. (Prof1=97.05, Prof2=112.60) than for oral intervention group (Prof1=89.14, Prof2=129.18). Combined intervention group initiated oral feeding and attained full oral feeding faster than the oral group. The pre-pest and post-test measures show a statistically significant difference in weight gain for combined intervention group ($P=0.01$) but not for the oral intervention group ($P=0.06$).

Conclusion : Oral and combined sensorimotor stimulations effectively improved the oral feeding readiness and performance in the infants. Combined stimulation group had better oral feeding proficiency with faster initiation of oral feeding and faster attainment of full oral feeding clinically. The combined stimulation group had greater weight gain than oral group.

Key Words: Oral Feeding, Preterm, Stimulation, Weight Gain

Introduction

Oral feeding in infants requires coordination of nutritive sucking, swallowing, and breathing. It is a complex multisystem process that involves both the oral and other systems, including cardio respiratory, gastrointestinal, and neurological systems.

It is estimated that 30 - 40% of preterm infants may encounter oral feeding problems. Neonatal oral feeding difficulties often delay discharge from the hospital, negatively impact parent-infant bonding and they may lead to long-term feeding disorders causing growth failure.¹

A preventative approach can reduce and/or prevent the occurrence of neonatal oral feeding difficulties, and thus ease the burden of care. Sensorimotor stimulation is used to improve oral feeding. It is described as the provision of developmentally appropriate sensory inputs including oral, tactile and kinesthetic stimulation to facilitate the development of existing rudimentary skills.

Oral sensorimotor interventions have been the major focus of studies because they provide direct, targeted input to the oral structures involved in feeding.² However, as oral feeding is a complex multisystem process, it is conceivable, therefore, that sensorimotor input targeting non-oral systems, such as trunk and limbs, may have distributed effects that go beyond the target system and improve oral feeding performance.³ However, combined sensorimotor interventions may have an additive D synergistic effect on oral feeding in preterm infants.^{4,5} Limited studies are there to prove the additive effects of combined sensorimotor stimulation over oral sensorimotor stimulation on oral feeding in preterm infants. So, this study focuses to compare the effectiveness of oral sensorimotor stimulation with that of combined sensorimotor stimulation to enhance oral feeding in preterm infants.

Methodology

Variables

- Independent variables: Oral sensorimotor stimulation and combined (oral and non-oral)

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sensorimotor stimulation.

- Dependent variables: volume of transfer, rate of transfer and length of hospital stay
- Extraneous variables: Number of parental visits, severity of illness, co-morbidities, and concurrent treatments.

The study includes 14 samples: 7 in oral stimulation group and 7 in combined stimulation group. A non-probability convenient sampling was used. The study design is two group pre and post quasi-experimental.

Inclusion criteria

- Preterm neonates born between 26 and 32 weeks of gestation.
- Infants who received all feedings by tube.
- Male and female.
- Neonates who scored less than 30 in Preterm Infants Oral Feeding Readiness Scale (POFRAS)

Exclusion criteria

- Children with severe respiratory and cardiovascular disorders.
- Infants who lack stable vital signs.
- Infants with any congenital anomalies.
- Infants with chronic medical complications (including severe bronchopulmonary dysplasia, intraventricular haemorrhages (IVH) III or IV periventricular leukomalacia or necrotizing enterocolitis).

Tool used

Preterm infants Oral Feeding Readiness Assessment Scale (POFRAS)

It is a validated tool⁶ and assesses the domains of behavioural organization, oral posture, oral reflexes, non nutritive sucking and stress signs. Maximum score is 36 and a score of less than 30 denotes lack of oral feeding readiness.

Outcome measures

- Oral feeding readiness scores (obtained from POFRAS)
- Rate of transfer (volume of milk consumed relative to the duration of the oral feeding session [mLD min])⁷
- Volume loss expressed in terms of weight (g) (It is the volume of milk spilled from the lips. A weighed cotton swab was used to absorb the spilt milk. The post weight of the swab is subtracted from the initial weight to measure the volume loss); Weight is calculated using a standard electronic weighing device.
- Oral feeding proficiency (Volume of milk consumed in the first 5 min as a percentage of the total volume of intake)⁸
- Number of days taken from the starting of intervention to initiation of oral feeding
- Number of days taken from the starting of intervention to attainment of full oral feeding
- Weight of the infant expressed in Kg.

