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The Indian Journal of Occupational Therapy

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- ❖ The conference (OTICON) abstracts (of oral and poster: research papers only), will be published every year in IJOT - Issue 2: April-June.
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Editorial

The Indian Journal of Occupational Therapy: Expectations from Peer Reviewers

Punita V Solanki¹, Anil K Srivastava²

The Indian Journal of Occupational Therapy (IJOT) is a peer reviewed, national publication of the profession of occupational therapy, under the aegis of All India Occupational Therapists' Association (AIOTA), since its inception in 1955.

IJOT has employed, structured, double-blinded peer-review process for filtering the scientific submissions to equal the global standards. Currently, IJOT has 26 review board members from India (16 members) as well as from other countries (10 members). It aims to expand the review board by addition of few Indian/International members in some specialty areas such as onco-rehabilitation and cardiovascular-pulmonary-rehabilitation. It also aims to have "Guest Review Board" incorporating few international occupational therapy professionals of repute, those who are affiliated to the World Federation of Occupational Therapists' member countries. The IJOT policies of peer-review process are transparent to the members of AIOTA as well as other researchers, which is evident in public domain, on its web page: <http://aiota.org/Ijot/Prproc>.

IJOT editorial board expects that all the peer reviewers adhere to the latest version of ethical guidelines for peer reviewers laid down by the Committee on Publication Ethics¹ and IJOT's confidentiality agreement.²

Peer-review process is vital for both the editorial board as well as the authors. It enhances the quality of research publications, thereby placing the journal on international platform. Peer reviewers assist the editors, by virtue of their expertise and research experience, to assess the originality of the submissions, identify the errors, offer constructive criticism to the authors, and maintain confidentiality of the peer-review process, by objectively, fairly, and timely commenting in a structured peer review form sent to them by the editorial board.^{3,4}

Peer reviewers are also expected to assess, whether the research submission is in accordance with the equator network guidelines or not, based on the research study design. Nearly 360 reporting guidelines are available on the equator network website for reference and download, for all stakeholders (i.e.) editors, reviewers, and authors.⁵

Peer reviewers must convey to the editors their availability to review the sent manuscript, within the expected time frame, disclose the conflict of interest, if any, with the sent manuscript. They may opt to decline the review assignment if it does not comprise the research work within the purview of their expertise. Peer reviewers must exhibit and enhance their computer skills for serving the journal to grow into digital world and thereby, hasten the process of peer review, for timely publication.

The reviewer must offer the editor, an objective, constructive, and valuable expert opinion on whether the sent manuscript satisfies the journal's criteria and if it is suitable for publication. The reviewer must evaluate the content of the paper, to discern if it adds information to the existing literature. The reviewer should offer unbiased opinions and should not take any undue advantage of the research submissions. They may guide to further refine the manuscript, from a technical standpoint, if it contributes greatly to the current available knowledge, rather than rejecting it for the technical errors. However, if situation be, the reviewer may reject irrational or ambiguous research work.

Peer reviewers are editors' support system and are allies and guides to authors. Peer reviewer's priceless effort and time are indispensable. Nevertheless, peer reviewers are also benefited through this fruitful process, which enhances their knowledge, skills, and research aptitude. Peer-review process should be viewed by all the stakeholders (i.e.) editors, reviewers, and authors as mutually advantageous process, irrespective of effort and time involvement.

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REFERENCES

1. Hames I. COPE council. *Committee on Publication Ethics: Ethical Guidelines for Peer Reviewers*. Norfolk, UK. Available from: https://www.publicationethics.org/files/Peer%20review%20guidelines_0.pdf. [Last updated on 2013 Mar 01; Last cited on 2017 May 21].
2. Editorial Board: Peer Review Confidentiality Agreement India. *Indian J Occup Ther*. Available from: http://www.aiota.org/pdf/Peerreview/2.%20IJOT%20Confidentiality%20Agreement_Final_29.12.2016.pdf. [Last updated on 2016 Dec 01; Last cited on 2017 May 21].
3. Editorial Board: The Reviewers Guide India. *Indian J Occup Ther*. Available from: http://www.aiota.org/pdf/Peerreview/1. IJOT Reviewers Guide Form_Final_29.12.2016.pdf. [Last updated on 2016 Dec 01; Last cited 2017 May 21].
4. Dinis-Ribeiro M, Vakil N, Ponchon T. The Editors' Guide for Peer Review of Papers Submitted to Endoscopy. *Endoscopy* 2013;45:48-50.
5. *Equator Network Reporting Guidelines: Enhancing the Quality and Transparency of Health Research*. UK: NDORMS, University of Oxford. Available from: <http://www.equator-network.org/reporting-guidelines>. [Last cited on 2017 May 21].

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Teacher Perceptions of the Handwriting without Tears® Program in India: A Pilot Study

Denise K Donica¹, Casey J George², Katie M Albrecht³, Grace D Vang³

Abstract

Background: Little research has been done to explore the use of the Handwriting without Tears® (HWT) printing curriculum in countries outside of the United States.

Objectives: This study seeks to determine the perceptions of the HWT® program by teachers who have implemented it in their classrooms for one school year in New Delhi, India as compared to traditional methods of handwriting instruction.

Study Design: This study was a non-experimental, survey study comparing two handwriting instructional approaches (traditional and HWT).

Methods: Teachers from six different private schools in New Delhi, India, teaching preschool through grade 3, were asked to complete a questionnaire regarding handwriting instruction methods and preferences from two different approaches they have used (1) traditional survey about prior handwriting teaching methods and (2) HWT survey after implementing the HWT program.

Results: The participants in this study identified that they spent more time teaching handwriting using the HWT curriculum. Whole class instruction increased in comparison to small group instruction. In regards to the HWT program, teachers agreed that they preferred HWT over the methods previously used to teach English handwriting. Most teachers perceived that not only did their students enjoy the program but also that their students' handwriting legibility improved after implementing HWT.

Conclusion: The teachers who participated in this study had a positive experience and indicated favorable perceptions of the HWT program. This study supports the use of HWT with early primary teachers in New Delhi, and warrants further cross-cultural research.

Key Words: Child, Handwriting, India, Occupational Therapy, Writing

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Period of Study

From January, 2015 - May, 2016

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INTRODUCTION

Handwriting is one of the most important skills learned by school-aged children. The World Health Organization identified handwriting problems as a potential barrier to school participation in children.¹ Fine motor tasks, including handwriting, require between 31% and 60% of the school day for elementary-aged students, thus handwriting difficulties can have a significant negative impact on academic performance.² Outcomes of handwriting difficulties may include (1) less accessibility of written text to others due to poor legibility, (2) a negative influence on grades for written assignments, and (3) more difficulty on attention to task with writing assignments due to the need for greater concentration on letter formation.³ Proper instruction can improve writing performance in young writers as well as help them to develop handwriting fluency, which has been identified as having a positive influence on writing performance beyond the primary grades.³ Therefore, handwriting skill success is important for improved overall student success.

LITERATURE REVIEW

Need for Handwriting Instruction

A literature review was completed to determine the background of this current research topic. Surprisingly, with the critical role of handwriting in academic success, 88% of American teachers indicated they were not adequately instructed in college how to teach handwriting skills.³ Only 35% of teachers in a North Carolina-based handwriting survey indicated they had any handwriting instruction in college, while 95% believed that handwriting instruction should be a part of a teacher education curriculum.⁴ While 79% of school districts require that their schools teach handwriting, and 90% of teachers indicated that they instruct their students in handwriting, there is considerable variability in how handwriting instruction is delivered.³ Research has shown that on average, teachers indicated that they spent 70 min per week on handwriting; however, instructional time reported ranged anywhere from 1 h per day to 2 min per day, with most of the teachers spending less than 10 min per day on handwriting instruction.³

Consistency in the handwriting instruction approach has been found to play a key role in the successful learning of handwriting skills while variability found in handwriting instruction

practices did not lend itself to handwriting success.^{3,5} Differing types of handwriting instruction with inconsistent verbal cues and techniques from various teachers can make the motor planning component needed for effective handwriting performance more difficult, especially for students who are struggling.⁵ Handwriting success is linked to the amount of time spent learning handwriting in the classroom, with greater performance being correlated with more instructional time.³ However, handwriting difficulties are not limited to the United States.

Handwriting Success and Occupational Therapy

Teachers may request occupational therapy support for students struggling with handwriting skills. The top reason for a teacher referral to occupational therapy in the United States is that additional classroom assistance in handwriting was not leading to improvement.⁶ According to a survey of elementary school teachers, 18% had referred a student to occupational therapy for handwriting remediation during the previous school year.⁶ Occupational therapists play an important role in addressing crucial components of handwriting such as motor planning, eye-hand coordination, visuomotor integration, and in-hand manipulation.⁷ Other components of handwriting, such as finger and thumb motion, grasping patterns, and motor memory may be addressed by an occupational therapist looking to improve handwriting abilities as well.^{8,9} However, it is not uncommon for school-based occupational therapists to have a very large caseload, which limits the amount of time available to intervene with students to efficiently impact writing deficiencies.⁵

Handwriting without Tears® (HWT)

This study used the HWT program which utilizes a progressive developmental sequence while its multisensory approach allows children to learn about proper letter formation through touch, sound, sight, and movement.¹⁰ Children who have used HWT have shown significant improvements in handwriting quality components including form, size, spacing, and alignment in comparison to teacher-designed instruction.¹¹ These results were especially observed in lower performing students.

Teachers who implemented the HWT program in their classroom described the methods of instruction as child-friendly and easy to teach.¹² They also identified the terminology, prompts, modeling, and layout of how the letters were taught as positive factors of the HWT program. They found the prompts within the HWT curriculum to be easy to remember, easy to use, easy to understand, effective, and engaging. They also noted that they could use it as designed without modification.

Overall, teachers felt that using the HWT program improved their instructional practices and led to improved handwriting performance in their students.¹¹ They indicated that “[T]he method was great,” “I have had a positive experience,” and that they “enjoy[ed]” using the curriculum.¹² The teacher perceptions are an important consideration because teacher attitudes toward handwriting instruction show a significant correlation with handwriting fluency.³

Handwriting Skills in India

A review of the recent literature found little-published information available regarding handwriting instruction in India. In India, the National Policy on Education states that education should be child-centered or play-based to be a part of the Early Childhood Care and Education system.¹³ However, classrooms in India are very formal in their teaching approach. There are no realistic and feasible program standards in place, which may have an impact on how students are taught. This handwriting practices in India are very drill-based where students repetitively practice the mechanics of handwriting skills in ways that are not typically play-based.¹⁴ Handwriting instruction methods have been identified as lacking due to an overemphasis on rote memory, the lack of handwriting program development, and doing without learning.¹⁵

According to a systematic review, repetition/practice has been said to be the most successful type of handwriting intervention.¹⁶ However, drill-based handwriting instruction may lead to lower teacher satisfaction than the sensorimotor approach found in HWT. Brain research has also shown that rote memory is not as effective in being stored into long-term memory as other teaching methods.¹⁷

As the English language proficiency expands in India, the importance of writing as a means of communication also has increased. Dutta explains it in his paper that, “English in India is a symbol of people’s aspirations for quality in education and a fuller participation in national and international life.”¹⁸ He later expands on the fact that English is now being taught earlier in classrooms of India. It no longer is just a choice, but a standard of success in India’s educational system and has become a requirement for most educational programs.

Handwriting is a critical skill for students to develop. Proper handwriting has been shown to have a wide variety of positive impacts, including more effective communication, improved writing abilities, and increased scores on college admissions essays.¹⁹ However, there is little consistency with how handwriting is taught among teachers. HWT has been utilized by teachers and occupational therapists across the United States. American teachers who have implemented HWT in their classrooms have described largely positive experiences, significant improvements in their students’ handwriting, and more enjoyment in teaching handwriting.^{11,12} Teachers’ enjoyment of handwriting instruction correlates with how much time they devote to handwriting in their classroom, which impacts the handwriting results their students achieve.³ If teachers in India have similar experiences with the HWT program, they may find handwriting instruction more enjoyable and have the added benefit of consistency in terminology and techniques throughout the school, which Asher⁵ noted leads to easier handwriting mastery. Thus, the purpose of this study was to collect data about experiences teachers in India have had using traditional handwriting teaching methods compared to using the HWT program. This data were collected through teacher surveys and then used to make a preliminary assessment regarding the usefulness of HWT in private Indian primary

schools after a year of its implementation within a classroom context.

METHODS

Design

Using a non-experimental design, the researchers in this study assessed the perceptions of teachers from private schools in New Delhi, India, who implemented the HWT program in their classrooms during the 2015-2016 academic year. The actual frequency and duration of the use of the program were determined by the teacher and not tracked nor necessary to answer the research question above. This study is exploratory in nature, as this program has never been used as part of a curriculum in the Indian school system before. Since teacher perception was the focus of this study, a web-based survey was developed to most efficiently collect this data by researchers located outside of India. Teacher participants demonstrated consent by submitting their survey on completion.

Participants

This study was approved by the University and Medical Center Institutional Review Board. The participants in the initial traditional survey included 21 teachers, and the secondary HWT survey included 23 teachers that implemented the HWT program in their classrooms. The participants were a convenience sample of preschool through third-grade teachers from among six private schools in New Delhi who used the program at their schools and whose administrators had agreed to participate in this pilot program using HWT program with materials and training provided by the HWT company.

The inclusion criteria for the study indicated proficiency in speaking, reading and writing English. The participants must have taught preschool, kindergarten, first, second, or third grade at one of the participating schools. The participants must have also received HWT materials. They implemented the program during the academic school year 2015-2016. Those who do not meet the above criteria were excluded from the study.

Instrumentation

This study consisted of two web-based surveys that were specifically designed for this study. Therefore, no prior reliability and validity data existed for the surveys. To address reliability and validity, the surveys were reviewed by an Indian occupational therapist who was familiar with traditional handwriting instruction practices and the HWT program to identify recommendations for changes in survey questions due to cultural and language differences between researchers and participants. Updates to the survey were made based on this feedback before survey distribution to teachers.

Both surveys included questions about frequency of use, ease of use, degree of help needed for implementation, teacher perceptions of student performance, enjoyment, perceived parent satisfaction, and desire for future use. Teachers were

also asked about the size of groups they used for handwriting instruction. These groups included whole class (where the teacher instructed handwriting skills to everyone in the class at the same time), small group (where only a portion of the students within the class was instructed together), and individual instruction (where the teacher instructed only one student). In addition, basic demographic information including teacher's age, gender, and experience was collected. There were two differences between the surveys: (1) The wording guided the teacher as to which teaching approach to reflect on (traditional vs. HWT) when answering questions and (2) the HWT survey also included two questions with Likert-scale items to rate the HWT program, 13 questions about the frequency of use and satisfaction for each HWT item, and a question to select the five most useful items.

Procedure

Early in the academic year (July 17, 2015), an email with the survey link was sent to an administrator contact at each of the participating schools with a request to forward the link to eligible teachers. The teachers were instructed to complete this initial survey (traditional survey) about traditional handwriting instruction experience reflecting on their instruction of handwriting skills the year prior (without using HWT but instead using their traditional handwriting instructional methods). These traditional surveys were completed between July 21 and September 26, 2015.

Toward the end of the academic year (January 15, 2016), another email went to the administrator at each school to distribute to eligible teachers to complete the second HWT survey based on the 2015-2016 academic year when they used the HWT materials and program. These HWT surveys were completed between January 16 and March 4, 2016.

Data Analysis

Data collected were nominal and ordinal in nature. Therefore, descriptive measures were utilized for data analysis. The survey also included demographics questions.

RESULTS

Table 1 includes the demographics of the participants in both the traditional and HWT surveys. The traditional survey included 21 teacher responses, and the HWT survey included 23 teacher responses that met inclusion criteria. Table 2 identifies the comparison of teaching approaches using traditional methods and HWT. Before HWT implementation, most teachers spent 20-29 min teaching English handwriting to students each day ($n = 14$; 67%) while teachers using HWT most commonly taught handwriting 30-39 min per day ($n = 9$; 40% Figure 1).

After implementing the program in their classrooms for one school year, on the HWT survey teachers indicated: (1) 65% ($n = 15$) preferred the HWT program over other teaching methods they have used, (2) 52% ($n = 12$) would recommend the HWT program to other teachers, (3) 100% ($n = 23$) of the

Figure 1: How Much Time Spent Per Day Teaching Handwriting in the Classroom with Traditional Methods and Using Handwriting without Tears Methods

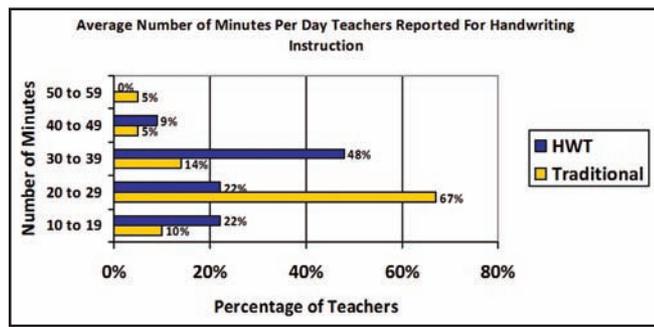


Table 1: Teacher Demographics

Teacher demographics	Traditional survey (n=21) n (%)	HWT survey (n=23) n (%)
Age (in years)	n = 20	
20-24	3 (15)	6 (26)
25-29	9 (45)	7 (30)
30-34	3 (15)	2 (9)
35-39	4 (20)	4 (17)
40-44	1 (5)	2 (9)
45-49	0 (0)	2 (9)
Gender		
Female	21 (100)	23 (100)
Male	0 (0)	0 (0)
Grade teaching		n=22
Preschool	10 (48)	8 (36)
Kindergarten	11 (52)	8 (36)
First	0 (0)	3 (14)
Second	0 (0)	2 (9)
Third	0 (0)	1 (4)
Teaching experience (in years)	n=19	
0-3	7 (37)	10 (43)
4-8	11 (58)	9 (39)
9-12	0 (0)	1 (4)
13-16	1 (5)	2 (9)
17-20	0 (0)	0 (0)
>20	0 (0)	1 (4)
Teacher training received	n=19	
College degree	13 (68)	13 (59)
Some college, no degree	0 (0)	3 (14)
Nursery teacher training	3 (16)	3 (14)
Other	3 (16)	3 (14)

HWT: Handwriting without Tears

Table 2: Teaching Approach Comparisons

Teaching approach	Traditional survey (n=21) n (%)	HWT survey (n=23) n (%)
Use of formal handwriting program		
Yes	11 (52)	22 (96)
No	10 (48)	1 (7)
Type of instruction	n=20	
Whole class	6 (30)	12 (52)
Small group	12 (60)	7 (30)
Individual	2 (10)	4 (17)

HWT: Handwriting without Tears

teachers found the HWT materials helpful, (4) 91% (n = 21) believed their students’ handwriting legibility improved, (5) 91% (n = 21) reported their students enjoyed the program, (6) 91% (n = 21) of the teachers enjoyed teaching the program, and (7) 91% (n = 21) of teachers were confident in teaching while using the program (Figure 2). In addition, teachers found the HWT materials to be useful, easy to use, and enjoyed by the students. Table 3 includes the ratings for each item individually. Strongly agree and agree responses have been combined under the heading “agree” and strongly disagree and disagree responses have been combined under the heading “disagree.” The teacher completed these ratings after being asked the frequency of use of the item; however, not every teacher who completed the frequency also did the ratings.