Equipment used

Equipment used for calculating the weight of cotton swab: Electronic balance BL220 H

- Capacity: 220g
- Readability: 0.01 g

Procedure

Informed written consent was obtained from the parents. Oral feeding readiness was assessed for the neonates under tube feeding using POFRAS. The neonates fulfilling the selection criteria were categorized into experimental group 1 and experimental group 2 by matching the samples for gestational age (26-28 weeks, 28-30 weeks, and 30-32 weeks) and for the initial oral feeding readiness scores.

- Oral sensorimotor stimulation was provided for group 1 and combined (oral and non-oral) stimulation for group 2.
- Frequency of stimulation: Thrice a day with a minimum 3 hour interval between the sessions approximately half an hour before the feeding time.

Protocol

Oral sensorimotor stimulation

Thrice-daily stroking of the cheeks, lips, gums and non-nutritive sucking for 5 minutes with gloved hands.

- Five small firm rubs on each side of the mouth (ear to corner of mouth)
- Gentle pressure under the base of the tongue, under the chin.
- Two more repetitions of a and b
- Five small firm rubs around the mouth.
- Gentle pressure under the base of the tongue. Two more repetitions of d and e.
- Rub three times on the upper gums, front to back on each side, gentle pressure under chin after each side is stimulated.
- Repeat g) on lower gums.
- Repeat g) on inside of upper gums.
- Rub three times back to front along upper palate.
- Hold the little finger against upper palate for few seconds.⁹

Non-oral sensorimotor stimulation

Tactile stimulation: It consists of smooth, slow and continuous stroking.

- Position prone

Stroke with hand 1. From top of head to neck, 2. From neck across shoulders, 3. From upper back to the waist, 4. From thigh to foot and to thigh on both legs and 5. From shoulder to hand and to shoulder on both arms (12 times, 1 min each)

- Position supine

Stroke with hands 1. From top of head to neck, 2. From neck across



Figure 1. Oral Stimulation



Figure 2. Non-Oral Stimulation

shoulders, 3. From neck to lower abdomen, 4. From thigh to foot and to thigh on both legs and 5. From shoulder to hand and to shoulder on both arms (12 times, 1 min each)

Kinesthetic stimulation: It involves slow limb mobilizations in flexion or extension.

- Position supine. Start movements in neutral with a firm grasp. Passive flexion and extension of 1. Right arm, 2. Left arm, 3. Right leg, 4. Left leg and 5. Both legs (6 times and 1 min each) ⁴

Manual exploration: by the infants of different parts of their bodies (2 min)

(Figure 1 and 2)

For all the samples under study, the oral feeding readiness was assessed every day using POFRAS. Volume of intake, time taken for the feeding session and volume loss was noted almost every day after the initiation of oral feeding. Proficiency was calculated at the intermediate stage (Proficiency 1) and on attainment of full oral feeding (Proficiency 2).

Results

The data was analysed using SPSS version 19. Both descriptive and inferential statistic methods are used. Mean gestational age of Oral group and combined group at the initiation of the study were 29 and 30 respectively and the mean corrected gestational ages were 30 and 31 respectively. The initial POFRAS score for oral and combined group was 15.5 and 16.8 respectively. When subjected Mann Whitney analysis to ensure the homogeneity between the groups it was found to be statistically insignificant for gestational age ($P=0.47$), corrected gestational age ($P=0.39$) and initial oral feeding readiness scores ($P=0.60$). There were 5 males and 2 females in each group. On comparing the post and pre-tests scores of oral feeding readiness of infants using Wilcoxon signed rank test within the groups, both Oral and combined intervention group displays a statistical significance in all the sub components of POFRAS. **(Table 1 and 2)** On comparing the mean values of proficiency, the combined intervention group has higher

proficiency than the oral group- Proficiency 1 of combined intervention group (129.18) is greater than Proficiency 1 of oral intervention group (89.14). Proficiency 2 of combined intervention group (112.6) is greater than Proficiency 2 (97.05) of oral intervention group. On comparing the mean values, the combined intervention group has taken lesser days to initiate oral feeding and to attain full oral feeding than the oral intervention group. However, between groups comparison using Mann-Whitney U test did not show a statistically significant difference in oral feeding performance and proficiency. On comparing the pre-test and post test scores of weight (in Kg), the oral group did not show a statistically significant difference in weight whereas the combined intervention group showed a statistically significant difference ($P=0.018$) as shown in **Table 3**.

Discussion

All interventions were provided when infants were clinically stable as determined by the neonatologists. The intervention pursued until the neonates achieved full oral feeding. The optimal behavioural states of the preterm infants were drowsy, quiet or active awake. So the intervention was provided when the infant was in one of these states. Interventions were halted if infants demonstrated any of the following signs of distress: apnea, bradycardia, oxygen desaturation, fussing (denoted by flailing arms and legs), crying, or emesis. All interventions were administered in the isolette by the researcher. In premature infants the baseline traits (volume and rate of intake, proficiency and transition time) were found to be good predictors of feeding skills.¹⁰

The pre-test and post-test measures of the total score and sub components of preterm infants oral feeding readiness scale were subjected to Wilcoxon signed rank test. There was a significant difference in the pre-test and post-test oral feeding readiness measures in both the groups. (Table 1 and 2) The results correlate with previous evidences of the efficiency of oral¹¹ and combined¹² stimulation to facilitate oral feeding. Combined sensorimotor stimulations, as implemented here, do not have an additive or synergistic effect on oral feeding performance. The results also

Table 1. Comparison of pre-test and post-test oral feeding readiness scores in oral intervention group

TEST	N	RANKS	N	MEAN RANK	SUM OF RANKS	Z	P value
BEHAVIORAL STATE Post-Pre	7	Positive ranks	0	.00	.00	-2.220	0.02
		Negative ranks	6	3.50	21.00		
		Tie	1	-	-		
ORAL POSTURE Post-Pre	7	Positive ranks	0	.00	.00	-2.121	0.03
		Negative ranks	5	3.00	15.00		
		Tie	2	-	-		
ORAL REFLEXES Post-Pre	7	Positive ranks	0	.00	.00	-2.288	0.01
		Negative ranks	7	4.00	28.00		
		Tie	0	-	-		
NON-NUTRITIVE SUKING Post-Pre	7	Positive ranks	0	.00	.00	-2.384	0.01
		Negative ranks	7	4.00	28.00		
		Tie	0	-	-		
POFRAS TOTAL Post-Pre	7	Positive ranks	0	.00	.00	-2.366	0.01
		Negative ranks	7	4.00	28.00		
		Tie	0	-	-		

Table 1. Compares the post and pre-tests scores of oral feeding readiness of infants in Oral group displaying a statistical significance in all the sub components (Behavioural state, oral posture, oral reflexes, non-nutritive sucking) and in the total score at 95% confidence interval (CI).

Table 2. Comparison of pre-test and post-test oral feeding readiness scores in combined intervention group

TEST	N	RANKS	N	MEAN RANK	SUM OF RANKS	Z	P value
BEHAVIORAL STATE Post-Pre	7	Positive ranks	0	.00	.00	-2.449	0.01
		Negative ranks	6	3.50	21.00		
		Tie	1	-	-		
ORAL POSTURE Post-Pre	7	Positive ranks	0	.00	.00	-1.890	0.05
		Negative ranks	4	2.50	10.00		
		Tie	3	-	-		
ORAL REFLEXES Post-Pre	7	Positive ranks	0	0.00	.00	-2.388	0.01
		Negative ranks	7	4.00	28.00		
		Tie	0	-	-		
NON-NUTRITIVE SUKING Post-Pre	7	Positive ranks	0	.00	.00	-2.379	0.01
		Negative ranks	7	4.00	28.00		
		Tie	0	-	-		
POFRAS TOTAL Post-Pre	7	Positive ranks	0	.00	.00	-2.371	0.01
		Negative ranks	7	4.00	28.00		
		Tie	0	-	-		

Table 2. Compares the post and pre-tests scores of oral feeding readiness of infants in Combined intervention group displaying a statistical significance in all the sub components (Behavioural state, oral posture, oral reflexes, non-nutritive sucking) and in the total score at 95% CI.

correlate with Fucile et al,⁴ where the combined intervention did not lead to additive D synergistic effects for rate of transfer, and volume loss.