DISCUSSION

Overall, this study supported the use of HWT in private schools in India, per teachers’ perceptions. The teachers from six private schools in New Delhi, India agreed that HWT was easy to implement and they felt confident in teaching handwriting to their students using this program which is consistent with prior research findings regarding HWT.¹² When teachers were asked about each HWT item individually, the overwhelming majority of teachers agreed or strongly agreed all of the items were enjoyed by students, easy to use, and beneficial to the students which support prior research done in the United States.^{11,12} This is a very important part of this research because the study aimed to teach handwriting to Indian students in a way that was at least as effective as their current method but in a manner that was more fun and enjoyable to the students. Small group instruction was the most commonly used with traditional methods of writing instruction while whole class instruction was more common when using HWT. During the year that HWT was used, more students were given individual instruction as well which may have impacted their performance. One explanation for this change may be that the teachers felt more confident to teach concepts to the whole class more often which allowed more time for the individual instruction when needed by specific students.

In addition to the above benefits, the students’ handwriting legibility did improve over the course of the school year, as reported by the teachers. Therefore, HWT is perceived as fun for the students and effective in teaching English handwriting to the participating students in private Indian schools. Furthermore, teachers reported that HWT materials were useful, which is important because the multisensory HWT materials are what really sets this handwriting program apart from others. Finally, another important finding from this study is that most of the teachers preferred HWT over other methods previously used, which is promising for the possibility of HWT being used in future years at the Indian private schools.

CONCLUSION

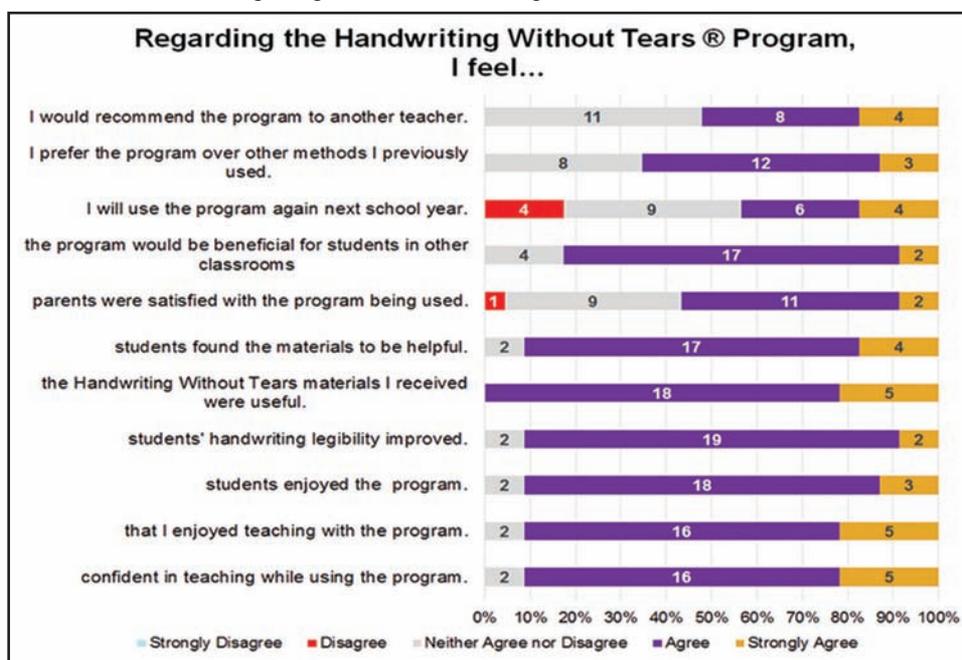
Results from this study support the use of the HWT curriculum in private Indian primary schools. Overall, the results from

Table 3: Teacher Use and Perceptions of Individual HWT Items n (%)

Item (N)	Frequency of use					Students enjoyed		Easy to implement		Beneficial to students	
	Never	Rarely	Sometimes	Often	All the time	Agree	Disagree	Agree	Disagree	Agree	Disagree
Wood pieces (22)	0 (0)	5 (23)	5 (23)	10 (45)	2 (9)	21 (100)	0 (0)	21 (100)	0 (0)	21 (100)	0 (0)
Slate Chalkboard (22)	0 (0)	1 (5)	2 (9)	15 (68)	4 (18)	22 (100)	0 (0)	22 (100)	0 (0)	22 (100)	0 (0)
Blackboard with Double Lines (22)	5 (23)	3 (14)	8 (36)	6 (27)	0 (0)	16 (100)	0 (0)	16 (100)	0 (0)	16 (100)	0 (0)
Sing, Sound, and Count with Me CD (21)	2 (10)	2 (10)	9 (43)	7 (33)	1 (5)	18 (95)	1 (5)	19 (100)	0 (0)	19 (100)	0 (0)
Rock, Rap, Tap and Learn CD (21)	5 (24)	2 (10)	5 (24)	9 (43)	0 (0)	15 (94)	1 (6)	15 (94)	1 (6)	15 (94)	1 (6)
Flip Crayons (22)	0 (0)	0 (0)	9 (41)	5 (23)	8 (36)	21 (95)	1 (5)	21 (95)	1 (5)	22 (100)	0 (0)
Little Pencils (22)	0 (0)	3 (14)	4 (18)	9 (41)	6 (27)	20 (90)	2 (10)	20 (90)	2 (10)	21 (95)	1 (5)
Little Sponges	1 (5)	1 (5)	4 (18)	12 (55)	4 (18)	21 (100)	0 (0)	21 (100)	0 (0)	21 (100)	0 (0)
Stamp and See Screen (21)	7 (33)	3 (14)	8 (38)	2 (10)	1 (5)	12 (92)	1 (8)	12 (92)	1 (8)	12 (92)	1 (8)
Roll-a-Dough (21)	5 (24)	2 (10)	6 (29)	5 (24)	3 (14)	15 (100)	0 (0)	15 (100)	0 (0)	15 (100)	0 (0)
My First School Book (Preschool) (20)	3 (15)	0 (0)	3 (15)	5 (25)	9 (45)	16 (94)	1 (6)	17 (100)	0 (0)	17 (100)	0 (0)
Letters and Numbers for Me (Kindergarten) (21)	2 (10)	2 (10)	7 (33)	6 (29)	4 (19)	18 (95)	1 (5)	18 (95)	1 (5)	19 (100)	0 (0)
My Printing Book (Grade 1) (19)	7 (37)	0 (0)	4 (21)	3 (16)	5 (26)	12 (100)	0 (0)	9 (75)	3 (25)	11 (92)	1 (8)

HWT: Handwriting without Tears

Figure 2: Teacher Agreement with Statements Regarding the use of Handwriting without Tears in Their Classrooms Recorded by Number of Teachers



the surveys indicated positive feedback from the participants regarding the use of the HWT program in the school setting. In addition, a majority of the teachers indicated that they would recommend the curriculum to other classrooms and believe in its effectiveness for other classrooms to use. Therefore, the results provide support in the usage of the HWT curriculum and would support further research HWT in India to teach handwriting skills to primary aged children in India.

Limitations and Future Research

This study was designed to obtain pilot information on how the HWT program can be incorporated in the Indian school

systems. The descriptive, closed-ended nature of this study did not allow participants to elaborate further about the reasoning for their answer selection. Further research could explore more detail about the perceptions through open-ended questionnaires or interviews.

There are limitations based on having the schools all located in one urban area, New Delhi, India. The schools are all private schools and volunteered to participate in the study. These factors may contribute to a lack of generalizability to other schools in India. Future research should be directed toward incorporating the program in a variety of schools including

public, private, urban, and rural to provide for greater diversity within the sample. Since the researchers were American and not Indian, miscommunications could have happened in this study due to a language barrier that may have impacted understanding.

Finally, to our knowledge, there is no previous research about handwriting in India, eliminating the ability to compare this study with other research efforts. However, this supports the need for this pilot study being completed. Future research about HWT in India should include a larger number of participants, randomly assigned to control or experimental groups, from a greater variety of settings.

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REFERENCES

- World Health Organization. International Checklist of Functioning, Disability, and Health. Geneva, Switzerland: World Health Organization. Available from: <http://www.who.int/classifications/icf/en>. [Last cited on 2016 Feb 21].
- McHale K, Cermak SA. Fine Motor Activities in Elementary School: Preliminary Findings and Provisional Implications for Children with Fine Motor Problems. *Am J Occup Ther* 1992;46:898-903.
- Graham S, Harris KR, Mason L, Fink-Chorzempa B, Moran S, Saddler B. How do Primary Grade Teachers Teach Handwriting? A National Survey. *Read Writ* 2008;21:49-69.
- Donica DK, Larson MH, Zinn AA. Survey of Handwriting Instruction Practices of Elementary Teachers and Educational Programs: Implications For Occupational Therapy. *Occup Ther Health Care* 2012;26:120-37.
- Asher AV. Handwriting Instruction in Elementary Schools. *Am J Occup Ther* 2006;60:461-71.
- Hammerschmidt SL, Sudsawad P. Teachers' Survey on Problems with Handwriting: Referral, Evaluation, and Outcomes. *Am J Occup Ther* 2004;58:185-92.
- Cornhill H, Case-Smith J. Factors that Relate to Good and Poor Handwriting. *Am J Occup Ther* 1996;50:732-9.
- Benbow M. *Principles and Practices of Teaching Handwriting*. 2nd ed. Ch. 15. St. Louis, MO: Mosby, Hand Function in the Child; 1995. p. 255-81.
- Levine MD, Gordon BN, Reed MS. *Developmental Variation and Learning Disorders*. Portland, OR: Educators Publishing Service; 1987.
- Olsen J. Handwriting without Tears®. Gaithersburg (MD): Handwriting without Tears; 2016. Available from: <http://www.hwtears.com/hwt>. [Last cited on 2015 Nov 25].
- Roberts GI, Derkach-Ferguson AF, Siever JE, Rose MS. An Examination of the Effectiveness of Handwriting without Tears Instruction. *Can J Occup Ther* 2014;81:102-13.
- Benson JD, Salls J, Perry C. A Pilot Study of Teachers' Perceptions of Two Handwriting Curricula: Handwriting without Tears and the Peterson Directed Handwriting Method. *J Occup Ther Sch Early Interv* 2010;3:319-30. Available from: <http://www.tandfonline.com/doi/abs/10.1080/19411243.2010.541741>. [Last cited on 2016 Jan 15].
- Hegde AV, Cassidy DJ. Teachers' Beliefs and Practices Regarding Developmentally Appropriate Practices: A Study Conducted in India. *Early Child Dev Care* 2009;179:837-7. Available from: <http://www.tandfonline.com/doi/abs/10.1080/03004430701536491>. [Last cited on 2015 Nov 25].
- Donica DK. Personal Communication; 2015.
- Choudhur AS. Of speaking, writing, and developing writing skills in English. *Lang India* 2013;13:27-32.
- Hoy MM, Egan MY, Feder KP. A Systematic Review of Interventions to Improve Handwriting. *Can J Occup Ther* 2011;78:13-25.
- Willis J. *Research-Based Strategies to Ignite Student Learning: Insights from a Neurologist and Classroom Teacher*. Alexandria (VA): Association for Supervision and Curriculum Development; 2006.
- Dutta U, Bala N. *Teaching of English at Primary Level in Government Schools; Synthesis Report*. New Delhi: Sarva Shiksha Abhiyan, National Council of Educational Research & Training; 2012.
- Marr D, Dimeo SB. Outcomes Associated with a Summer Handwriting Course for Elementary Students. *Am J Occup Ther* 2006;60:10-5.

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Social Cognition in Asperger's Syndrome: A Case Report

Aishwarya Swaminathan

Abstract

A 13-year-old adolescent with Asperger's syndrome, with average intellectual skills, and deficits in social cognition and skills, participated in the study. Individualized goals were set using functional behavior analysis, goal attainment scaling (GAS), and Canadian occupational performance measure (COPM). Social stories and video modeling were provided along with conventional occupational therapy (OT) for 8 weeks. A single-subject, multiple baselines across behaviors design was used. Visual graphical analysis showed decreased % frequency of inappropriate target behaviors. Three out of five goals achieved expected levels of outcome as per GAS. Clinically significant improvement in performance and satisfaction of occupational performance as per COPM was seen post intervention as scored by mother (M) and teacher (T). Thus, social skills training along with OT played an important role in the improvement of social cognition in an adolescent with Asperger's syndrome, which in turn led to better occupational performance.

Key Words: Asperger's Syndrome, Occupational Performance, Occupational Therapy, Social Skills Training, Social Stories, Video Modeling

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INTRODUCTION

Asperger's syndrome (AS), was one of the commonly diagnosed disorders under the autism spectrum disorders (ASD) as per Diagnostic and Statistical Manual of Mental Disorders 4th edition (DSM-IV) criteria. However, the most recent DSM-V has removed AS as a separate diagnosis. The best practice is to use the term ASD (Level 1, without accompanying intellectual or language impairment) for children with Asperger's like symptoms. These individuals exhibit deficits in the area of social cognition and social skills. Adolescence is a lifestage marked by rapid and potentially tumultuous transition for all children and can be particularly difficult for those with ASD.

Rationale of this Study

To study the role of occupational therapy (OT) along with social skills training (SST) in improving social skills, behaviors, and occupational performance in an adolescent.

Aims and Objectives

1. To find if OT along with SST will cause an increase in the percentage of appropriate social skills using multiple baseline analysis.
2. To evaluate the attainment of social behavioral goals, and change in occupational performance post-intervention, as determined by parent and teacher ratings using goal attainment scale (GAS) and Canadian occupational performance measure (COPM).

Study Design

A single case study using combined multiple baselines across behaviors design and AB design.

PATIENT INFORMATION

A 13-year-old adolescent boy Aditya (name changed) participated in this study. He had a current diagnosis of AS as per DSM-IV criteria.

ASSESSMENT AND CLINICAL FINDINGS

Target social skills identified using functional behavioral analysis were, non-verbal skills (NVS), inappropriate verbal skills (IVS), inappropriate personal space and touching (IPS and T), and group dynamics (GD) as per mother and teacher interview at week 0.

Goal Setting for Intervention

1. Behavioral goals were set for each of the target behaviors using GAS.
The level (0) of achievement of these goals will be rated, by mother (M) and teacher (T), if Aditya displays the following behaviors at home and school with a frequency of at least 50% of the times with or without verbal prompts.
- I. Subject will develop NVS in the form of giving eye contact, maintaining appropriate affect

(facial expressions), maintaining appropriate pitch and rate of speech. He will orient himself appropriately during conversations.

- II. Subject will display decreased IVS in the form of not commenting inappropriately and will stay on the topic, during conversations.
- III. Subject will be able to maintain personal space and will ask for permission to hug family at home. He will opt for shaking hands, waving with peer group instead of hugging. He will not touch himself inappropriately. He will take permission for private time for touching at home.
- IV. Subject will develop GD and AS in the form of talking directly to the peer group instead of using the therapist as a mediator, i.e. he will wait for his turn to talk.
- V. Subject will display overall improvement in social skills. Other levels of goal attainment were also accordingly set using GAS:
 - Very much more than expected outcome (2)
 - More than expected outcome (1)
 - Expected outcome (0)
 - Less than expected outcome (-1)
 - Very much less than expected outcome (-2).
- 2. As per the COPM the social skill dependent occupational performance areas (ADL, productivity, and leisure) were selected by the teacher, mother and were rated initially for the performance (P1) and satisfaction (S1) in these areas of socialization (S), sexual expression (SE), care for others (C), educational activities (E), play and leisure activities (PL).¹
- 3. Parent and teacher ratings were taken again post-intervention on GAS and COPM (P2, S2) at week 13.

INTERVENTION

After a 2 week baseline period intervention was provided as follows:

- 1. SST: Social stories and video modeling (Figure 1a and b).
- 2. OT: Individual and group sessions.

Social stories were designed as per Gray's recommendations,^{2,5} to address each of the target behaviors and were constructed using Microsoft Word and PowerPoint. Videos models were used from the Model Me© CD. Consistent with multiple baseline strategies, training was applied sequentially and cumulatively to the four target behaviors over the 8 week period. About 2 weeks of intervention were dedicated to each behavior. Intervention was provided by showing and reading the social story or showing video model before the OT sessions twice a week. OT (individual and group sessions) activities included obstacle courses, construction and board games, and role-playing games. Group sessions had two other boys

(attention deficit disorder 12 years, learning disability 11 years) along with Aditya.

Timeline is shown in Table 1.

Graph 1: Multiple Baseline Analysis. Baseline intervention follow-up. Individual (line graph) and generalization probes (scatter points) during baseline, intervention, and follow-up. A multiple baseline analysis of non-verbal skills (NVS), inappropriate verbal skills (IVS), inappropriate personal space and touching (IPS and T), group dynamics and assertiveness (GD and AS), overall social skills (overall SS)

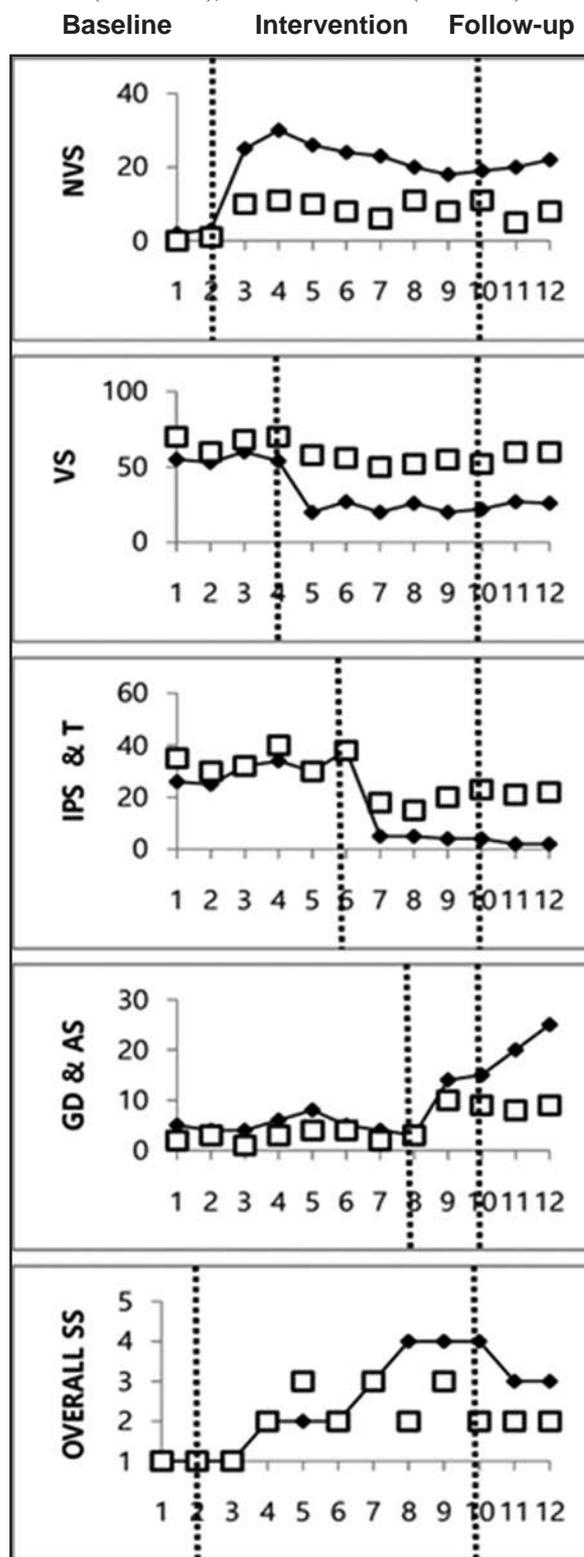


Table 1: Weekly Timeline

Week 0	Pre-intervention assessment and goal setting
Weeks 0-2	Baseline phase
Weeks 2-10	Intervention phase
Weeks 10-12	Follow-up phase
Week 13	Post-intervention assessment

FOLLOW-UP

During this phase, (2 weeks following intervention) no intervention was given, but prompts were given.