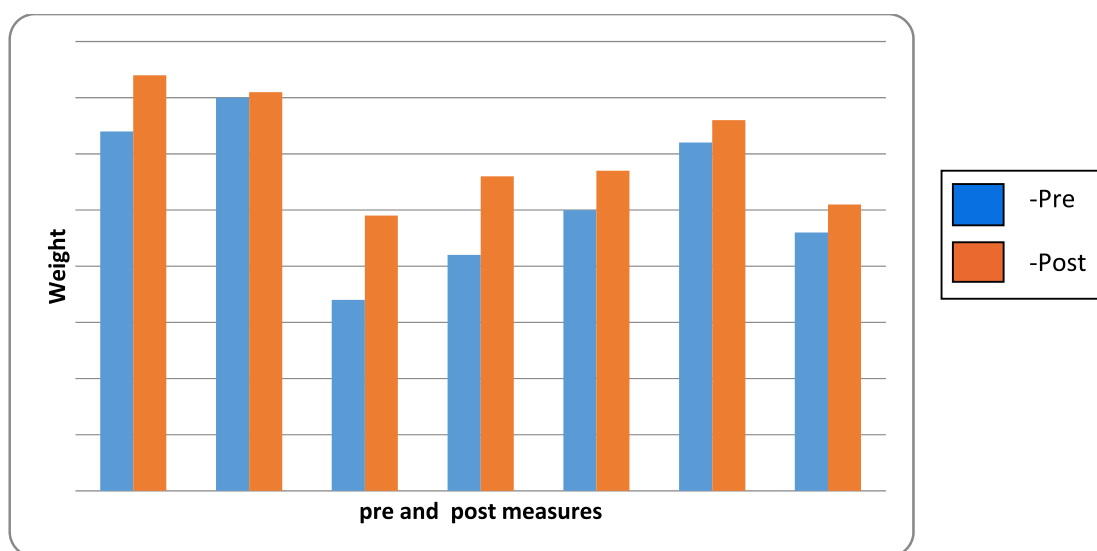
However, according to Fucile et al, the combined sensorimotor intervention led to an additive D synergistic effect for proficiency.

In this study, although there was no statistical significance found between the groups in oral feeding proficiency, the mean values showed that the combined intervention group had better oral feeding proficiency than the oral intervention group. The number of days from the starting of intervention to initiation of oral feeding

Table 3. Comparison of pre-test and post-test measures of weight in oral and combined intervention group

GROUP	N	RANKS	N	MEAN RANK	SUM OF RANKS	Z	P value
ORAL INTERVENTION GROUP Weight (Post-Pre)	7	Positive ranks	5	1.50	3.00	-1.863	0.06
		Negative ranks	2	5.00	25.00		
		Tie	0				
COMBINED INTERVENTION GROUP Weight(Post-Pre)	7	Positive ranks	7	0.00	0.00	-2.366	0.01
		Negative ranks	0	4.00	28.00		
		Tie	0				

Table3. Compares the post and pre-tests scores of weight in oral and combined intervention group. On comparing the pre-test and post-test scores the oral group did not show a statistically significant difference in weight whereas the combined intervention group showed a statistically significant difference($P=0.01$) at 95% CI.

Graph 1.Pre-test and post-test measures of weight (in kg) in combined stimulation group

Graph 1 shows the difference between the pre and post-test measures of weight (in Kg) in the combined stimulation group

was faster in combined intervention group (Mean=9.14) than the oral intervention group (Mean=12.14). And, the number of days taken from the initiation of intervention to attainment of full oral feeding was also faster in combined intervention group (Mean=15 days) than in oral intervention group (Mean=18 days) denoting a clinical significance. According to Lessen BS¹³, oromotor invention performed singly had an effect on feeding progression and length of hospital stay. Although the difference was not statistically significant, further studies with larger sample size could provide a wider knowledge.

The pre-test and post-test measures of weight of the preterm infants were subjected to Wilcoxon signed rank test. There was a statistically significant difference in the pre-test and post-test measures of weight in combined intervention group whereas, there was no significant difference between the pre-test and post-test measures of weight in oral intervention group. Thus, the non-oral sensorimotor intervention has a significant effect on weight gain which would facilitate overall growth and development of the premature infant. (**Graph 1**) The additive effect on weight gain in the combined intervention group may be attributed to the effect of

non- oral stimulation motor activity and gastrointestinal motility of the preterm infants.¹⁴

Taking into consideration the additive effects of non-oral sensorimotor intervention on oral feeding on proficiency, earlier attainment of oral feeding and weight gain it would be beneficial to provide the preterm infants with oral as well non- oral sensorimotor interventions.

Conclusion

The oral and combined stimulation improved the oral feeding readiness of the preterm infants. Clinically, the combined stimulation group attained oral feeding faster and had better oral feeding proficiency than the oral stimulation group. The combined stimulation group had greater weight gain than the oral stimulation group. Thus to provide a comprehensive care for the neonates it is necessary to incorporate non-oral sensorimotor stimulation along with oral sensorimotor stimulation to facilitate better oral feeding in preterm infants, for faster progression to full oral feeding, to enhance efficient weight gain and thus causing earlier hospital discharge.

Limitations and Recommendations

The study results can be generalised if done on a larger sample size. Analysing the results by comparing with a control group would be more meaningful. The tactile-kinesthetic stimulation has an observable effect over the behavioural state of the preterm infants.^{15, 16} Further studies to show the effects of non-oral stimulation on behavioural state and the significance of correlation between the behavioural state, motor development¹⁷ and oral feeding would provide a wider knowledge on this subject.

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Our sincere thanks to all the parents who provided consent for the study. We express our gratitude to the faculty members of the Department of Occupational Therapy and the Neonatologists, KMCH, Coimbatore for their suggestions and support.

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NEWS AND INFORMATION

World OT Day 2016 & OTINDIA Month

AIOTA Branches, Institutions and members celebrated World OT Day on Oct.27 and OTINDIA Month from Oct.27 to Nov. 26, 2016 with the theme 'ACEESIBILITY@OTIndia'. Celebration report will appear in AIOTA/WFOT News Letters.

Kit Sinclair to deliver Key Note Address in OTCION'2017 at Jaipur:

'Visioning for the Future' will be the title of the Key Note Address to be delivered by Dr. Kit Sinclair (Hong Kong) Formerly President of WFOT and currently WFOT Ambassador and Editor WFOT Bulletin at 54TH Annual National Conference of AIOTA at Jaipur from Feb. 17-19, 2017 at Jaipur. Dr. Kit will also conduct Pre-conference COTE Workshop on 'Making a Difference in Disaster Management' on Feb 17 ie on day 1 of the conference.

Retroactive Approval from WFOT

OT's graduated from R.M.M.C. Medical College (Annamalai University), Chidambaram and J.K.K.M.M.R.F., Ethirmediu, Komarapalayam (T.N. Dr. M.G.R. University, Chennai) are now authorized to become members of AIOTA and WFOT. AIOTA succeeded to get the programs retrospectively approved from WFOT since the inception of both the programs. The information is uploaded on WFOT Website. The pass out graduates and Provisional Members of AIOTA may submit applications to Hon. Treasurer for regular Life Membership of AIOTA and WFOT

OT's in Autism Medical Certification Board

Occupational Therapists being an integral part of any pediatric assessment and developmental disorder treatment may be included as a part of the Autism Medical Certification Board. Ministry of Health and Family Welfare, Government of India has accepted AIOTA's request and recommended to Ministry of Social Justice & Empowerment in this respect.

Inclusion of OT's in National Trust for Welfare of Children

National trust for Welfare of Children of Department of Empowerment of PWD's under Ministry of Social Justice & Empowerment, Govt. of India has accepted AIOTA's request and decided to include one post of OT, in each of the 4 projects of the National Trust namely DISHA (Early intervention and School readiness scheme), SAMARTH (Respite care Residential scheme), VIKAAS (Day care scheme for 10 year and above) and GHARAUNDA (Group home for adults scheme). Visit www.thenationaltrust.gov.in for more information.

Occupational Therapists will be appointed at PHC's in Bihar

Congratulations to Bihar College of OT & PT and Bihar Branch of AIOTA for the commendable achievements, which are recently announced by CM of Bihar State Sri Nitish Kumar at a function organized by Bihar College of OT/PT Patna. In his address he said that the therapists will be employed soon at PHC level to cater the need of rural areas and also the retirement age will be extended to 67 years to bring it at par with medical doctors. He further announced that occupational therapists and physiotherapists will be treated at par with medical, dental and Ayush doctors because they are indispensable part of health services. He also assured for setting up of State Council for monitoring the therapy services in the state of Bihar.