OUTCOMES

As per Graph 1 and Table 2: The participant displayed an increase of appropriate skills (NVS, and GD and AS) and decrease in inappropriate skills (IVS, IPS, and IT) in intervention phase as compared to baseline. Individual probes showed higher scores as compared to generalization probes. Four target skills and overall social skills remained improved following the withdrawal of the intervention during the 2 week follow-up period. The scores in follow-up phase were higher than baseline but lower than the intervention phase. As per Graph 2: All goals show positive outcomes. Teacher ratings are lower than mother ratings as per Table 3: Performance and satisfaction scores increase post-intervention in all five occupational performance areas. Post-intervention scores are clinically (>2) significant in ratings by mother. Teacher ratings are not significant.

DISCUSSION

Social Cognition and Skills (Graph 1 and Table 2)

The improvement in social skills in this report can be attributed to SST. Concurrent with this finding Sansoti *et al.* in their study combined intervention (SST and video modeling) to remediate social skills in individuals with AS.⁶

Table 2: Mean values of % of Intervals in Individual and Generalization Probes in All three Phases (Baseline, Intervention, and Follow-up) for Each of the Behavior

Target social skills/ behaviours	Baseline		Intervention		Follow-up	
	Ind	Gen	Ind	Gen	Ind	Gen
NVS	2.5	0.5	23.1	9.3	21	6.5
IVS	55.5	67	22.5	53.8	26.5	60
IPS and IT	30.8	34.1	4	19	2	21.5
GD and AS	4.8	2.8	14.5	9.5	22.5	8.5
Overall SS	1	1	2.5	2.1	3	2

NVS: Non-verbal skills, IVS: Inappropriate verbal skills, IPS, and T: Inappropriate personal space and touching, GD and AS: Group dynamics and assertiveness, Overall SS: Overall social skills, Ind: Individual; Gen: Generalization

Table 3: COPM Pre- and Post-intervention given by mother (M) and teacher (T)

COPM (M)	Socialization (S)	Sexual expression (SE)	Care of others (C)	Educational activities (E)	Play and leisure (PL)	Mean	Change in scores	Clinical significance
P1	4	4	4	4	4	4	2	Significant
P2	7	5	8	4	6	6		
S1	5	3	4	4	2	3.6	3.6	Significant
S2	8	7	7	7	7	7.2		
COPM (T)								
P1	4	3	3	3	3	3.2	0.8	Not significant
P2	4	5	3.2	4	4	4		
S1	3	3	4	3	5	3	1.6	Not significant
S2	4	5	4	4	6	4.6		

P1: Pre-intervention performance score, P2: Post-intervention performance score, S1: Pre-intervention satisfaction score, S2: Post-intervention satisfaction score, COPM: Canadian occupational performance measure

Generalization of the social skills as seen in group sessions can be attributed to (1) the SST presented to the participant before the group sessions (2) the prompts provided by the therapist, and (3) the opportunities for practice that was available in a group setting for the display of appropriate social skills. In line with this finding, Loudoun states that peer-mediated intervention uses peers to provide the individual with AS with cues and social support.⁷

Although the follow-up period was very short (2 weeks) the results show maintenance of skills even in the absence of intervention.

Social Behavior (Graph 2)

There is also some evidence to indicate that improving social skills can produce collateral decreases in and improved parent ratings of problem behavior.⁸ In this study ratings of social behavioral goal achievement by mother and teacher (M and T) as per GAS indicated that a positive change for all

Graph 2: Social Skills Training - (a)Social Stories and (b) Video modeling

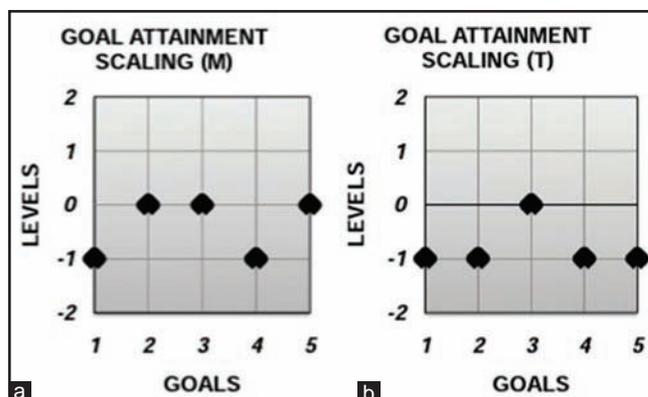
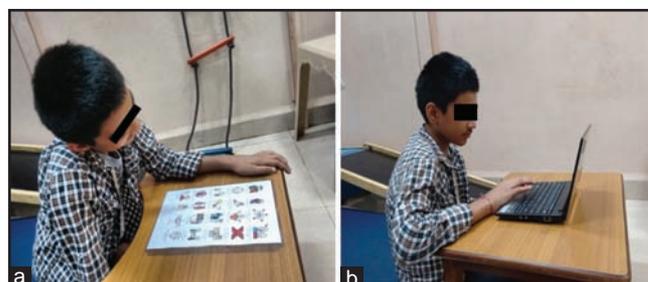


Figure 1: Social Skills Training (a.Social Stories and b. Video Modeling)



social behaviors occurred at home and school. However, the ratings of the teacher were lower than the rating of the parent. This variation in the results shows that the generalization of the learned social skills to home occurred better than the generalization to school.

Occupational Performance (Table 3)

The generalization of skills into social behaviors and occupational performance areas at home and school can be attributed to the SST and the better understanding and utilization of the learned skills on the part of the participant due to age, and the average IQ and better executive functions. More structured environment at home, and better opportunities to practice skills at home due to prompts from family members may have led to better results at home. School may not have had enough structured prompts/opportunities for practice of skills and controlling various factors at school was beyond the scope of the study. Although these findings give some insight into the possible abilities of generalization, the overall duration of the study was too short, and therefore results should be interpreted with caution.

In adolescence the requirement for socialization, friendships, and social acceptance increases. Bellini mentioned that subjects with ASD do indeed desire social involvement, however, they typically lack the necessary skills to interact effectively.⁹ In this study, the SST provided to the participant might have equipped him with the skills required for socialization.

One of the major concerns in the field of autism is the sexuality of adolescents since they tend to display sexual interests and a wide range of sexual behaviors.¹⁰ In this study participant's mother expressed that her son's frequent hugging behaviors, and touching his genitals really bothers her. Post-intervention she mentioned that he could now understand the perspective of others around regarding his engagement in sexual behaviors in public and this greatly helped in reducing his inappropriate behaviors at home.

Baron-Cohen in their study introduced the term of mind-blindness to describe individuals with deficits in theory of mind and hypothesized the notion that individuals with autism may not understand the point of view of other individuals'.¹¹ This creates difficulty within social situations because they give the appearance of being self-centered. In this study, SST may have helped the participant in perspective taking thus improved his caring for others.

Educational, play and leisure activities also showed improvement. In lines with this SST has been used in many studies to increase the performance of activities of daily

living, academic/vocational activities, on-task behavior,¹² and enhancing play behavior.¹³

Thus, SST (social stories and video modeling) along with OT played a role in the improvement of social skills, social behaviors in an adolescent with AS, which in turn led to better occupational performance. Since this is a single case study the results cannot be generalized, so a future implication could be to perform this kind of a study on a larger population for a longer duration so that the results can be better generalized.

Perspectives of Mother and Teacher

Both the mother and the teacher felt that Aditya learned appropriate social skills and this helped him perform better at home as well as school.

REFERENCES

1. Uniform Terminology For Occupational Therapy –Third Edition. American Occupational Therapy Association. *Am J Occup Ther* 1994;48:1047-54.
2. Gray C. Teaching children diagnosed with autism to “read” social situations. In: Quill K, editor. *Teaching Children with Autism: Strategies to Enhance Communication and Socialization*. Albany, NY: Delmar; 1995. p. 219-241.
3. Gray C. Social Stories 101. The Morning News. Michigan: Jenison Public Schools; 1998. Available from: <http://www.carolgraysocialstories.com/wp-content/uploads/2015/10/Summer-1998-ISSUE-and-WORKBOOK.pdf>. [Last cited on 2014 Jun 20].
4. Gray C. Social Stories. Overview. 2003. Available from: <http://www.carolgraysocialstories.com/social-stories/>. [Last cited on 2014 Jun 23].
5. Gray C, Garand J. Social stories: Improving Responses of Students with Autism with Accurate Social Information. *Focus Autistic Behav* 1993;8;1-10.
6. Sansosti FJ, Powell-Smith KA. Using Social Narratives to Improve the Social Behavior of Children with Asperger Syndrome. *J Posit Behav Interv* 2006;8(1):43-57.
7. Laundan J. Increasing Social Skills and Decreasing Anxiety in ASD. Unpublished Dissertation, Kent State University; 2008.
8. Lasater MW, Brady M. Effects of Video Self-modeling and Feedback on Task Fluency: A Home-based Intervention. *Educ Treat Child* 1995;18(4):389-407.
9. Bellini S. Social Skill Deficits and Anxiety in High Functioning Adolescents with Autism Spectrum Disorders. *Focus Autism Other Dev Disabl* 2004;19:78-86.
10. Ripoll SB. Using a Self-as-model Video Combined with Social Narratives to Help a Child with Asperger's Syndrome Understand Emotions. *Focus Autism Other Dev Disabl* 2007;22(2):100-6.
11. Baron-Cohen S, Leslie AM, Frith U. Does the Autistic Child have a “Theory of Mind?” *Cognition* 1985;21:37-46.
12. Coyle C, Cole P. A Videotaped Self-modeling and Self-monitoring Treatment Program to Decrease Off-task behaviour in Children with Autism. *J Intellect Dev Disabil* 2004;29(1):3-15.
13. Charlop-Christy MH, Daneshvar S. Using Video Modeling to Teach Perspective Taking to Children with Autism. *J Posit Behav Interv* 2003;5(1):12-21.

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Long-Term Management of Breast Cancer-Related Lymphedema: A Case Report

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Abstract

Lymphedema is a progressive condition. Long-term follow-ups is crucial in maintenance of complete decongestive therapy (CDT) results. The purpose of this case report is to describe the outcome of compliance with prescribed follow-ups visits and to highlight the role of occupational therapy examinations and interventions in relieving the early diagnosed arm lymphedema patient from cumbersome and labor intensive night bandaging. The patient was a 65-year-old female with left arm lymphedema, following breast cancer treatment. The arm lymphedema was assessed by measuring limb circumference with a plastic tape. Home program of maintenance phase CDT was prescribed. Follow-ups were advised for monitoring response and suggesting guidance with therapy. Relative percentage volume difference between the limbs was maintained at an average of -3.69% at 4th year. Early lymphedema diagnosis, patient's adherence to the prescribed follow-ups and therapist's guided home program of CDT can liberate the patient from night compression.

Key Words: Case Report, Compliance, Complete Decongestive Therapy, Follow-ups, Occupational Therapy

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INTRODUCTION

Breast cancer-related lymphedema (BCRL) is a progressive chronic disease and primarily results from disruption of the axillary bed and or nodal radiation. Left untreated lymphedema (LE) leads to functional impairment and psychological morbidity. Early detection is essential for its effective treatment.¹

Complete decongestive therapy (CDT) is recognized and recommended as the effective nonsurgical initial treatment for lymphedema.¹ Compression therapy is an important component of CDT which includes multi-layered lymphedema bandaging (MLLB) with short stretch bandages and compression sleeve. Compression bandaging is known to be cumbersome and exhaustive part of CDT.²

The long-term results of CDT (Phase II) are harder to determine. Patient's adherence to home-based CDT is crucial to maintenance of relief after initial therapeutic intervention for LE.³ Prolonged and regular follow-up play a major role in maintaining patient's motivation to adhere to the home program.⁴ Our experience suggests that follow-up assessment also gives therapist an opportunity to understand edema variations and provide appropriate guidance on lymphedema management.

There are limited reports concerning CDT response to slight/mild lymphedema. Study done by Hwang *et al.*⁵ on 32 patients with mild unilateral BCRL lymphedema (total 57 patients) treated with Phase I CDT for two weeks followed by maintenance phase, assessed for 24 months found no significant increase in mean percent excess volume of 11.4% ± 5.0% before CDT and 14.1% ± 10.6% at last follow-up measurements.

Study done by Bar Ad *et al.*⁶ examined the time course of BCRL of arm, showed that one- third of patients with mild and moderate LE at the time of diagnosis progressed to higher grades in first 5 years.

Study by Vignes *et al.*⁷ with twelve months follow-up of 537 secondary lymphedema patients (no mention of the stage of lymphedema), and the study by Hwang *et al.*⁵ on 32 patients with slight unilateral BCRL lymphedema reported them having three nights a week bandaging. Boris *et al.*⁸ from their 3 years follow-up data of 53 breast cancer-related Stage I and II arm lymphedema found adherence to a home program of 24 h compression garment was important for maintaining results.

As noted above, there are limited published studies mentioning about some relief from night bandaging, but we have not come across any published study which specifically reported complete relief from night compression for Stage II lymphedema of the arm.

With limited research supporting long-term positive results of CDT and complete withdrawal of night bandaging, the most cumbersome and time-consuming component of CDT,² the purpose of this case report is to describe the result of compliance with prescribed follow-ups and highlight

the effectiveness of occupational therapy assessments and interventions in relieving the patient with breast cancer-related arm lymphedema from burdensome night bandaging.

CASE DESCRIPTION

Patient's History

A 65-year-old right hand dominant, educated, working woman was referred to Occupational Therapy Department with the diagnosis of lymphedema of the left upper limb for lymphedema management from radiation oncology of our hospital on 4/9/10. As per medical records, she was diagnosed with Stage I breast cancer and underwent a lumpectomy in May 2010 with axillary dissection (ten nodes) in India. She was put on chemotherapy drugs for 5 years. She subsequently received whole breast radiation (33 treatments in 43 days) in the United States (US). The patient reported progressive swelling in her left upper limb, which got aggravated after air travel. She sought medical attention from her radiation oncologist in the US and was then referred to the physiotherapy department there. She was put on CDT. No medical records of her lymphedema management were available. Written consent from the patient was obtained for this case report.

CLINICAL FINDINGS

Past Medical History

The patient reported old fracture left elbow in childhood and was on chemotherapy drug Arimidex one mg OD.

Observation

Lymphedema of mild severity was noted with mild limb shape distortion at left distal forearm and wrist, observed left cubitus valgus due to old fall, there were no signs of infection, open areas, scratch marks or wounds. Palpation revealed pitting on wrist and distal forearm.

ASSESSMENT

Following examination findings were obtained during patient's first visit to Occupational therapy department.

Pain/Discomfort

On 10 cm visual analog scale (VAS) pain level was four cm during terminal ranges of left shoulder abduction and flexion and one cm during terminal extension.

Range of Motion (Active)

The left shoulder flexion and abduction ranges were terminally limited by 10 degrees and were painful. Left shoulder extension range was complete but painful. Strength of the left upper limb was not affected.

Girth Measurements

Bilateral limb girths were taken using a plastic tape measure at specific interval from wrist till axilla. Edema volume was

determined using the cylindrical method. Volume difference between affected and unaffected limb was 225.91 ml (7.8%).

Functional Activities

The patient did not report any functional limitation except for left shoulder pain while reaching for overhead objects and hence required assistance. She was able to wear blouse after making alteration in left sleeve.

Diagnosis

From medical history, observation and physical examination, the patient was diagnosed as Stage II mild secondary lymphedema of non-dominant upper limb with on-going CDT II from the past 1 month.

Prognosis

The patient was enthusiastic to attain her goals of decreasing edema, increasing mobility, returning to her pre-morbid activity level. Getting the night bandages off for this patient was an achievable goal considering the early diagnosis, early CDT intervention and patient's enthusiasm.

Occupational Therapy Treatment Plan

On first assessment, the patient had 7.8% excess limb volume in the affected limb (non-dominant) compared to her right limb (baseline measure). The non-dominant limb can have 8-9% lower volume than the dominant limb,⁹ hence the target volume reduction was up to 16-17% of the dominant limb.

TIME LINE

Patient followed the home program and was assessed almost every month for 4 years.

INTERVENTIONS

Patient was recommended continuation of maintenance phase of CDT and positioning. She was advised to continue with simple lymphatic drainage (SLD) utilizing the axilloaxillary and axilloinguinal collateral pathways once a day. She was suggested to apply MLLB on daily basis from the fingers through the axilla in evening preceded by SLD to decrease volume and tissue remodeling. During her initial visits to Occupational Therapy Department, she was taught MLLB. The home program also consisted of various therapeutic activities twice a day with compression on to aid in lymph flow. Positioning was emphasized.

FOLLOW-UP AND OUTCOMES

Total 44 follow-up assessments were done. Necessary alteration in the therapy was prescribed according to the assessment outcome on every follow-up. Important follow-ups with regard to assessment outcome and suggested therapeutic intervention are provided in Table 1. Pneumatic compression device was not prescribed as treatment outcome was reasonable. For patient, MLLB was the most cumbersome and time consuming.

Table 1: Description of Assessment Outcome and Suggested Therapeutic Interventions

Total number of follow-ups: 44
Total period: 4 years

Sr. No.	Follow-up No.	Period from first follow-up months	Period from previous follow-up months	Upper limb volume difference ml	RPVD %	Interpretation	Suggestion
1	Inception	-	-	225.91	7.81	Stage II mild LE after 4 weeks of Phase II CDT	Continuation of Phase II CDT
2	4	2	2	67.67	2.34	Fall in RPVD by 5.47% in 2-month period	One night weekly off in bandaging period
3	5	3	1	22.79	0.79	Slow fall in RPVD by 1.55%	One night weekly off in bandaging continued
4	6	4	1	-110.06	-3.81	Steep fall in RPVD by 4.60%	Two night freedom from weekly bandaging
5	7	5	1	-122.68	-4.42	Gradual fall in RPVD by 0.61%	Three nights off from bandaging per week
6	13	10	6	-147.86	-5.93	Gradually RPVD dipped by 2.02% in 6-month period	Bandaging reduced to four nights off to per week
7	14	11	1	-53.58	-2.15	Increase in RPVD by 3.78%	Due to non-compliance five nights off per week
8	15	12	1	-108.35	-4.35	Fall in RPVD by 2.20%	Six nights off from bandaging for next 7 months continued
9	21	19	7	-42.14	-1.69	Steady rise in RPVD by 2.66% in 7-month period	Every night bandaging reintroduced for 2 months
10	22	20	1	109.27	-4.38	Fall in RPVD	Every night bandaging reintroduced for 2 months continued
11	23	21	1	-138.65	-5.56	RPVD dipped by 3.87% in 2-month period	One night off from bandaging reintroduced and continued for next 5.5 months
12	29	27	6	-61.03	-2.45	Steady Rise in RPVD by 3.11% in 5.5 months period	Gradually complete withdrawal from weekly night bandaging reintroduced
13	35	35	8	-22.92	-0.92	Steady rise in RPVD by 1.53% in 8 months period	Continued complete withdrawal from weekly night bandaging
14	38	41	6	-96.14	-3.86	Fall in RPVD	Strengthening exercises introduced
15	44	48	13	-120.04	-4.82	Fall in RPVD by 3.90% in 1 year period	Continuation of CDT II without night bandaging and with strengthening exercises

Only important follow-ups with regard to assessment outcome and therapeutic interventions considered. Above interpretations are with reference to Graph 2. RPVD: Relative percentage volume difference, CDT: Complete decongestive therapy

The data were collected from medical records. Unaffected upper limb volume (dominant) is considered as the baseline measure to compare the volume changes in affected upper limb (non-dominant).

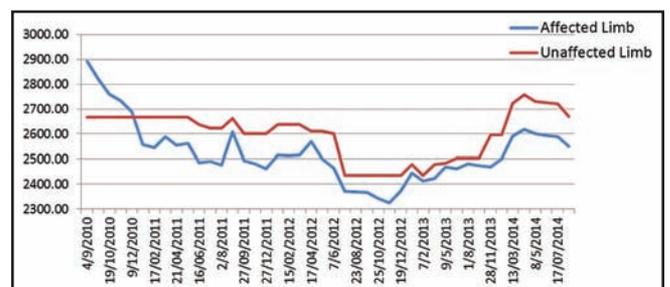
Observation: The affected left upper limb was visibly thinner as compared to the dominant right limb. There was no shape distortion except the cubitus valgus in the left limb.

Pain intensity level: Patient had no further complaints of pain and discomfort marking zero cm on the VAS.

Integumentary: According to Graph 1, the initial absolute affected limb volume was 2892.38 ml which was reduced to 2486.45 ml (by 405.93 ml) in first 9 months below the unaffected limb volume (2638.06 ml). The affected limb volume fluctuations were maintained and were comparable with unaffected limb volume changes for next 3 years 3 months.

Total volume was successfully reduced and maintained at an average of 11.05% (terminal 3-year 3-month period). In the

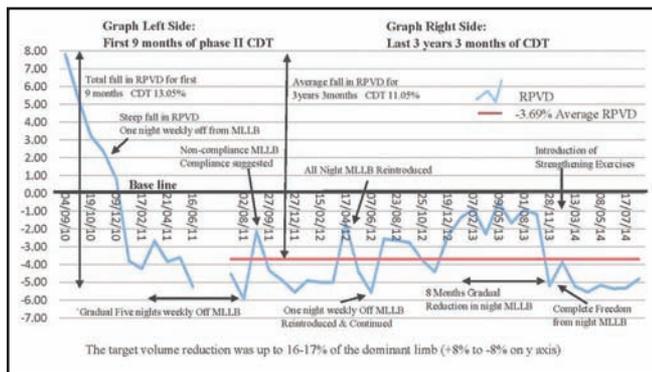
Graph 1: Absolute Volume Changes of Affected and Unaffected Upper Limbs for Total Period of 4 Years



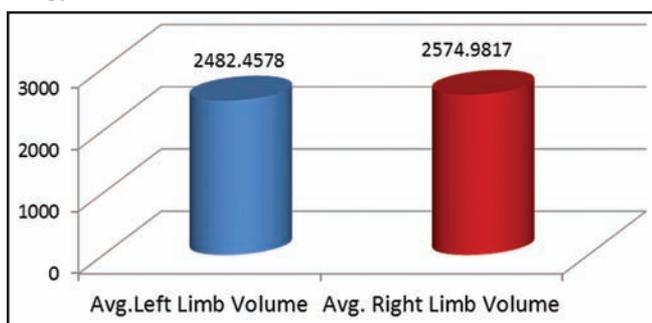
first 9 months, the relative limb volume reduced by 13.05%. Following the initial reduction, till the end of 4 years, the reduction was maintained at an average of 3.69% below the baseline (Graph 2).

The average volume difference between the affected and the unaffected limbs for terminal 3 years 3 months of CDT was 92.52 ml (3.69%) (Graph 3). No pitting was noted.

Graph 2: Relative Percentage Volume Difference of Affected and Unaffected Upper Limbs for Total Period of 4 Years



Graph 3: Average Volume Difference of Affected and Unaffected Upper Limbs for Final Period of 3 Years 3 Months of Complete Decongestive Therapy



Effect of alterations in frequency of night bandaging and introduction of strengthening exercises on affected limb volume, expressed as RPVD. Fall in RPVD suggest decrease in edema and rise suggest increase in edema.

Graph 3 shows the average volume of the affected and unaffected upper limbs over 4 years. The average difference is 92.52 ml that makes to 3.69% volume difference between them.

Range of motion: Left shoulder flexion and abduction ranges were painless and complete within three months of treatment.

Girth measurements/Volume calculation:

Cylindrical method for volume calculation: $Volume = \sum (Girth)^2 / \pi$

Relative percentage volume difference: $RPVD = \frac{(V_a - V_u)}{V_u} \times 100$

V_a : Volume of unaffected upper limb (non-dominant)

V_u : Volume of unaffected upper limb (dominant)

Functional activities: At her sixth follow-up patient could reach overhead objects without pain and discomfort and was independently managing household chores and office work. Alterations in left arm sleeve of her clothes were no more required.

DISCUSSION

This case report of patient with Stage II breast cancer-related secondary lymphedema highlights the importance

of early diagnosis of lymphedema, timely introduction of CDT intervention, regular and prolonged follow-up visits for lymphedema assessment and therapist’s prescription of necessary CDT alterations, in effectively liberating patient from labor intensive and burdensome night bandaging.

Early diagnosis in lymphedema is vital to effective treatment.¹ In this case report, the patient was detected with lymphedema early and began with early management. The average relative percentage volume difference (RPVD) between the non-dominant (affected) and dominant (unaffected) limb was maintained at -3.69% which is in accordance with the findings from various studies.^{5,9}

The gradual alterations in frequency of night bandaging schedule combined with good compliance with therapy lead to the complete withdrawal from night compression at the beginning of the past year of this case-report. Several studies related to management of lymphedema have shown that adherence to home program⁷ in maintenance phase reduce and maintain results.⁸ Patient in this case report was non-compliant to treatment on two occasions due to travel and urinary infection, which was reflected as rise in RPVD.

Regular and prolonged follow-ups insisted by the therapist seems to have played a significant role in maintaining patient’s motivation to adhere to the home program.⁴ Patient here was assessed 44 times in 48 months of her CDT management with Occupational Therapy Department. Apart from upholding patient’s enthusiasm to observe the home based CDT, the prescribed follow-ups helped the therapist to monitor and understand the edema fluctuations better and provide adequate and well-timed guidance thus leading to complete withdrawal from night bandaging. Follow-up assessment helped the therapist to introduce gradual relaxation in night bandaging, when it revealed fall in edema volume and to reintroduce bandaging on observing rise in volume. Introduction of bandaging or maintenance of bandaging helped to control the surge in edema especially on two occasions of non-compliance. Introduction of gradual relaxation in night bandaging caused RPVD fluctuations (from -5.93% to -0.50%) thus further emphasizing on continuous monitoring of edema volume. As these relaxation induced, volume fluctuations were maintained below the baseline, and the period of 3 years was utilized in monitoring and controlling edema volume (matching with the non-affected limb volume in safe zone) complete withdrawal of bandaging was considered and strengthening activities/exercises were introduced. Strengthening exercises caused decrease in edema, study done by Johansson *et al.*¹⁰ support the findings.

MLLB is the most effective but cumbersome and time-consuming component of CDT,² similarly, patient in this case report found bandaging much burdensome and disliked it. Therapist’s insistence of frequent and prolong follow-up assessment and patients compliance to the same benefited her with complete relief from night bandaging.

Study done by Hwang *et al.* on 32 patients with unilateral BCRL slight lymphedema (57 total) showed an increase in mean percent excess volume although it was non-significant (11.4% ±

5.0% before CDT and 14.1% \pm 10.6% at last follow-up). They reported to have taken only six follow-up assessments over 24 months (pre-CDT, post-CDT, at 3, 6, 12 and 24 months). Frequent follow-up measurements taken in our case seems to have helped in establishing better control on lymphedema.

Unclogging of lymphatic and formation of subdermal fluid channels¹ with early and consistent CDT must have had maintained results with compression garment, positioning, therapeutic activities and SLD.

The limitations in this case report were that it required assessment of “quality of life measure,” objective functional assessment, patient’s satisfaction with regards to relief from night bandaging and daily log on home program supporting compliance with home based therapy.

Lymphedema is a major consequence of breast cancer treatment. Early diagnosis and compliance with prescribed follow-ups can help the patient with long-term maintenance of lymphedema results. Follow-up assessments help the therapist to effectively guide the patient with the therapy and may even help to liberate the patient from multi-layer compression bandaging, the most cumbersome component of CDT. Supervised strengthening exercises, especially in lymphedema management, should be considered. Future controlled studies are needed to assess the effectiveness of compliance to prescribed follow-ups in relieving early diagnosed lymphedema patients from night compression.

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REFERENCES

1. NLN Medical Advisory Committee. Position Statement of the National Lymphedema Network, TOPIC: The Diagnosis and Treatment of Lymphedema. Available from: <http://www.lymphnet.org/pdfDocs/nlntreatment.pdf>. [Last updated on 2011 Nov 13].
2. Love S. The Boris *et al* Article Reviewed (Commentary). *Oncology* 1994;8:109.
3. Johnstone PA, Hawkins K, Hood S. Role of Patient Adherence in Maintenance of Results after Manipulative Therapy for Lymphedema. *J Soc Integr Oncol* 2006;4:125-9.
4. Arrault M, Vignes S. Management of Lymphedema of the Upper Extremity after Treatment of Breast Cancer. *Bull Cancer* 2007;94:669-74.
5. Hwang JM, Hwang JH, Kim TW, Lee SY, Chang HJ, Chu IH. Long-term Effects of Complex Decongestive Therapy in Breast Cancer Patients with Arm Lymphedema after Axillary Dissection. *Ann Rehabil Med* 2013;37:690-7.
6. Bar Ad V, Dutta PR, Solin LJ, Hwang WT, Tan KS, Both S, *et al*. Time-course of Arm Lymphedema and Potential Risk Factors for Progression of Lymphedema after Breast Conservation Treatment for Early Stage Breast Cancer. *Breast J* 2012;18:219-25.
7. Vignes S, Porcher R, Arrault M, Dupuy A. Long-term Management of Breast cancer-related Lymphedema after Intensive Decongestive Physiotherapy. *Breast Cancer Res Treat* 2007;101:285-90.
8. Boris M, Weindorf S, Lasinkski S. Persistence of Lymphedema Reduction after Noninvasive Complex Lymphedema Therapy. *Oncology (Williston Park)* 1997;11:99-109.
9. Lymphoedema Framework. *Best Practice Guidelines for the Management of Lymphedema, International Consensus*. Vol. 10. London, UK: Medical Education Partnership Ltd.; 2006.
10. Johansson K, Tibe K, Weibull A, Newton RU. Low Intensity Resistance Exercise for Breast Cancer Patients with Arm Lymphedema with or without Compression Sleeves. *Lymphol* 2005;38:167-80.

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Special Annotation

Documentation of Research Work: Publishing Conference Abstracts in Indian Journal of Occupational Therapy

Anil K Srivastava¹, Punita V Solanki², Shashi Oberai³, S Lakshmanan⁴

All India Occupational Therapists' Association (AIOTA) has been organizing national conferences (OTICON), annually, which offers unique opportunities to occupational therapists from India and overseas, to express their innovative research work in the areas of academics and clinical practice. Thereby facilitating, sharing of research ideas with fellow colleagues. The purpose is to blossom research culture in India, presently and in the near future.¹

Every year, the AIOTA conference (OTICON), has a "theme" to showcase research work. It attracts national as well as international participation, which provides an important channel for exchange of information between researchers. Thereby, influencing the health delivery, welfare and education with the development of distinction within the profession in India. The success of the conference not only depends on being responsive to the professional needs and issues but also active participation of the members is the key to positive outcome.¹

OTICON includes presentations of research work in oral, poster/e-poster, and scientific exhibit formats. These presentations include submissions of abstracts, extended abstracts (abstracts with more detailed results and discussion than abstracts, illustrations, and references: A brief paper)², and conference proceedings (full-text papers), which gets peer-reviewed and screened by the functioning of the scientific committee. These abstracts are published every year in the conference souvenir. However, these souvenirs are neither indexed nor are these available easily on the public domain in digital form. Thereby keeping the information of these research work in the gray literature, with less access to all the researchers, academicians, and clinicians from India and abroad.

The Indian Journal of Occupational Therapy (IJOT), a peer-reviewed, national journal publication, under the aegis of AIOTA, has been publishing original research, systematic reviews, narrative reviews, case reports, editorials, letter to the editor, and book reviews, since the past many years. Year 2017 will be the landmark for the journal to publish "conference abstracts" every year in Issue 2. The purpose to do so is manifold.

First, Issue 2 of IJOT will become a repository, listing the number of research work in India, even though, not all currently. However, it will encourage all the researchers in India to come forward and present their research work in OTICON, thereby getting listed in an indexed library source (i.e.) IJOT.

Second, the brief information of every research work in the form of an abstract or extended abstract will be a documentation and proof that so and so research work was done by the said researcher in India. Hence, giving due credit to the pilot researcher.

Third, it will encourage all researchers in India, to fruitfully utilize their valuable time, efforts, and knowledge, to fine tune their research work documentation in a consistent and scientific manner. Thereby, improving their research, writing skills, and aptitude.

Fourth, the important statistical data included in the results of landmark studies' abstracts, may be collated with other published literature systematically, to generate new evidence though systematic literature review and meta-analysis, especially in the fields where the research questions remain unanswered, where there is an unmet need and where novel therapies have emerged in the market to be implemented soon in clinical practice. It will close the time gap till this research work is published in full text.

Fifth, it will be like an inspiration to amateur researchers and postgraduate students to have their research titles and abstracts listed in the indexed publication, thereby encouraging them to further explore their research skills.

Although conference abstracts or extended conference abstracts as submitted in poster/e-poster form, cannot be considered technically as full-text publications, it will pave a path in Indian research history, to have it documented and be an authentic and indexed source of information about the said research work done on Indian population.

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REFERENCES

1. AIOTA Conference. India. Available from: <http://www.aiota.org/COTE/> Conference. [Last updated on 2016; Last cited on 2017 May 28].
2. Schultz DM. The abstract and extended abstract. In: Schultz DM, editor. *Eloquent Science: A Practice Guide to Becoming a Better Writer, Speaker and Atmospheric Scientist. Part III*. 1st ed. Ch. 23. Boston: American Meteorological Society, Springer Link; 2009. p. 259-26.

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54th Annual National Conference of AIOTA (OTICON'2017) Oral and ePoster Research Presentation Abstracts

Oral Presentation

Category: KEM Youth Talent Trophy
Effectiveness of Modified Constraint Induced Movement Therapy-bimanual Intensive Therapy in Improving Upper Extremity Function in Children with Obstetric Brachial Plexus Injury

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Background: Obstetric brachial plexus injury (OBPI) causes partial or total paralysis of the upper limb because of trauma to brachial plexus at birth. Development disregard is likely to occur as sequelae of OBPI in infants and may contribute to the failure to develop functional use of affected extremity. Constraint induced movement therapy (CIMT) is an increasingly popular treatment approach used to overcome development disregard but without a transfer package the unilateral gains made through CIMT is not transferred to bilateral activities of daily life and play. This affects the functional independence of children as they require use of both hands in most of the activities. This study aims at finding the effectiveness of modified CIMT-bimanual intensive therapy (mCIMT-BIT) in improving upper extremity function in children with OBPI. **Study Design:** Pre-test - post-test control group. **Methodology:** 30 children with OBPI aged 6-24 months selected for study were randomly assigned to experimental and control group. Experimental group received 60 h of mCIMT and 20 of BIT. Control group was given conventional therapy and splinting. Active movement scale was used as an outcome measure. **Result:** Statistical analysis showed that there was significant improvement in all components of upper extremity measured with active movement scale. **Conclusion:** Study concluded that mCIMT-BIT intervention is effective in improving extremity functions. Increased functional use of hand during bilateral activities of play and other activities was also seen in children after the intervention.

Key Words: Bimanual Intensive Therapy, Development Disregard, Modified Constraint Induced Movement Therapy, Obstetric Brachial Plexus Injury

Category: KEM Youth Talent Trophy
Understanding Collaborations between Occupational Therapists and Teachers in School Based Settings: A Scoping Review

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Background: School based occupational therapists are an important part of the educational teams as they support a child's participation in the necessary classroom and school activities. For this they need to collaborate with the educators as they are the primary support network in schools. Collaboration with teachers can help occupational therapists to identify problems, the expectations that the school staff have from children and to develop an efficient service delivery model either with direct intervention or on a consultation

basis. **Aim:** Since collaboration with educators is important for an effective service delivery there is a need to understand the extent of existing collaboration between occupational therapists and teachers in schools. **Study Design:** Scoping review. **Method:** To understand the available literature over the last two decades on collaboration between therapists and teachers, a scoping review of journals including occupational therapy and education related journals was conducted, using a combination of internet-mediated and manual methods. The data was analyzed using charting techniques. **Results:** Both quantitative and qualitative studies have been conducted to study collaborations. The results suggest that multiple collaboration practices are employed but the results remain inconclusive about how collaborations can be developed and sustained. Collaborations are influenced by personal, cultural factors and the expectations of the school setting in which the occupational therapists work. **Conclusion:** The available data discusses the interventions that practitioners perform within classrooms but remain limited in describing the collaboration practices between occupational therapists and teachers as it varies across contexts.

Key Words: Collaborative Practices, Educators, Inclusive Education, Occupational Therapy, School Based Occupational Therapy

Category: KEM Youth Talent Trophy
Trends in Indian Occupational Therapy Practices for Handwriting: A Scoping Review

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Background: Handwriting is an essential skill for elementary-aged students and one of the most challenging skills to acquire. Prevalence of children with handwriting difficulties has been estimated to range from 10% to 30% and these difficulties often interfere with a child's academic performance. According to available literature, handwriting difficulties account for the majority of referrals for school based occupational therapy intervention. The current research reviews Indian occupational therapy practice over the last two decades. **Aim:** To understand the practice context for management of handwriting difficulties in the Indian occupational therapy scenario. **Method:** A scoping review of articles about managing handwriting difficulties amongst Indian children by occupational therapists was undertaken. The review was limited to the last two decades to identify the trends in current practice. The methods used for this literature search included both online and manual searches. The articles identified were grouped according to their relevance, methods used, and management provided. **Results:** A preliminary analysis of data reveals that very few studies have been conducted on handwriting by Indian authors. The clear trend has been towards a focus on diverse forms of interventions followed by occupational therapists including specific ones such as cognitive, narrative etc. **Conclusion:** Though handwriting interventions are a popular practice amongst occupational therapists, not much research data is available about the exact practices used but Indian occupational therapists or about their efficacy of these practices.