ICF Core Set on ASD in Stockholm

Dr. Mrs. V.S. Bole EC Member ACOT was invited as a member of an international group of 20 persons with expertise in. ASD to participate in a conference to develop the first version of ICF core sets for ASD

from 9-11 September 2016 at Stockholm. The group of invitees comprised of pediatrician, physiotherapist, social workers, speech & language therapists, psychiatrists, occupational therapists, special educators, psychotherapists and psychologists representing all six WHO world Regions and Countries. It discussed and developed a special age specific ICF core sets as seen essential to reflect the specific ICF core characteristics.

Information

Dr. V.S. Bole

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Nomination for Technical Council of ICHA

Following were nominated for the Technical Council of Indian Confederation of Health Care Accreditation (ICHA) from AIOTA.

Dr. Anil K. Srivastava, President AIOTA (Nominee Director)

Dr. Mrs. V.S. Bole, EC Member ACOT

Dr. Neeraj Mishra, EC Member AIOTA

For more information on ICHA visit www.icha.in

The Swedish Design Exhibition, Ahmedabad:

Accepting the invitation and telephonic request from Swedish Consulate, President AIOTA designated Dr. S.R. Apte on behalf of AIOTA to attend the Swedish Design Exhibition on Aug. 10, 2016 at Nat. Institute of Design, Ahmedabad. The exhibition showcased the products that are designed to improve the quality of life for differently abled people. Dr. Anwar Ali Dhamani also attended the inaugural function.

Scheme to Rehabilitate disabled children in Kerala

The departments of health, Social justice, Local Self-Government and Education of Govt. of Kerala are jointly working to draw up a uniform design for District Early Intervention Centres in the districts of the Kerala State. These centres will be made the hubs for disability management by providing facilities for anti-natal screening for disabilities, special education, occupational therapy & sensory integration therapy, speech therapy, physiotherapy and play therapy etc. for the disabled children besides counseling and guidance sessions for the parents.

EVENTS:

Art of Writing Research in Occupational Therapy:

Karnataka Branch of All India Occupational Therapy Association in collaboration with Academic council of Occupational Therapy organised COTE on 'Art of Writing Research in Occupational Therapy' on Aug.20, 2016 at Bangalore. Dr. Punita V Solanki, MOT, ACDR, Consultant Occupational therapist-N.M. Medical, Mumbai and a renowned researcher in occupational therapy was the resource person. This COTE was also arranged for the first time as Webinar for outstation participants. Dr. Lakshmanan S. was the Organising Convener.

Certificate Course on Sensory Processing Dysfunctions:

Nagpur Branch of AIOTA in collaboration with OT School and Centre of Government Medical College, Nagpur and Academic Council of OT has successfully organised 3 days certificate course from Sept.23-25, 2016 at Medical College, Nagpur. Dr. Anjali Joshi a renowned pediatric OT from Mumbai was the resource person.

Occupational Therapy Workshop on dealing with Special Children:

Amity Institute of Behavioral and Allied Sciences, Amity University, Lucknow in collaboration with UP Branch of AIOTA organised 7 days

OT Workshop on Dealing with Special Children from Sept 25 to Oct 1, 2016 which was attended by 70 UG, PG and research students from the fields of psychology, behavior sciences and others studying in the university. Dr. Anant Kumar (OT at Dr. R.M. L. Hospital, Lucknow & EC Member UPAIOTA) and Dr. Rosalin Nath (Sr. OT at Genius Lane, Lucknow) were the resource persons. President AIOTA & Convener UP Branch of AIOTA, Dr. Anil Srivastava was the Chief Guest of the closing function.

Outreach Program

TNMC, Mumbai

To commemorate the World Alzheimer's Month (September 2016), the Occupational Therapy Department of TN Medical College, Mumbai along with the NGO Silver Inning Foundation organized a number of events. Each of the staff and students were wearing the color purple, symbolizing with the color of Alzheimer's. The issues on Memory Loss and OT Strategies were discussed by Prof. Odette Gomes and MOT students with students of social work at Sophia College and SVT College, Mumbai on Sept.28 & 30, 2016. Street Play and Brain Gym Exercises were also performed by OT students of the college.