Key Words: Handwriting Intervention, Handwriting in Indian Context, Handwriting in Children

Category: KEM Youth Talent Trophy
Acceptance of Autism Spectrum Disorder in Highly Educated versus Less Educated Parents: A Retrospective Observational Comparative Study

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Objective: This study was undertaken to investigate the acceptance behavior of highly educated parents' versus comparatively less educated parents of children diagnosed with autism spectrum disorder (ASD) in the chronological age group of 3-5 years. **Methodology:** 79 children between 3 and 5 years who were diagnosed with mild - moderate ASD referred by common referral were investigated with Gilliam autism rating scale 2. Out of them, 24 parents were selected in the highly educated parents list (both above graduation) and 18 parents were selected in the comparatively less educated parents list (both below graduation) with the common socio-economic strata, residing in the urban area. We made 2 groups of 15 parents each with Group A (highly educated parents) and Group B (less educated parents). In two groups of parents, scores by parents were compared to an average score by health professional's panel which included 1 psychologist, 1 occupational therapist and 1 speech therapist (after 10 sessions). **Result:** Autism index derived by parents in Group A was much lesser than the health professional's panel average index as compared to Group B. Hence, it's been observed that parents in Group A were more rational in describing their child's behavior and showed denial in identifying the symptoms of ASD ($P < 0.1$). **Conclusion:** Acceptance and coping of ASD was better in less educated parents as compared to highly educated parents during the crucial early developmental phase of children diagnosed with ASD.

Key Words: ASD, Parental acceptance, Autism Index

Category: KEM Youth Talent Trophy
An Observational Study to Understand Impulsivity and Hyperactivity Traits in the Normally Developing Children Who Were Addicted to Doraemon Cartoon Series

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Objective: Objective of the study was to improve the quality of therapy process by understanding specific inputs coming from the environment, children's exploration, their preferences and reduce the stimulation of negative preferences and in turn facilitate development. **Methodology:** 40 children between the age group 4-8 years reported with recent (since 6 months) attention deficit hyperactivity disorder (ADHD) like features. On questionnaire of likes and dislikes it was found that 30 children showed common choice of watching Doraemon. A sample of 22 children was chosen through inclusion criteria of recent raise in impulsivity and hyperactivity but not diagnosed ADHD on ADHD test (ADHD-T) these children were tested on the impulsivity and hyperactivity subtests of ADHD-T. They were then asked to stop watching Doraemon completely for 8 weeks without any other change in lifestyle. On follow up after 8 weeks ADHD-T subtests were repeated. **Results:** Out of 22, 18 children did show reduced scores in impulsivity and hyperactivity on ADHD-T subtests with a difference of $P = 0.02$ and $P = 0.02$ respectively. **Conclusion:** Content of Doraemon points towards unhealthy factors like loudness, being constantly on the go, getting excited easily, talkativeness, inability to play quietly, blurting out, intruding on others, difficulty waiting etc. which in turn increase the ADHD-T scores. Children being good imitators start behaving in the same manner.

Key Words: Attention Deficit Hyperactivity Disorder Test, Attention Deficit Hyperactivity Disorder, Cartoon, Doraemon, Effects

Category: Kailash Merchant Trophy
Mirror Illusion for Sensori-Motor Training In Stroke: A Randomized Controlled Trial

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Background: Stroke survivors usually demonstrate upper extremity motor deficits. Up to 80% of stroke subjects demonstrate somato-sensory impairment. The deficits hamper the motor recovery and thus the quality of life. Illusion through activity based mirror therapy (MT) may enhance both motor and sensory impairments.

Objective: To determine the effect of activity based MT on motor and sensory recovery in stroke. **Design:** Randomized controlled trial. **Methods:** Setting - Occupational Therapy Department of Rehabilitation Institute. **Outcome Measures:** Fugl Meyer assessment-upper extremity (FMA-UE), Semmes Weinstein monofilament, two point discrimination, touch perception and localization and stereognosis on 30 testing areas mapped of bilateral hands. **Intervention:** Mirror box is placed along the mid-sagittal plane between the two limbs, and the subject performed the motor task and also perceived the sensory information (various textures, size and shape) on the less affected hand. A mirror illusion for motor and sensory perception was created for the affected limb. **Results:** Subjects who had no sensation, improved to tactile perception/localization (Semmes-Monofilament score 0-4.93, $P < 0.05$) and functional stereognosis (90% correct response). The mirror group exhibited highly significant improvement on mean scores of FMA-UE ($P < 0.001$) at post assessment in comparison to the control group. **Conclusion:** MT is effective in enhancing motor as well as sensory recovery of the upper extremity. The technique is useful especially for the patient with no motor or sensory ability. MT using functional tasks may be considered as a potential method for stroke rehabilitation.

Key Words: Mirror Therapy, Motor, Paresis, Sensory, Stroke

Category: Kailash Merchant Trophy
Task and Context Specific Dual Tasking and its Impact on Fall and Functional Performance in Parkinson's Disease: A 1 Year Follow-up Study

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Background: Fall is the most disabling feature in people with Parkinson's disease (PD) and fall related injuries can be associated with immobility and reduced quality of life. Impairment in the ability to perform dual task while walking (DT) are associated with an increased risk of falling, diminished mobility and increased dependency. Participation in the work, family, community and social activities were limited due to difficulties in balancing, walking and risk of falling. The associated burden of disease arising from falls and immobility can impact adversely on individuals, their families and society. **Objective:** To investigate the impact of individualized task and context specific DT training on falling and functional performance in patients with PD. **Study Design:** Pre-test - post-test experimental design. **Methods:** 68 subjects diagnosed with idiopathic PD were conveniently allocated into two groups in a pre-test and post-test experimental study. Fall efficacy and functional performance were measure by Tinetti fall efficacy scale and Berg balance scale (BBS) respectively before training and after training. Each subject in the

experimental group was assigned to perform several motor tasks while walking in community like home, streets, mall, etc. for 3 days per week for 8 weeks. Subjects in the control group received balance training in the clinical settings for same duration. Follow up data were collected for the outcome measures 1 year after the implementation of training program. **Results:** A total of 59 subjects (87%) completed the study. Both the groups showed significant improvement for both Tinetti fall efficacy and BBS scores, whereas experimental group showed a significant difference in the improvement for both outcome measures. There was no significant change in both the scores between 2 and 12 months for both groups. **Conclusion:** This task- and context-specific DT training program reduced the risk of falling and improved functional mobility and the changes were retained even after 1 year after training.

Key Words: Balance, Dual Tasking, Fall, Functional Performance, Parkinson's Disease, Task Specific Training

Category: Kailash Merchant Trophy
The Effect of Cross-transfer of a Supination and Pronation Task in Adults with Hemiplegia on Skill Generalization: A Pilot Study

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Background: Role of occupational therapists in stroke rehabilitation aims at optimizing function in occupational performance tasks such as the client's ability to take part in activities of daily living. The effectiveness of cross transfer and learned activities across the limbs has been found in various studies on normal as well as neurological dysfunctional population. The effect of cross transfer on skill generalization found effective on normal population (Ganesh Kumar *et al.* 2006) but no studies have shown generalization of cross transfer training in neurologically dysfunctional population. The purpose of this study is to investigate the ability to generalize motor skills learned through cross transfer in adults with hemiplegia. **Objective:** In this study, the effect of cross-transfer of a supination and pronation task (playing card turning) and the ability to generalize the skill to near (papad turning), intermediate (page turning), far (kerchief folding), very far (squeezing cloth) transfer tasks were examined in adults with hemiplegia. **Study Design:** This was a non-randomized controlled trial cohort quantitative study. A longitudinal study to compare of means of two independent group and compare of two means of the same group (pre and post-test). This study was conducted on stroke population of Chennai. **Method:** 11 adults with hemiplegia (mean age = 52.18: standard deviation = 9.97) recruited for this study were trained in card turning task (unaffected side). Before training they underwent pre-test on card, papad and page turning tasks, kerchief folding and squeezing the cloth task (untrained extremity). After 6 day training (320 repetitions with card turning task), post-test-1 (acquisition test) was conducted on all five activities on untrained extremity. 24 h after post-test-1, post-test-2 (retention test) was conducted on all tasks. Dependent variables measured were performance time and number of errors. **Results:** Analysis revealed significant change in time ($P < 0.005$) and in error ($P < 0.005$) for card turning task. Also comparison of pre-test-1 and post-test-2 data showed significant change in both time ($P < 0.005$) and error ($P < 0.005$) for all the tasks. **Conclusion:** The study indicates that cross-transfer effects has occurred and skill generalization to very far transfer task in adults with hemiplegia through near, intermediate, and far transfer tasks.

Key Words: Cross-transfer, Far Transfer, Generalization, Hemiplegia, Intermediate Transfer, Motor Learning, Near Transfer, Transfer, Very Far Transfer

Category: Gazala Makda Trophy
Assessment of the Growth of the Preterm Low Birth Weight Infants after Giving Kangaroo Mother Care and Study its Effect on Behavioral State of these Infants and on Stress Perceived by their Mother

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Background: Preterm infants frequently experience delayed weight gain and extreme behaviors (irritability, drowsiness, low activity, disturb sleep etc.), due to which their mother's also experience stress. Recently Kangaroo mother care (KMC) is been used and found to be beneficial in weight gain of preterm low birth weight infants. But its effect on behavioral state of the infants is not yet documented. The study is taken up to analyze effect of KMC on behavioral status of preterm low birth weight infants and on the stress level perceived by their mothers. **Aims and Objectives:** To study the effect of KMC on weight gain of low birth weight infants. To study the behavioral changes in infants pre and post KMC. To study the Effects of KMC on stress level of mothers. **Material and Methods:** Preterm infants of 28-32 weeks of gestational age and with no other medical complications were included in study. Infant's weight, behavioral state in infants was recorded using infant weighing scale and Anderson's behavioral state scale, perceived stress scale (PSS) was administered on Infant's mother. Infants received KMC at least for 6 h per day. Infants' weight and behavioral state was recorded pre and post therapy. PSS was administered at the beginning of KMC and 8th day after KMC. **Results:** Result shows (1) Statistically significance in weight gain of infants between day 0 and day 15 with paired *t*-test ($P < 0.05$). (2) Wilcoxon signed ranked test results It shows improvement of neurobehavioral status of infants at day 16 than day 1. Day 1 shows statistically significance but day 16 showed highly significance ($z < 0.05$ significant). (3) Perceived stress scale score of day 0 and day 8. Wilcoxon signed ranked test was administered which shows statistically highly significance ($z = 0.00$). **Conclusion:** KMC is useful intervention for the growth and neurobehavioral development of infant. It not only helps in increasing the weight of the infant but also improves the neurobehavioral status (in terms of movements and attention) of the infants. There by decrease the stress, negativity and anxiety perceived by their mothers.

Key Words: Anderson Behavioral Status Scale, Kangaroo Mother Care, Perceived Stress Scale, Preterm Low Birth Weight Infants

Category: Gazala Makda Trophy
The Importance of Using Minimum Two or More Standardized Assessments (Sensory and Motor) as Initial Evaluation to Determine the Effective Treatment Plan for Children with Disorders

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Background: As a practicing occupational therapist (OT) in abroad and in India, I have noticed that using standardized assessment tools in India by pediatric OT are lesser comparatively other parts of the world. Added to that, using specific assessment tools such as sensory based and motor based tests as initial assessments give better treatment plan, evidence based practice in selecting treatment techniques. **Objective:** To study the importance of using sensory

profile (SP) and beery visual motor integration (VMI) as minimum two or more assessment tools (sensory and motor aspects) during the initial assessment in OT for children with disorders to determine the effective treatment plan. **Method:** A total of 76 children's data collected of which 38 data were chosen with minimum of SP and VMI (covering sensory and motor) and other 38 data without standardized assessments. Winnie Dunn's Short SP and VMI assessments were taken for this study. **Results:** It has been identified that using minimum of two standardized (SP and beery VMI) initial assessments (sensory and motor based) during OT initial evaluation will give more evidence based treatment plans. High numbers of children (>26 out of 38) with disorders have been noticed that they have deficits in both sensory (28) and motor (27) areas. Hence, OT treatment programs to set covering sensory and motor areas for better functional outcome. Setting up treatment programs with standardized tools (>14 programs) were much easier and more specific than with non-standardized tools (<5 programs). **Conclusion:** The results indicates that it is recommended to use SP and beery VMI the standardized assessments tools to be used as OT initial evaluation to set treatment programs for a better functional outcome of children with disorders. Children who have sensory deficits also show motor deficits and hence the OT treatment focusing sensory and motor based intervention will be efficient.

Key Words: Beery Visual Motor Integration, Initial Evaluation, Occupational Therapy Assessment Tools, Sensory and Motor, Sensory Profile, Standardized Assessments, Treatment Goals

Category: Gazala Makda Trophy
Preoccupations to Occupations - Bridging the Gap in Toddlers and Preschoolers with Autism Spectrum Disorders

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Background: Toddlers and preschoolers with autism spectrum disorders (ASD) have difficulty in participating in age appropriate occupations due to preoccupations caused by core symptoms of the condition, sensory integration dysfunction, lack of attentional skills etc. **Objective:** To study the role of occupational therapy along with attentional training (AT) in reducing preoccupations and facilitating participation in age appropriate occupations among toddlers and preschoolers with ASD. **Study Design:** Two group comparative study. **Methods:** 30 subjects diagnosed with ASD as per DSM-V, age range 2-5 years, were randomly allotted to two Groups - Group 1 conventional occupational therapy (OT) and Group 2 conventional OT plus AT. 15 subjects were allotted to each group. Intervention was provided for 12 months. Subjects were evaluated at baseline, 3 months, 6 months, 9 months and post intervention using sensory profile caregiver questionnaire, repetitive behaviors inventory, autism mental state examination, early social communication scale, revised Knox preschool play scale and Canadian occupational performance measure. **Results:** Statistical analysis as per unpaired *t*-test shows subjects from both the groups showed improvement post intervention. Subjects in Group 2 showed better improvement as compared to Group 1. Group 2 showed clinically and statistically significant ($P < 0.05$) improvement post intervention. **Conclusion:** Attentional control is the basis for all learning, and thus working on attentional control along with conventional OT facilitated better participation in age appropriate occupations.

Key Words: Attentional Training, Autism Spectrum Disorder, Occupational Therapy, Preschoolers, Toddlers

Category: Gazala Makda Trophy
Formulating Functional Goals in Pediatrics: A Process Shaping the Intervention

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Background: Occupational therapy (OT) aims at promoting health and well-being, through participation in occupations that people want to or are expected to perform in society that are unique to the individual and context. For a child, the family forms major context influencing child's participation. Same holds true for families' participation in society. **Objective:** This pilot study, shares the process of formulating functional goals, one of the pivotal steps of intervention; with a family using a semi-structured interview. **Study Design:** Case study. **Method:** A semi-structured interview, spread across two sessions was conducted for formulating functional goals with the family of a 5-year-old girl child diagnosed with autism spectrum disorder. She has been receiving OT at author's workplace since 2 years. Each session was structured to get specific information as follows: First: Child's interests, participation in everyday routines in different contexts and families' hopes. The questions helped them articulate reasons for choosing a participation outcome and identify contextually appropriate activities for its achievement. Second: Performance components required to reach the outcome. After 2 months, the parents were interviewed to understand their perspective on this process. **Results:** This method of formulating functional goals in collaboration with the family seemed to influence the child, family and therapist. Child's participation within home, school and community was central focus of the intervention plan. It increased the opportunities to practice the skills in specific context thus leading to independence. The child's increased participation reduced the family's stress and allowed them to reorganize their time and energy for interaction with their other child and for household chores. Understanding the child's strengths and difficulties helped them apply therapeutic activities in their context. It allowed the therapist to step down from expert position to partner with the family. This facilitated opportunity for mutual learning. **Conclusion:** Such a method of formulating functional, participation based goals is congruent to fundamentals of OT. The therapist-family collaboration not only influences the primary recipient of services-the child; but also the family and the therapist. It highlights the reciprocity of child and family's participation on each other and supports the shift towards family-centered practices.

Key Words: Collaboration, Context, Family-centered Practices, Functional Goals, Participation

Category: Gazala Makda Trophy
The Correlation between Academic Performance and Visual Motor Integration Skills in Children with Learning Disabilities

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Background: Learning disability is a heterogeneous group of disorders manifested by significant difficulties in acquisition and use of academic abilities. It is prevalently diagnosed in younger school

age group. Visual motor integration skill is an important variable to child's academic performance. But no evidence is available in India on "difficulties in particular academic skills like language, reading, writing, mathematics and basic abilities required for academic excellence in that particular academic skills." Knowing the correlation among these two variables is important for focused occupational therapy intervention. **Objective:** To find out the correlation between visual motor integration, visual perception and motor coordination and academic performance, in children with learning disabilities. To use the study result for references and guidance to other professionals for more academic independence and remediation of these children with learning disabilities. **Methodology:** 40 children with learning disabilities of age 10-15 years were included by convenient sampling method. Each child was assessed on visual motor integration (VMI) and learning disabilities checklist (LDC). Age specific scoring of each subtest of VMI is done as per VMI manual. Scoring of LDC is done by 4-point Likert scale. Data generated is analyzed by using Pearson's correlation test. **Result:** Academic performance shows positive correlation with VMI skills of the child. It was evident from VMI raw scores that motor coordination is highly related to writing skills. Visual perception skills are positively correlated to reading as well as mathematical abilities of the child. **Conclusion:** There is a positive correlation between motor coordination and writing skills also in between visual perception and mathematical skills in children with learning disabilities. These can be used to plan a focused occupational therapy intervention and appropriate remediation in children with learning disabilities. Further studies are recommended to observe effect of focused occupational therapy intervention based on these results.

Key Words: Academic Skills, Focused Occupational Therapy Intervention, Learning Disabilities, Visual Motor Integration Skills

Category: Gazala Makda Trophy Impact of Occupational Therapy on Functioning in Children with Attention Deficit Hyperactivity Disorder

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Background: Occupational therapy (OT) can strengthen a child's modulation of senses, particularly in attention deficit hyperactivity disorder (ADHD), to optimize responses to sensory inputs and improve behaviors. However, studies are needed in the Indian context to document the same. **Objectives:** The present study aims to compare functioning in children with ADHD, before and after receiving multidisciplinary intervention program (including OT), in Mumbai. **Study Design:** Information obtained from case reports of children ($n = 1073$) evaluated for developmental concerns (2009-2012) was retrospectively analyzed. **Methods:** Total of 377 children (average age: 7 years 1 month; average IQ: 107; 286 boys and 91 girls) were diagnosed with ADHD (using fourth edition of Diagnostic and Statistical Manual of Mental Disorders). Out of 377 children, 43 underwent OT evaluation before and after intervention (i.e. pre- and post-). Children received intervention for 6 months (average), including consultation by a developmental pediatrician, occupational therapy, speech and language therapy and monthly parental counseling. Indicators based on clinical observations (e.g. behavior) and assessment of visual-motor integration (VMI), were compared pre- and post-intervention, using

Stata-12. **Results:** During post-intervention OT evaluation, 14% of children ($n = 43$) showed moderate-severe restlessness (66% at pre-intervention evaluation, $P < 0.05$), 14% showed hyperactivity (31% at pre-intervention evaluation, $P = 0.06$) and 12% showed moderate-severe impulsivity (48% at pre-intervention evaluation, $P < 0.05$). Substantial improvements were noted in handwriting viz. writing style and pressure. Vestibular and proprioceptive concerns significantly reduced. Proportion of children with below age-equivalent VMI score significantly decreased from pre-intervention (50%) to post-intervention evaluation (20.5%). **Conclusion:** OT as part of a coordinated multidisciplinary program, with regular monitoring for compliance and documentation of clinical outcomes, optimizes functional improvement in ADHD.

Key Words: Attention Deficit Hyperactivity Disorder, Children, Occupational Therapy, Modulation of Senses, Sensory Input

Category: Gazala Makda Trophy Development of the DISHA Model of Transdisciplinary Care in Pediatric Habilitation

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Background: Transdisciplinary care is defined as the sharing of roles across disciplinary boundaries to enhance communication, interaction and cooperation among team members. This model of care aims to provide family centered, coordinated and integrated services to meet the needs of children with difficulties and their families. It has been recognized as one of the best approach for early intervention practice. This approach is considered to reduce the fragmentation in services and also the likelihood of conflicting and confusing reports and enhance service coordination. **Aims/Objectives:** Pediatric habilitation is a team based approach to enable effective delivery services provision for children with special needs. Interdisciplinary care involves active coordination among team professionals to work towards goal attainment for better treatment provision. Hence the study aims to develop a model of treatment care. **Methods:** The model involves 6 stages of treatment provision aiming towards effective therapy services. It involves interaction of the team to jointly develop and plan goals without over-reeling for the child through effective documentation. There is integration of the therapist-parent-child-school interaction to enable better functional outcomes. The transdisciplinary professional interacts with the families and the caregivers to enable continuation of services at home. **Results:** Effective improvement of goals envisioned and better outcomes noted due to regular discussion of the team and better progression of therapy. **Conclusion:** This model can serve to enhance treatment provision for the children and also provide great assistance to the families.

Key Words: Documentation, Model of Care, Team Approach, Transdisciplinary

Category: Gazala Makda Trophy Effect of Manual Abilities on Functional Mobility Skills in Cerebral Palsy

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Background: Manual abilities refer to the use of hands for gross and fine activities in daily life during self-care and handling influencing gross motor functional performance abilities and functional mobility skills in cerebral palsy. **Objectives:** To study the effect of modulating

manual abilities using neurofacilitation of developmental reaction (NFDR) on functional mobility skills in children with cerebral palsy. **Study Design:** Experimental control design. **Method:** A total of 96 children of age range 2-7 years were screened to include 60 subjects with a diagnosis of spastic cerebral palsy. The baseline evaluation was done for manual abilities (manual abilities classification system [MACS]) and functional mobility and abilities (using functional mobility scale [FMS], gross motor functional measure [GMFM]) and quality of upper extremity skill. The subjects were allocated to two strata (strata I [age range 2-4 years] and strata II [age range 4-7 years]) to include 30 subjects in each. The subjects in each strata, were randomly allocated to two treatment groups i.e. Group A (NFDR approach) and Group B (conventional treatment) and intervention given for 3 months followed by reevaluation. **Result:** Between groups comparison done and *P* value was found to be significant in Group A (NFDR group) for MACS score, SMC, FMS, GMFM and quality of upper extremity skill test ($P < 0.05$). **Conclusion:** NFDR regulated the basic elements of movement dynamics catering spatiotemporal aspects of voluntary motor behavior using functional and task specific synergies, thereby modulating manual abilities and functional mobility skills in children with cerebral palsy.

Key Words: Cerebral Palsy, Functional Mobility Skill, Motor Behavior, Neurofacilitation of Developmental Reaction Technique

Category: Gazala Makda Trophy Mealtime Behaviors in Children with Autism Spectrum Disorder

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Background: Mealtimes form an integral part of an individual's life and it is a primary occupation for all individuals. Children with autism spectrum disorders (ASD) are known to have difficulties with eating in the form of eating selective foods, obsessions with certain foods etc. However, information about meal time behaviors about Indian children with ASD is limited. **Objective:** The objective of this study was to explore mealtime behaviors in children with ASD in South Indian population. **Study Design:** Cross sectional survey. **Methods:** Children's eating behavior inventory, a parent report measure which assesses eating and mealtime behaviors in children in the age range of 2-12 years was used. 30 English speaking parents of children with ASD were given the consent forms and questionnaires. The data gathered about mealtime behaviors was analyzed descriptively. **Results:** It was seen that mealtime behaviors are present in all children with ASD with different frequency but 60% (25) parents reported that their child shows problematic mealtime behaviors with the percentage score more than 16%. Findings of the present study also support the existing evidence on mealtime behaviors for children with ASD. **Conclusion:** Problematic mealtime behaviors are present in children with ASD and these behaviors are difficult for their parents to manage. Future studies can focus on evaluating mealtime behaviors in other clinical population.

Key Words: Children with Autism Spectrum Disorder, Mealtime Behaviors, eating behaviour

Category: Kamala V. Nimbkar Trophy Effectiveness of Workplace Intervention in the Prevention and Management of Work Related Musculoskeletal Disorders in Sedentary Workers

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Background: Work related musculoskeletal disorder (WMSDs) can develop in occupational setting due to physical tasks with which individual's carryout their normal activities. There is a strong evidence of casual relationship between physical workplace factors and musculoskeletal symptoms. This study will help to plan for proper rehabilitation program to prevent musculoskeletal disorders which will ultimately help in proper work efficiency and long term health care among workers. Pre and post single group is the study design. **Objective:** To implement the conventional occupational therapy treatment in prevention and management for WRMD's and to determine the effect of treatment protocol among sedentary workers. **Study Design:** Pre and post single group design. **Methods:** The study included 32 patients who were sedentary workers (office workers, computer users at bill sections, offices, and banks) with the age group 25-40 years. They were assessed for WRMSDs using the following outcome measures: (1) Visual analogue scale (VAS). (2) Orebro musculoskeletal pain questionnaire (OMPQ). (3) Cornell musculoskeletal discomfort questionnaire (CMDQ). After the assessment, they were given conventional Occupational Therapy with ergonomic advice in their workplace itself. Treatment protocol was executed for 30 min in one session, 3 times in a week for 1.5 months. The Treatment program comprises of stretching and strengthening exercise program of involved region, postural correction, relaxation, ergonomical advice, and prevention of musculoskeletal problems faced by workers. The efficacy of the treatment was assessed on above outcome measures. Re-evaluation was done at the end of the study and the data was collected, compared and analyzed. **Results:** Paired *t*-test was used to compare the pre-test and post-test values of body pain, discomfort and functional status as measured on VAS, CMDQ and OMPQ respectively through SPSS software 16.0. CMDQ and OMPQ shows significant improvement as per paired *t*-test ($P < 0.05$) in sub sections scores post intervention. Mean scores for VAS pre and post intervention were 6.81 and 2.13 respectively, *P* value of 0.0001 shows effectiveness of intervention on body pain. This shows that this research is significant in all 3 variables and sub variables. **Conclusion:** The finding of the study suggests that it is possible with the conventional treatment and ergonomical education at the workplace to decrease the musculoskeletal pain, body discomfort and improve functional status. Thus the study suggests a need of occupational therapists to be employed across many work settings.

Key Words: Ergonomical Advice, Occupational Therapy, Postural Correction, Sedentary Workers, Stretching and Strengthening Programme, Work Related Musculoskeletal Disorders

Category: Kamala V. Nimbkar Trophy Association of Individual, Physical and Psychosocial Factors with School Bag Carriage Related Musculoskeletal Pain and Discomfort in Primary School Children

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Background: There is little literature, regarding the association of different physical and psychosocial factors with school bag related musculoskeletal discomfort and pain in primary school children. Many studies present evidence to support backpack load limits for children, but the suggested limits have been based on percentage of the body weight with discrepancies. While some researchers proposed 10% of body mass, another research works proposed 15% of body

mass. Musculoskeletal pain and discomfort in children is complex and need to be considered in a multi-factorial manner. **Objectives:** To establish multi-factorial association with the presence of school bag carriage related musculoskeletal discomfort and pain in Indian context. **Study Design:** A cross-sectional survey design. **Methods:** Objective measurements of the children, schoolbags and other additional items were made. The sample of 119 children in the age group of 9-11 years was analyzed on the basis of different factors and their associated musculoskeletal discomfort. Data of each child was taken thrice to improve the authenticity of the result. They were assessed using the following outcome measures. (1) Visual analogue scale (VAS). (2) Body discomfort chart (BDC). (3) Strength and difficulty questionnaire (SDQ). (4) Researcher's assisted questionnaire. **Results:** Among all children, 64% ($n = 76$) had discomfort in different body parts and 36% ($n = 43$) had no discomfort. It was found that there is increase in intensity of pain on VAS and the result was highly significant ($P = 0.00$). When children's bag weight were analyzed, it was found that none of children had bag weight <10% of their body weight. SDQ scale was used for analyzing the psychosocial factor and emotional wellbeing in the children. Among children who were abnormal on the SDQ scoring, all of them (100%) had discomfort. **Conclusion:** All the sample children had carried more bag weight than recommended school bag limit of 10% of body weight. On BDC most of the children reported shoulder and back pain. Children had increased intensity of pain after carrying the bag to the school. Overweight children were associated with musculoskeletal pain greater than healthy weight children. Psychosocial factors were also strong predictors of musculoskeletal discomfort.

Key Words: Musculoskeletal discomfort, School bag, Body discomfort

Category: Kamala V. Nimbkar Trophy
Assessment of Patient Satisfaction towards Jaipur Foot Prosthesis Following Unilateral Transtibial Amputation: A Pilot Study

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Background: Lower-limb amputation is a permanent impairment that has been shown to lead to decreased health-related quality of life, activity limitations, participation restrictions and changes in body structures and functions. It occurs most frequently, particularly due to railway and road traffic accidents. **Objective:** To evaluate prosthesis related quality of life in unilateral transtibial amputation patients. **Study Design:** Cross sectional, prospective, correlational study. **Methods:** For this study, 50 amputees with traumatic or dysvascular etiology, 18+ years of age, unilateral lower limb amputation, and using prosthesis for more than 3 months were included. Whereas with sensory loss in residual limb, polytrauma and cardiorespiratory problems were excluded. Prosthesis evaluation questionnaire (PEQ) to assess patients' satisfaction towards prosthesis and 6 minute walk test (6-MWT) to assess functional mobility will be used as outcome measure tools. **Results:** Results were analyzed by using Microsoft Excel 2007 and SPSS version 19. Pearson correlation test was used to find out our statistical significance. The data was analyzed to correlate each component of PEQ with 6-MWT. In each domain of PEQ, the subjects scored for ambulation (68%), appearance (73.8%), frustration (61.7%), personal response (54.74%), residual limb health (74.25%), social burden (59.36%), sound (49.55%), utility (73.53%), well being (66.3%). Whereas for 6-MWT the subjects scored in the range of 200-300 m without showing any signs of fatigue or dyspnea. **Conclusion:** The satisfaction of patients with prosthetic devices is influenced mainly by factors such as early

fitting, appearance, utility and functional mobility. Thus it can be concluded that prosthesis satisfaction reported on PEQ is positively correlated to their functional mobility and thus improved quality of life. As the quality of the prosthesis has an effect on patient's perception about their life, this study will help us to understand how exclusively satisfaction of patient towards prosthesis is related to their functional status. Also it will be useful in evaluation of prosthetic care, so the time period of treatment can be reduced.

Key Words: Mobility, Prosthesis, Quality of Life, Satisfaction, Transtibial Amputation

Category: Kamala V. Nimbkar Trophy
Effect of Medial Longitudinal Raise on Flexible Flat Foot Conditions: A Retrospective Observational Study

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Objective: This study was undertaken to understand the longitudinal medial raise and its effectiveness in developing medial arch in study participants showing (1) flexible flat feet (2) flexible flat feet with Tendo-Achilles tightness. **Methodology:** 11 study participants (7 females, 4 males) between age group 8-25 years with flexible flat feet (total 22 ft) according to exclusion criteria (back ache, medical issues, musculoskeletal, neurological, genetic, developmental disorder, limb length discrepancy, obesity) were selected for the study with written consent. Baseline pre-intervention and post intervention documentation was done with respect to X-ray investigation, foot prints, photo Documentation in unsupported weight bearing standing. Longitudinal medial raise was given for 8 weeks followed by removal of distal phalangeal support and removal of proximal phalangeal support (12th week) later continued for 16 weeks. All the subjects were given a common exercise protocol with daily application of prescribed sole in shoes. Weekly analysis was done. Post-intervention analysis was done by measuring the difference between width of the foot prints, measured, in unsupported weight bearing standing. **Result:** There were significant changes seen in the post-intervention foot width which was reduced from 5 to 14 mm range, (average mean 9.5 mm) by developing a concavity in the medial aspect in all 22 ft intervened ($P < 0.05$). **Conclusion:** Longitudinal medial raise has a significant effect in development of medial arch in treatment of flexible flat foot conditions as seen by the foot width measurements difference.

Key Words: Musculoskeletal discomfort, School bag, Body discomfort

Category: Kamala V. Nimbkar Trophy
Short Term Effects of Kinesiotaping with Conventional Occupational Therapy and Conventional Occupational Therapy Alone on Patients with Chronic Mechanical Neck Pain and Forward Head Posture

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Background: Approximately 15% of females and 10% of males suffer with chronic neck pain at any one time. Chronic neck pain produces a high level of morbidity by affecting occupational and vocational activities of daily living and by affecting quality of life. However, forward head posture (FHP) is an epidemic that has become more prevalent in modern times. 90% of the population has some degree of FHP. This puts compressive loads upon the upper thoracic vertebra causing various respiratory affectations. It seems apparent

that the postural changes from FHP may lead to bio-mechanical compressive loads that can even lead to spinal pathology. **Aim and Objectives:** To determine the short term effects of Kinesiotaping with conventional therapy and conventional therapy alone on management of neck pain, functional disability, cervical range of motion, and postural improvement. **Study Design:** A comparative study design as there were two groups in study Group A: Control group and Group B: Experimental group. **Methods:** Total 20 subjects with chronic mechanical neck pain and FHP were randomly selected in two groups. Group A - conventional OT and Group B - conventional OT with Kinesiotaping. Pain status, neck functional ability, cervical ROM and cranio-vertebral angle measurement were assessed. Assessments were done at baseline (Day 1) and at the end of 4th week. The subjects of both the groups were treated regularly and Kinesiotape application was given to experimental group changing it twice a week for 4 weeks. **Results:** The results were presented as mean and standard deviation. The significance was assessed at 5% level of significance with *P* value, set at 0.05. Paired *t*-test was used to analyze the variables pre-intervention to post-intervention. The study shows that conventional OT with Kinesiotaping is more effective than conventional OT alone on decreasing neck pain, improvement of cervical ROM, and increase in the craniovertebral angle. **Conclusion:** Kinesiotaping can be effectively used as an adjunct with conventional OT in patients with chronic mechanical neck pain and FHP.

Key Words: Chronic Mechanical Neck Pain, Forward Head Posture, Kinesiotaping

Category: Kamala V. Nimbkar Trophy Eyelid Crutches for Modulating Visual Field Deficit

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Background: Eyelid crutches are indigenously designed functional dynamic splinting strategy for augmenting the eyelid function, improving visual field and modulating visuo-motor field deficit allowing the voluntary closure and assisted opening of eyelid. **Objectives:** To see the effectiveness of eyelid crutches for modulating visuo-motor functional deficit in patients with 3rd cranial nerve involvement. **Study Design:** Experimental control design. **Method:** A total of 60 subjects of age group 10-50 years were included. The baseline evaluation was done for oculomotor movement, Ocular alignment, mobility and gaze. The subjects were allocated to two strata (strata 1 [10-30 years] and strata 2 [30-50 years]) with two treatment groups having 30 subjects each (Group A, eyelid crutches and Group B conventional treatment group). The intervention was given for 12 weeks with a frequency of 3 sessions per week of 30 min duration each. **Result:** Between and within groups comparison done and *P* value was found to be significant (*P* < 0.05) for oculomotor function and visual gaze in Group A. **Conclusion:** Eyelid crutches are found to be effective for augmenting and modulating visual field deficit in patients with 3rd cranial nerve involvement.

Key Words: Eyelid Crutches, Functional Performance Abilities, Visuo-motor Field Deficit

Category: Kamala V. Nimbkar Trophy Efficacy of Sensory Integration Therapy in Language Development for Children with Cochlear Implants

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Background: Sensory processing disorder (SPD) is known to occur in diverse populations, including children with hearing loss and cochlear implants (CIs) development. However, no systematic investigation was done to find out whether SPD is associated with hearing impairment and CI. Effectiveness of improving language skills in children with CI is still unclear. **Aim:** Therefore the aim of the study was to find the prevalence of SPD in children with CI and evaluate the efficacy of sensory integration therapy for developing language in children with CI. **Methodology:** A cross-sectional survey and quasi experimental pre-posttest design was adopted for the study and consisted of 2 phases. In the 1st phase, 100 children with CI were surveyed to find out the prevalence of SPD. In phase 2 of the study effectiveness of sensory integration therapy on language development was investigated on 40 children with CI having SPD. The base line and posttest measurement were done using integrated scale of development. The control group underwent, conventional OT and speech therapy and experimental group underwent SIT and speech therapy for a total of 50 sessions, 45 min per session, for 10 weeks. **Results:** The findings revealed a prevalence of atypical performance in 29% of children, of which 19% showed probable difference and 13% showed definite difference on short sensory profile. Further it was found that 45%, 29% and 21% showed problems in areas of auditory filtering, tactile sensitivity and under responsive/seeks sensation behavior. In the phase 2 the experimental group showed significant difference in expressive language and in receptive language (*P* < 0.05) following sensory integration therapy. The experimental group showed a large effect size in receptive language, expressive language and speech (0.9, 1). Whereas control group showed small effect size in language and cognition (0.3, 0.1). **Conclusion:** The study concluded that children with CI have sensory processing problems. Sensory integration therapy is not only effective in language development but also in other developmental components, in children with CI.

Key Words: Cochlear Implant, Expressive and Receptive Language, Hearing Impairment, Sensory Integration Therapy

Category: AIOTA Trophy for Best Paper in Mental Health

Work Fitness in Municipal Corporation Employees Referred for Observation in Occupational Therapy Department from Psychiatry Department: A Cross Sectional Study in a Tertiary Care Hospital

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Background: Work fitness refers to a state, whether physical, mental and emotional, which enables an individual to perform an assigned task competently and safely. Patients were referred to occupational therapy for observation and fitness. So, the need was to assess category of employees and reasons of their ill health which lead to different levels of work fitness. **Objective:** To observe the municipal employees of various categories of occupation for different levels of work fitness and assess the association between the reasons of ill health and work fitness. **Study Design:** Retrospective cross sectional study. **Method:** A retrospective cross sectional study of record of reports of 3 years i.e. 2013, 2014 and 2015 on employees of municipal corporation referred by Psychiatry Department was conducted in Occupational Therapy Department OPD 23, Lokmanya Tilak Municipal Medical College & General Hospital, Sion occupational therapy work fitness scale prepared by our department and was used in the reports of employees to state their work fitness level. They were then divided into male and females and according

to age and year wise proportion of male and female fitness level was assessed. Also they were divided into various categories as Class I, II, III and IV depending on their occupation. Then they were categorized into different reasons of ill health and association of work fitness and reasons of ill health was assessed. **Results:** In Class I category, number of employees of psychiatric illness were found to be more and in Class IV category, number of employees of alcoholism and absenteeism were more. The association of reasons of illness with work fitness was found to be significant using non parametric test. The percentage of fitness in lower age group was more than percentage of higher age group. **Conclusion:** In Class I and Class II, number of employees of psychiatric disorders was more than alcoholism and absenteeism, so percentage of fitness was less and in Class III and Class IV number of employees of alcoholism and absenteeism was more than psychiatric disorders, so percentage of fitness was more because more of repeated observation followed by fitness was found.