Workshops on World CP Day (Oct. 5):

Calicut, Kerala

To commemorate the World Cerebral Palsy Day, Kerala Branch of AIOTA in association with Community Disability Management and Rehabilitation Program (CDMRP), Department of Psychology, University of Calicut, Indian Speech and Hearing Association-Kerala State Branch, and Indian Association of Clinical Psychologist –Malabar Chapter conducted a Workshop and conference on 'Recent clinical trends in the management of children with Cerebral Palsy from 7th to 9th October 2016 at Calicut University campus. Dr. Sanjeev M. Pandankatti, HOD, Occupational Therapy at CMC Vellore was also one of the resource persons. He delivered talk on 'Recent Trends in Cerebral Palsy: OT Perspective and on Sensory Issues in Children with Cerebral Palsy'.

Anand, Gujarat

On the occasion of World CP Day (Oct.5), Smt. Kamlaben P. Patel Institute of Physiotherapy and Occupational Therapy, Anand, Gujarat, organized a workshop on 'Management of Cerebral Palsy'. Dr. Loganathan S., the senior Occupational Therapist from Jaya Rehabilitation Centre, Mandvi Bhuj was the resource person.

IACPCON 2016

Nov.25-27,2016, Bangalore

'The Brain Gene & Context Triad' is the theme of Indian Academy of Cerebral Palsy Conference 2016 at Bangalore.

Information

Dr. Asha Nayak

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OTICON 2017

Feb. 17-19, 2017, Jaipur

The 54th Annual National Conference of AIOTA (OTICON'2017) is being organized by Mahatma Gandhi Occupational Therapy College in collaboration with Rajasthan Branch of AIOTA at Mahatma Gandhi University of Medical Sciences & Technology, Jaipur from Feb.17-19, 2017. The theme of the conference is 'Occupational Therapy: Glories of Past and Challenges for the Future'. Contact Dr. Shashi Oberai, Chairperson Scientific Program on ssconf17@gmail.com for scientific entries for presentation and/or display.

Information

Dr. S.K. Meena, Org. Secretary

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Website: www.oticon2017.com

BOOKREVIEW

Beyond Stroke: Living Independently With One Arm

- Author: **Kate Ryan**
- Year of Publication: **2016**
- Place of Publication: **Australia**
- Publisher: **Ryan Publishing**
- Number of pages: **83**
- ISBN: **9781876498962** (paperback)

Independent Living Following Stroke is a huge challenge. As an occupational therapists we support and facilitate participation in our clients. This book is a practical guide to support participation in stroke survivors. The author, Kate Ryan is a stroke survivor herself. She has put in all her experience in solving the complex problems that stroke survivors face in meeting the challenges of daily living. The language is simple and easy to understand. The step-by-step description with pictures enhance understanding and serves as an illustrated guide or manual to performing the activities.

The sections are well organized. The section on personal care addresses the common challenges of dressing, grooming, bathing and combing. The section on using a nail file fingernails was particularly enlightening! The section "in the kitchen" provides useful tips. While most of it is not very relevant to the Indian context, aspects like cutting fruits and vegetables and washing up are useful. The sections on 'opening food containers', 'lifting large objects' and 'around the house' provide practical strategies to many IADL instrumental activities of daily living. The sections on 'children and babies' was again enlightening! The number of young adults with stroke is increasing, especially young women who develop stroke following complications in pregnancy or child birth. They often express a sense of helplessness at not being able to participate in the tasks inherent in the role of a mother. It also affects the mother and child bonding. This section is heartening and would instill a sense of hope and confidence in these young mothers. The last section on 'riding a bike' is inspiring!

Throughout the book, the author describes the level of challenge in the various activities, what is easily learnt, what may take more time. What is truly remarkable is that the author does not use many adaptive aids or assistive devices. In clinical practice, clients and caregivers often resist adaptive aids for many reasons, some of which include unaffordability, poor availability of the aid and maintenance or repair services, not comfortable as they will be observed as doing things 'differently' from others, etc.

The book is a very useful tool in a clinical setting, as it could be used in educational and ADL training sessions for both the stroke survivors and their family. The pictures make it easy for the client to understand. The strategies or suggestions given by another stroke survivor (in this case the book author) may be more easily accepted than from a 'normal person' such as the therapist or caregiver. Most importantly, if used in the acute or sub-acute phase of stroke, the book gives the client an idea of the road ahead, and also gives them a sense of hope that they can get back to their lives. It can be used as a self-help manual by the stroke survivor and their family. The book can also be used in the OT education program for practicum on ADL and IADL training for stroke survivors. Kudos to the author and the publisher for a valuable contribution to stroke rehabilitation!

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