Key Words: Alcoholism, Ill Health, Occupation, Unfit, Work Fitness

Category: AIOTA Trophy for Best Paper in Mental Health

Social Skills Training: A Case Study to Show the Effectiveness of Social Skills Training to Improve the Quality of Life in Mild Intellectual and Attention Deficient Adolescent with Autism Spectrum Disorder

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Objective: The purpose of the case study is to assess the effectiveness of social skills training to improve the overall quality of life in a mild intellectual and attention deficient adolescent with autism spectrum disorder. **Method:** 18-year-old adolescent boy with mild intellectual and attention deficient with high functioning autism underwent social skills training in one to one sessions with duration of 45 min, thrice in a week for 3 months. The Social Skills Inventory and Pediatric Quality of life inventory (PedsQL) version 4.0 were used as outcome measures to see the effectiveness of occupational therapy intervention in improving the quality of life and social skills. **Result:** The result showed significant changes quantitatively on both Social Skills Inventory and PedsQL scores. As there is difference in scores from baseline the score was 125 out of total score of 148 which regressed to 77 out of total score of 148 on Social Skills Inventory (lesser the score the better the improvement). On the other hand on PedsQL the score has regressed from 46 (baseline) to 36 (after training) from a total score of 92. Also the subjective report by parents confirmed the change in behavior within the home and social environment. **Conclusion:** Social skills training is effective in improving core social skills by the use of role play, story based lessons, role reversals, teaching assertiveness and working on communication and problem solving strategies in high functioning autism.

Key Words: Attention Deficient, High Functioning Autism Spectrum Disorder, Quality of Life, Social Skills

Category: AIOTA Trophy for Best Paper in Mental Health

To Compare the Effectiveness of Simplified Teaching Method on Improving Pre Writing Skills in Kindergarten and Mild Intellectual Disability Children

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Background: The prewriting skills are important prior to writing which is the predominant task for the elementary school children. Intervention in prewriting skills help in acquiring legible handwriting.

This study compared the improvement in pre writing skills between the kindergarten children and the mild intellectual disability through simplified teaching method done by the educational assistant/teacher. The method of teaching which focused on improving prewriting skills was taught by the occupational therapist. This comparison showed that there was significant difference in improvement of prewriting skills between kindergarten children and mild Intellectual disability children.

Aim and Objectives: (1) To compare the learning prewriting skills between the kindergarten and the mild intellectual disability children through simplified teaching method, (2) to assess the level of prewriting skills, (3) to set the realistic goals to improve the next level of prewriting skill, (4) to facilitate to get through simplified teaching technique, (5) to re-assess prewriting skills, (6) to reinforce newly learnt prewriting skills. **Study Design:** Prospective study. **Methods:** 40 subjects (20 mild intellectual disability + 20 kindergarten children) who fitted inclusion criteria were selected for this study. Prewriting skills assessment was done at baseline for all the subjects. The subjects were taught to attain goals through simplification learning method by occupational therapist or educational assistant/teacher. Repetition was encouraged to enhance learning skill. The session was for 25 min/day for the intellectual disability and 10-15 min for the kindergarten children. So, children underwent three sessions per week for 15 days initially. The progress was monitored in every 15 days. **Results:** Result showed that there was significant improvement in prewriting skill in both subjects after intervention and the improvement were statistically more than intellectual disability children. **Conclusion:** The prewriting skills were improved through simplified teaching technique on both (kindergarten and mild intellectual disability) children but in kindergarten school children showed better improvement than intellectual disability children.

Key Words: Kindergarten Children, Mild Intellectual Disability, Prewriting Skills

Category: Non-competitive Attitudinal Perceptions of the Differently Abled

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The attitudinal perceptions of the specially able persons put professionals to a greater challenges as the former are aspirant for more than what we offer to them. To understand the attitudes of specially able we need to identify the types of the attitudes which commonly are seen in the specially abled, these are then looked into one by one. During my tenure of work and even now some factors need to be addressed including their anxieties which they come across in their day to day life. The society at large needs to be educated as far as possible to make the lives of these persons more easy, understandable and well integrated into the mainstream to make their lives useful to the community. The presentation tries to look into certain types of these specially able persons, their issues like elimination of discrimination and/or various types of the barriers for specially abled persons. Improving their knowledge and attitudes about disability. This is not invited to this but also protection and victimization and unsafe environments. There is a need to identify barriers to inclusion in the society. We need to address work limits also. We also observe the effects of the negative attitudes towards persons who are specially disabled with one or other type of disability. The parents and home environment tend to be over protective. A significant aspect of being a wheel chair user is the conspicuous quality of it. People with disabilities are aware of being looked at and set apart as wheel chair users and are often self-conscious about their bodies. One will face all the attitudes people will have also about disability whenever you go out in public. People hold doors for the disabled, offer to carry your groceries, grab their children from his/her path. There is more insight into the perceptions of the specially able group in the presentation of their attitudes.

Key Words: Differently abled, Attitudinal Perceptions, Disability

Category: Non-Competitive Utilization of Synergistic Linkage in Motor Rehabilitation of Stroke: A Pilot Study

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Background, Objectives and Study Design: Synergy, working together of muscles in a coordinated fashion, is a normal neurophysiological mechanism. Abnormal stereotyped motor behaviour appears in post stroke hemiparesis patients. Facilitation of normal synergy and dissociation of abnormal synergy may influence motor recovery. The application of synergy concept in stroke rehabilitation is sparse. **Methods:** Design: Pretest posttest single group, Phase I trial. Setting: Rehabilitation Institute. Participants: 40 (26 males, 40-60 years, 24 ischemic) chronic post stroke hemiparetic subjects. Design: Pretest posttest single group, Phase I trial. Interventions: Considering the relation between normal and abnormal synergies, a motor therapy protocol using various tasks/activities was developed. Synergistic movements were selected on the basis of quality, quantity and association of the available movements. For example, shoulder external rotation with elbow extension was utilized to dissociate strong elbow flexion. Outcome measures: Fugl-Meyer assessment-upper extremity (FMA-UE) - to assess the voluntary motor control, wolf motor function test (WMFT) to measure functional use of the upper limb. **Results:** The motor rehabilitation protocol using synergy concept was feasible among all the participants and across all the stages of motor recovery. Post-intervention subjects exhibited significant ($P = 0.02$) change on FMA-UE (37.75 ± 16.93 to 42.5 ± 19.37). Similarly quality of movements (WMFT) improved from 1.82 to 2.51 ($P < 0.001$) on a 5-point scale. **Conclusion:** Synergy based motor rehabilitation is beneficial in improving motor and functional recovery in stroke patients. The utilization of synergistic linkage should be explored in stroke rehabilitation.

Key Words: Stroke Rehab, Synergy, Motor Rehabilitation

Category: Non-competitive World Health Organization-Wheelchair Service Training Packages in Low and Middle Income Asian Pacific Countries

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Introduction: As per World Health Organization (WHO), it is estimated that there are more than 70 million people worldwide who require wheelchairs, yet only 5-15% of people have access. Convention on rights of persons with disabilities highlights responsibility of states to ensure personal mobility and to promote availability of and access to assistive devices. Wheelchair is one of the most commonly used assistive devices for personal mobility, but training opportunities for health care professionals on wheelchair service provision is found to be less and they are not trained adequately to ensure people with disabilities get an appropriate wheelchair. "Wheelchair Service Training Package" (WSTP) are developed at three levels – Basic, intermediate and for managers following WHO guidelines on provision

of manual wheelchairs in less resourced settings (2008). **Objective:** To increase and develop the skills, knowledge of personnel involved in wheelchair service provision by WSTP. **Method:** Mobility India (MI) Rehabilitation Research and Training center is a non-government organization, conducted training programs using WSTP different levels for professionals across the India and low and middle income countries. Participants were selected randomly. WSTP-basic is trained for 5 days, WSTP-Intermediate is trained for 9 days and WSTP-manager is trained for 2 days. These training packages are for all health care and rehab professionals or technical personnel, community based rehabilitation workers and wheelchair users, etc. **Results:** Around 2222 health care and rehab professional staffs and students have been oriented on need of WSTP. Overall 672 national and international candidates have trained for wheelchair service provision in WHO WSTP-Basic, Intermediate level and 90 participants have undergone WHO WSTP-manager level. 836 service users have benefited through MI. WSTP-basic has been delivered to various rehab professional students as part of their course curriculum. Three Indian universities have integrated WSTP-basic into their rehab course curriculum. **Discussion and Conclusion:** There is huge gap between need and availability of trained professionals, WHO-WSTP has sensitized different stake holders about the need and benefit of developing an appropriate wheelchair provision, created trained personnel and initiated in implementation of wheelchair service provision in low and middle income Asian pacific countries.

Key Words: Appropriate Wheelchair, Assistive Device, People with Disabilities, Personal Mobility, Wheelchair Service Provision

Category: Non-competitive Analysis of the Effect of Occupational Therapy Training on Patient Handling Skills of Respite Caregivers

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Background: Taking care of an older or ill family member can be enormously rewarding, can be managed with occasional respite from their responsibilities. Respite caregivers program includes training on various aspects such as lifts and transfers, personal care/daily living skills, etc. A trained person can offer better health services than untrained person. Non-governmental organization working at community had planned the project to train respite caregivers, underprivileged ladies, especially home makers willing to start earning for family. **Aims and Objectives:** To analyze the effect of occupational therapy training on patient handling skills of respite caregivers from underprivileged group of society. To study effect of occupational therapy training by comparing scores of pretest and posttests. **Type of Study:** The retrospective, analytical, experimental same subject design. **Methods:** Occupational therapists are the part of the training program team for respite care-givers. occupational therapy training for these caregivers consisted of training for patient handling, assisting in patient's daily living skills, assisting patients in mobility and transfer. A retrospective study of record of 2 years of 87 respite caregivers. As occupational therapist rendered these services and conducted pre and post training tests'. Further the pre and post test results were assessed and analyzed for different aspects of patient care skills. **Results:** The comparison in pre and post test scores of occupational therapy training shows statistically significant difference with $P < 0.05$ post intervention few of the participants has shown variations in activities of daily living independence skills answers on questionnaire scores. This shows that few of them did not give much importance for this aspect of training.

Since many caregivers were young in age, they preferred to follow old pattern of caregiving, rather than using technological support to reduce their extra efforts. **Conclusion:** Occupational therapy training was found to be effective in teaching scientific methods of patient handling, transfer, etc. The training program needs to be more systematic and well planned. Further comparative study with respite caregivers not taking formal training is recommended.

Key Words: Occupational Therapy Training, Patient Handling Skills, Respite Caregivers

Category: Non-competitive

Innovations in Occupational Therapy Intervention: A Case Presentation

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Background: The child is a 4-year-old pleasant boy who visited Smart Sensory Kids Therapy Centre, Chennai, India on July 27, 2015 with his mother for occupational therapy and speech therapy assessment. The mother's main concerns were delayed speech, no socialization, poor communication and language delay. Latest and innovative technology when used with conventional therapeutic treatment gives a better result and appreciation of the condition. **Objectives:** To present a case report of a child diagnosed with autism spectrum disorder (ASD) treated using latest innovative technologies in occupational therapy intervention. **Study Design:** Case report. **Methodology:** The child with ASD was provided intensive occupational therapy treatment with the general sensory integration therapy intervention. Apart from the standard therapy, latest treatment technologies were additionally used. They are: TLP - Therapeutic listening program (Music based therapy), Mente headband - Neuro feedback system, Forbrain - Assistive device. **Results:** Standardized assessment: Winnie Dunne Caregiver Questionnaire. Total Raw Score was 174/190 which falls under typical performance. There was a significant improvement on the areas of tactile sensitivity and auditory filtering on the sensory profile following the occupational therapy treatment and the TLP. Adaptive Behavior Assessment System Scores were also noted. **Conclusion:** It has been observed that along with the standard occupational therapy intervention, using updated treatment technologies in occupational therapy is more effective and productive.

Key Words: Forbrain, Innovative Technologies, Mente Headband, Occupational Therapy for Autism Spectrum Disorder, Therapeutic Listening Program

Category: Non-competitive

Quality of Life among the Fathers and Mothers of Children with Cerebral Palsy: Cross Sectional Survey

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Background: Quality of life (QoL) has been described as an individual's perceptual of his/her own status in life as to cultural features and value systems. The disabled child's dependence on primary caregivers, father and mother in their daily activities which leads to higher level of stress on them. The caregivers of children with cerebral palsy (CP) should be able to overcome the difficulties and complication arising from the child's impairment. QoL in families can be affected when a child has CP. This study has sought to examine QoL of fathers and

mothers of children with CP. **Objective:** To explore the QoL of fathers and mothers of children with CP. **Study Design:** Cross-sectional survey. **Method:** Using Gross Motor Functional Classification System the children were screened and 50 fathers and mothers of same child with CP were recruited who fulfill the inclusion criteria. They were asked to fill World Health Organization - QoL BREF scale. The score was taken for statistical analysis. **Result:** The collected data was analyzed using Wilcoxon signed rank test. In this study, we found the mean difference of fathers and mothers were 4.94 ($P = 0.10$), 5.30 ($P = 0.061$), 4.94 ($P = 0.304$), 3.48 ($P = 0.143$) is difference domains like physical health, psychology, social relationships and environment respectively. **Conclusion:** From this study, fathers have higher mean than mothers but none of the mean differences were statistically significant at the $P < 0.05$ level. From this it is concluded that QoL of father are also affected in all domains. The result from this study can have several implications for professional and researchers targeting the primary force, the parents who contribute to the wellbeing of their children with CP.

Key Words: Cerebral Palsy, Father, Mother, Quality of Life

ePoster Presentation

Category: AIOTA Trophy for Best ePoster

Early Return to Work and Improve Range of Motion with Dynamic Cost Effective Splinting Along with Early Controlled Motion Protocol: A Case Study in Zone V-VI Extensor Tendon Injuries of Hand

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Background: Traditionally the repaired extensor tendons have been treated postoperatively in Static splints for several weeks, leading to formation of adhesions and prolonged rehabilitation. Early mobilization using dynamic splints is now a day's becoming common, and also associated with many shortcomings. **Objective:** A case report was done, to study the effects of dynamic splint was design primarily to prevent the adhesion of soft tissue and stiffness of hand. Main objective was to encourage client participation, compliance, and regular assessment of improvement by using scales and client early return to work in Zone VI Extensor tendon repaired of hand. **Methods:** A prospective case report was done on client with extensor tendon injury in Zone VI of dominant hand post operatively; within a week a dynamic forearm based splint with wrist in 40° of extension was given. Splint contains single elastic band to bring passive extension and active flexion of the digits and the volar functional support in the form of insert in the splint to maintain metacarpophalangeal joint in 30° of flexion in day time, also the straight support as an insert for the digits was given to prevent the discomfort in night. Exercise to be done every 2 hourly as per the protocol. Splintage was stopped after 6th week. Active range of motion (ROM), tendon gliding exercises and graded strengthening program was also introduced after splint removal, with progression of resistive activities until full grip and pinch strength were achieved. Pre zero week and post 6th, 8th, and 12th week functional assessment of hand was compared with the other normal hand and reported subjectively (visual analog scale, activities of daily living scale) and objectively (ROM, composite flexion, total active motion) work simulation, work hardening, hand function test, return to work. **Results:** By considering the references of static immobilization results, the dynamic splint along with the protocol was found to have significant improvement in hand function. **Conclusion:** The dynamic splint fabricated along with the protocol appears to facilitate the early return to work by minimizing the complication.

Key Words: Cost Effective Dynamic Forearmed Based Splint, Early Controlled Motion Protocol, Early Return to Work, Extensor Tendon Injury Zone VI

Category: AIOTA Trophy for Best ePoster
Use of Person-Environment-Occupation Model in a Child with Joubert Syndrome: A Case Report

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Background: Joubert syndrome shows typical features such as episodic panting tachypnea, rhythmic protrusion of tongue, jerky eye movement, ataxia, disequilibrium and psychomotor retardation. Occupational therapist has a challenge to plan intervention in such children. **Objective:** To assess the patients activity participation after using patient environment occupation model (PEO model) in child with Joubert syndrome and assist in improving quality of life of child and caregivers. **Methods:** 14-month-old female child having complains of poor neck control, not able to sit without support, drooling of saliva, and oro-motor issues (jaw drop, triangular mouth) diagnosed as Joubert syndrome was referred to occupational therapy department for her oral motor issues and functional rehabilitation. She was evaluated using developmental scale of Indian infants, Berg's balance scale, sensory profile, etc. After interviewing her parents, therapist charted out occupational therapy intervention by using PEO model. She was treated using neurodevelopmental therapy, behavioural therapy, sensory integration therapy and adaptive approach to increase her activity participation. Parents have also been counselled about her recovery expectations and importance of their involvement in her intervention. **Results:** Child showed minimal improvement in motor milestones. But she showed improvement in activity participation such as solitary play, use of her upper extremities, etc. She also showed improvement in social milestones. Her oral motor issues have reduced. Her parents reported to be satisfied with her improvement. **Conclusion:** Use of PEO model in patients with Joubert syndrome can be useful in increasing participation of patient and care givers, use of PEO model on patients with degenerative neurological conditions can guide us for planning effective intervention

Key Words: Activity Participation, Joubert Syndrome, Person Environment Occupation Model, Oral Motor Issues

Category: AIOTA Trophy for Best ePoster
Effect of Combined Approaches on Recovery of Infant with OBPP

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Background: The brachial plexus can be affected during a difficult delivery. The brachial plexus is a group of nerves around shoulder. A loss of movement or weakness of the arm may occur if these nerves are damaged. This injury is called obstetric brachial plexus palsy. Occupational therapy treatment of such patients aims splinting, strengthening and facilitation. Hence it is very important to effective

and comprehensive management for such infants. **Objective:** To assess the physical recovery along with milestone development with increasing the use of involved extremity by providing occupational therapy program along with proper handling and positioning for a child with obstetric brachial plexus injury. **Study Design:** Single case study. **Methods:** 21-day-old male child diagnosed with right obstetric brachial plexus injury with poor hand control and movements of right hand was evaluated; electromyography report resulted into right brachial plexopathy affecting C5 C6 fibres at post ganglionic level complete axon degeneration. Early intervention program such as neurodevelopment treatment, sensory integration and proprioceptive neuromuscular facilitation techniques was given to the infant in the form of play therapy, using neuro-developmental, learning, biochemical and rehabilitative frames of reference. Infant was also given splints and home program was explained to the caregivers. **Results:** Pre and post therapy intervention results were evaluated, Infant has gained ability to move his extremity against gravity and reported improvement in functional performance he is using his involved extremity i.e. right hand for reaching and grasping the object. There is improvement in range of motion at elbow joint it has been improved from 0° to 40°. Active hand use was achieved along with improvement in functional use of shoulder joint such as ability to remove napkin placed on face, taking hand to mouth, reaching overhead occasionally for toys. He is showing proper developmental milestones without the neglect of involved extremity. **Conclusion:** From the present study it can be concluded that the early therapeutic intervention by using different approaches appropriately is effective in enhancing recovery in the infants with obstetric brachial plexus injury.

Key Words: Handling and Play Therapy, Obstetric Brachial Plexus Palsy, Splinting

Category: AIOTA Trophy for Best ePoster
Effect of Integrated Approaches in Occupational Therapy Intervention in Child with Attention Deficit-hyperactivity Disorder: A Case Report

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Background: Attention deficit-hyperactivity disorder (ADHD) is a neurobehavioral disorder, the combination of medications, education and various therapies can be effective in handling various behavioral and functional skills in ADHD patients. **Objective:** To assess the effect of various approaches and to find integrated approach in patients with ADHD, perceptual deficits, motor coordination deficits etc. **Study Design:** Single case study. **Methods:** 10 years male diagnosed as ADHD with behavioral issues complains of restlessness, not sitting at one place for long time, poor attention span in any activity, decreased concentration, difficulty in coping up with the academics and social behavior at school. In 2015 was referred from school for learning disability evaluation due to poor academic performance. He was evaluated on test of visual perceptual skills, Bruininsk Oseretsky test of motor proficiency, visual motor integration test, weeFIM, etc. to find the splinter skills required for functional activities. Various approaches such as sensory integration therapy, cognitive behavioral therapy, biomechanical approach were used and follow up was taken after every 6 months. **Results:** He has improved in his ADL skills, fine motor skills, He has also shown minimal behavioral improvement especially in group activities, his social skills have improved. **Conclusion:** Appropriate evaluation of splinter skills and forming intervention objectives can guide selection of appropriate approaches

these can be used in improvement of functional skills in patients with difficulties in activities of daily living and academic skills.

Key Words: Attention Deficit Hyperactivity Disorder, Academic skills, Cognitive Behaviour Therapy, Sensory Integration Therapy

Category: AIOTA Trophy for Best ePoster
Occupational Therapy Intervention in Fracture Upper Cervical Vertebrae A Case Report

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Background: Spinal cord injury (SCI) occurs due to trauma, vehicular accident is very common cause of cervical injury. The effect of cervical injury on functional abilities of the patient depends on level of injury (morphology), integration of disco ligamentous complex and neurological status. This leads to difficulty in daily living activities and active participation in routine activities. Intervention in such cases is a challenge to occupational therapist.

Objective: To assess the functional recovery by providing occupational therapy program using model of human occupation approach in SCI patients. **Study Design:** Single case study. **Methods:** Mohammad Kaif, 16 years male with alleged history of car accident on 12th August, 2015, at UP with history of loss of consciousness and admission in private hospital in Varanasi for 10 days (treatment details not available); history of progressive weakness in right upper and lower extremity followed by difficulty in walking. He was diagnosed as a case of fracture with displacement of C2 over C1 vertebra. He showed subaxial Cervical Spine Injury Classification system-score 4 and ASIA Impairment Scale Classification D incomplete paralysis. He had limited head and neck movement. Fair to poor muscle power in arms, body and legs. He was treated conservatively on crutch field tongs for 30 days. Then he was referred for rehabilitation. He was evaluated using Canadian Occupational Performance Measures (COPM). He was given tailor made. Total contact brace made of low temperature thermoplastic. Model of human occupation approach along with biomechanical frames of reference was used for further rehabilitation. Follow up was taken after 10 days. **Result:** Patient showed satisfaction after he was able to sit and walk with brace. His scores of performance on preferred activities improved markedly. He was very satisfied about his improvement in functional abilities which was revealed in his COPM performance score. **Conclusion:** Cervical spine injuries can have grievous consequences if not managed skillfully. Functional outcome after intervention may not be good. But with good team work the results can be satisfactory. As seen in present case appropriate clinical reasoning and selection of right approach can result in good outcome after occupational therapy intervention.

Key Words: Canadian Occupational Performance Measures, Cervical Spine Injuries, Functional Abilities, Satisfaction

Category: AIOTA Trophy for Best ePoster
Case Report: Effect of Multidisciplinary Intervention Program in West Syndrome

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Background: West syndrome characterized by seizures in the first year of life, developmental regression and specific electroencephalogram findings, develops in children between 3 and 8 months of age 1-3. However, there is scarce evidence documenting the effect of developmental intervention on clinical outcomes.

Objectives: The present study aims to compare the pre- and post-intervention functioning of a child diagnosed with West syndrome.

Study Design: Clinical evaluation reports were analyzed to document a case report. The child first reported at 2½ years of age (presently 7 years) with delayed milestones. He was non-verbal, restless and he had sensory concerns and difficulties in interaction. At 5 months of age, he had generalized tonic-clonic seizures, associated with frothing at mouth (no fever or salaam spasms). **Methods:** The child received multidisciplinary intervention program including periodic developmental pediatric consultation, physical and occupational therapy and parental counseling. The child has been receiving intervention since November 2011, with regular follow-up.

Results: After a year, the child could stand with one-hand support and walk with support. Strength and voluntary control improved in extremities. Cylindrical and spherical grasp developed. Sensory concerns reduced (e.g. rocking movements, head banging and hand flapping had stopped). The child could maintain eye-contact, consistently respond to his name and recognize family members. After 4 years of intervention, he could sit independently, walk with support, climb two stairs by crawling and change from standing to sitting position with greater balance. He could sit in one place for 20-25 min. **Conclusion:** Early multidisciplinary intervention program, with emphasis on occupational and physical therapy with parental counseling, can significantly improve functioning in West syndrome.

Key Words: West Syndrome, Seizures, Multidisciplinary intervention

Category: AIOTA Trophy for Best ePoster
Predictors of Shoulder Subluxation in Post-stroke Hemiparesis

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Background: Shoulder subluxation is one of the common complications in post stroke hemiparesis. Up to 80% of the subjects experience the issue which may hamper their motor and functional recovery. Various factors are responsible for the occurrence of subluxation. **Objective:** To determine the predictors of shoulder subluxation in post-stroke hemiparesis. **Design:** Cross-sectional study. **Methods:** Setting - Occupational therapy Department of Rehabilitation Institute. **Outcome Measures:** Fugl Meyer assessment – upper extremity (FMA-UE), Brunnstorm stages (BRS), Postural Assessment Scale for Stroke patients (PASS), sensory assessment, Barthel index, Modified Rankin scale, Modified Ashworth scale. **Intervention:** Conventional occupational therapy. **Results:** Out of 50 subjects 90% were male, 54% were ischemic, duration of onset (mean = 16 months), age (mean = 49.72 years). The findings exhibited that the FMA-UE ($P < 0.05$), BRS-UE ($P < 0.025$), BRS-lower extremity (0.014), PASS ($P < 0.034$), hemorrhagic stroke ($P < 0.05$), and diabetes ($P < 0.045$) were the strong predictors of shoulder subluxation among the study participants. **Conclusion:** Shoulder subluxation is the secondary manifestation of stroke, occur due to different reasons. Understanding of these factors will be helpful in prevention of the subluxation as well as facilitating the motor recovery.

Key Words: Hemiparesis, Shoulder Subluxation, Stroke, Rehabilitation

Category: AIOTA Trophy for Best ePoster
Case Study: Activities of Daily Living Independency in Down's Syndrome through Play

Priyatam Dandavate, Rakesh Shitole

Background: 16-year-old male patient master ABC born with non consanguineous marriage 1 month pre term baby. Mother's age was 32 years at the time of delivery. Child's overall developmental milestones were delayed along with severe lack in speech and communication. Both parents are nurturing so the child was too much of pampered and was facing difficulties to complete his activities of daily living (ADL) with respect to lack of inner drive and appropriate parental approach. **Objective:** (1) To develop inner drive for ADL independency through play, (2) to develop appropriate parenting approach. **Study Design:** Single case study. **Methods:** Child's parents were underwent Waisman ADL Scale (W-ADL) where he scored only 5 in 17 items showing child is still totally dependent on his parents to carry out his ADL. Parents were also underwent for parenting style questionnaire which describe their parenting style as authoritarian style. **Result:** After regular 45 min play based occupational therapy intervention and regular follow up of appropriate parenting approach for 3 sessions per week for 2 months, W-ADL SCORE was 12 out of 17 which shows the minimal independency level. **Conclusion:** Thus can be concluded that with play based occupational therapy intervention and appropriate parenting style, child can perform well in the area of ADL independency.

Key Words: Activities of Daily Living, Play, Downs syndrome

Category: AIOTA Trophy for Best ePoster
Designing Questionnaire to Assess Parents' Perception of Quality Care For Interdisciplinary Services in Cerebral Palsy: In Context to Occupational Therapy

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Background: Parents' satisfaction is important and commonly used indicator for measuring the quality in healthcare. Interdisciplinary approach is the foremost step towards the goal of high quality care. In our institute, since last three years, cerebral palsy patients are being treated by interdisciplinary team. Occupation therapy being an integral part of cerebral palsy patients' overall treatment program, is a core component of this team. The goal of occupational therapy is to promote child's ability to perform daily activities in a way that will enhance their quality of life. As the interdisciplinary service is in budding stage, assessing patient's perception for occupational therapy services has become a keystone for knowing and improving our services for more and more benefits to the clients. Since no measure is available in Indian setup to assess the perception of parent's satisfaction with occupational therapy services, a questionnaire was formulated to assess the parents' perception. **Aims:** To design a questionnaire of parents' perception of quality of care in occupational therapy services. To test the parents' perception questionnaire for validity. **Methodology:** Qualitative data obtained from face to face interview with 50 parents of cerebral palsy children for seven domains attending regular interdisciplinary services and following in occupational therapy department. Questionnaire is formulated in English, Hindi and Marathi language. Four point Likert scale was used for finding parents' responses. And questionnaire was tested for validity. **Result:** After administration of the questionnaire, overall high parents' satisfaction was noted. Responses for domains like effectiveness and timeliness of care was found more significant.

Conclusion: This self-reported questionnaire was found to have proven validity. Thus it can be concluded that the parents' perception questionnaire was effective in cerebral palsy care, which will help in making favorable changes in quality of care as well as reducing the parental stress.

Key Words: Cerebral Palsy, Interdisciplinary Team, Parents' Perception Questionnaire

Category: AIOTA Trophy for Best ePoster
Effect of Play Therapy Along with Constraint Therapy for Radial Dysplasia with Pollicization: A Case Study

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Background: Radial dysplasia, also known as radial club hand, is a congenital difference occurring in a longitudinal direction resulting in radial deviation of the wrist and shortening of the forearm. **Objective:** To propose post-operative occupational therapy (OT) intervention for thumb dysplasia in child who is undergone an index pro thumb pollicisation surgery. **Study Design:** Single case study. **Methods:** 19-month-old male child assessed 6 months following right side pollicisation. Child presented with neglect of right hand and faulty posture in form of right shoulder elevation, neck tilt to left side. It was resulting into limitation in participation in functional play due to right hand neglect. Child undergone OT sessions over 4 months twice in a week focusing on to protect the surrounding soft tissue structures of the new thumb, control the onset of oedema, to re-model the surgical scar and activities in form of play along with constraint therapy was initiated. Scales were used for assessment and outcome measure - Erhardt Developmental Prehension Assessment (EDPA). **Result:** Improved grasp with right hand and posture. EDPA score for right side: Improved 5 months to 7 months, obtained optimal gestuality and improvement in functional play activities with bilateral use of hand. **Conclusion:** OT had recognized the complexity of patient's condition and used a holistic approach. Play therapy along with constraint therapy, exploration to senses and motor integration for operated hand was effective in improving functional use of right hand. Patient's parents reported 40-50% of functional recovery. Strategies to improve use of operated hand by play therapy with constraint therapy as well as functional training has improved the participation and reduced activity limitations. This practice can be implemented as early intervention. More number of OT sessions are recommended to prove its effectiveness.

Key Words: Constraint Therapy, Play Therapy, Pollicisation, Radial Dysplasia

Category: AIOTA Trophy for Best ePoster
Cognitive Rehabilitation within Home Setting with Use of Decision Making and Dynamic Assessment Models and Along with Saturational Cuing and Remediation Therapy in a Patient with Traumatic Brain Injury: A Single Case Study

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Background: Adults with acquired brain injury often have performance deficits in self-care and community living skills. These are caused by dysfunction in cognitive and emotional component skills of occupational behaviors. A subject with acquired brain injury was treated with remediation and compensatory techniques but application of it in daily performance is limited. So, decision making and dynamic assessment models were used to analyze patient's performance components and context to select and modify treatment. **Objective:** To assess the effect of individualized cognitive rehabilitation with use of decision making and dynamic assessment models along with saturational cuing and remediation therapy in a patient with traumatic brain injury (TBI) within home environment. **Study Design:** Prospective single case study. **Method:** A 36-year-old male, printing press owner with diagnosis of TBI was assessed after 4 years of injury and revealed cognitive deficits, difficulty in learning and activities of daily living (ADL) activities. Remedial training included table-top activities like playing cards, checkered board and bead stringing which focused on recall of information. Studies using retrieval techniques have demonstrated patient's ability to learn in clinical settings but application of it in daily occupation performance is limited. So, decision making and dynamic assessment models were used for treatment intervention along with remediation therapy. External compensation techniques (checklist) and microcassette tape recorder were used to improve patient's independent performance of ADL or work tasks along with saturational cuing. Training sessions were taken twice a week and follow-ups were taken after 15 days for 6 months. **Results:** It was found that patient maintained learned routines with remediation therapy and external compensation and was able to verbalize routines and strategy. Patient showed improvement in attention and memory tasks, managing ADL and work tasks and returned to his occupation after 6 months. **Conclusion:** The study suggests that patient with TBI treated in traditional clinical settings with remediation therapy may greatly benefit from home based treatment to maximize patient's functional independence. Thus, decision making and dynamic assessment models assists to review patient's strengths, weakness and psycho-social-environmental factors that affect treatment plan and help in meaningful, long term improvement in patient's performance areas. **Key Words:** Activities of Daily Living Independence, Cognitive Deficits, Saturational Cuing, Traumatic Brain Injury

Category: AIOTA Trophy for Best ePoster
**Geographical and Institute Affiliation of Last 10 Years
Publications of Indian Journal of Occupational Therapy**

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Background: Indian Journal of Occupational Therapy (IJOT) predominantly published research of Indian occupational therapist. This study was done to find out geographical location and institutional affiliation of IJOT published article for last 10 years. **Objective:** To find out geographical and institutional affiliation of authors of IJOT whose article published in IJOT from 2006 to 2015. **Study Design:** Bibliometric study. **Methods:** A total number of 30 issues of the IJOT from 2006 to 2015 were included for this study. All articles were retrieved from MedIND website. Then each study was evaluate in terms of geographical and institution affiliations primarily based on place of research. **Results:** Total 106 articles published in ten years period. Out of 106 articles four article were excluded. Two articles were authored by foreign authors. Another two were not research articles. Three fourth (75.49%) of the articles published in this period were from academic institute and almost half of published articles were from Maharashtra state (47.05%). **Conclusions:** Results of this study is an indicator for research productivity in the field of

occupational therapy across different regions and institutions of India. Contribution by academic institute were highest but there were differences observed among academic institutions which may be the one indicator of their research output.

Key Words: Geographical Affiliation, Indian Journal of Occupational Therapy, Institute Affiliation, Occupational Therapy

Category: AIOTA Trophy for Best ePoster
**Tricks, Imagination, Magic and Dreams: Children as
Agents of Change in the Occupational Therapy Process**

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Background: The practice of being client-centered in occupational therapy has been avidly advocated in recent times. However, there is limited literature available about how it is being used with children managing problems. In aligning to client-centeredness, children are viewed as experts and as active agents with regard to the difficulties and disabilities. This alignment raises many questions for occupational therapists. How can children be fully engaged as equals in the therapeutic process? How do we invite children to bring forth their playfulness, imagination, and inventiveness in the face of serious problems? What makes it possible for young people's voices to be heard and for them to feel empowered?. **Objective:** This paper explores children's identities as agents of change in their own lives through use of client centered approach within the context of occupational therapy. **Study Design:** A multiple case study. **Method:** The paper will review transcripts and case documentation of therapy sessions with children managing problems, examine and explore transcripts and case snippets of working with children with disabilities. It will highlight possible ways to recruit creativity and imagination and make children equal collaborators in the occupational therapy process. This reflection will be aided by a lens attuned to detect skills and agency in children in managing their disabilities. **Conclusion:** The paper highlights that viewing children as "facing the problem" rather than "being the problem" starts to shift their identity from a passive recipients of therapy to agents of change in the therapeutic process. It reiterates use of client-centeredness in pediatric occupational therapy and provides a possible framework for incorporating the same into pediatric occupational therapy practice. **Key Words:** client centered Occupational therapy, OT Process, Agent of change

Category: AIOTA Trophy for Best ePoster
**Application of Model of Human Occupation Approach in
Recurrent Acute Transverse Myelitis**

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Background: Acute transverse myelitis (ATM) is acute inflammation of gray and white matter in one or more adjacent spinal cord segments, usually thoracic. Causes include multiple sclerosis, neuromyelitis optica, infections, autoimmune or post infectious inflammation, vasculitis, and certain drugs. Model of Human Occupation (MOHO) is a systems model in which the human being engaged in occupation expresses a complex interaction of aspects that cannot be fully comprehended when viewed separately. Engagement in occupation requires three subsystems intricately linked to produce performance: Volition; habituation and performance. Quality of life (QoL) is the general well-being of individuals and societies, outlining negative and positive features of life. It observes life satisfaction, including everything from physical health, family, education, employment, wealth, religious beliefs, finance and the environment. Modified Barthel index is an

ordinal scale used to measure ten variables describing activities of daily living (ADL) and mobility. **Aim:** To study the use of MOHO approach in acute occupational therapy hospital setting for a patient diagnosed with ATM. **Objective:** To improve QOL and ADL scores in patient with ATM using the MOHO Frame of Reference. **Study Design:** Single case study. **Methodology:** A 25-year-old unmarried male home guard by profession diagnosed as case of recurrent ATM and having paraplegia since December 2015 was taken for study. MOHO based intervention was used. The intervention was client-centered (Law, 1998), occupation focused (Kielhofner, 2008) and included attention to the patient's volition (Reilly, 1962). This effected in changes in the patient's QoL and ADL as measured on QoL and modified Barthel index respectively. **Result:** MOHO approach improved the scores on QOL and modified Barthel index. **Conclusion:** MOHO is an effective approach for improving QOL and functional independence in acute hospital setting for a patient with ATM.

Key Words: Activities of Daily Living, Acute Transverse Myelitis, Model of Human Occupation, Quality of Life

Category: AIOTA Trophy for Best ePoster Is It Motor Or Is It Sensory? - A Case Report

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Background: Sensory based motor disorder presents as a disorder where there are difficulties in stabilizing, moving, sequencing a series of movements in response to sensory demands. Hypotonia is decreased muscle tone that can present due to underlying neurological or non-neurological cause. **Objective:** To determine whether the child's presenting difficulties were motor or had a sensory base to it. To determine what strategies will work best in treatment plan. **Study Design:** Single case study design (9 months 25 March-25 December). **Method:** A child with development delay and general body hypotonia age 3 years 11 months participated in the study over the period of 9 months. Assessment used were pre school checklist (3-4 years) and Hawaii Early Learning Profile (24-36 months). He presented mixed picture with low muscle tone, sensory sensitivities, speech delay and balance skills difficulties. Goals were set to improve his motor skills and sensory processing difficulties. His mixed presentation made therapist question whether his difficulties were primarily sensory or more motor in nature. Intervention provided included desensitisation, oral motor and vestibular activities twice a week and parent education about nature of difficulties. **Results:** Child as result of combined approach of sensory activities and muscle strengthening achieved independent transition movements, crawling, more speed in movements, independent stair ascending and descending, exploring of playground equipment (without fear), improved strength in upper limb, improved confidence and self-esteem, blowing and partial sucking achieved and improved speech. **Conclusion:** Difficulties present were a combination of sensory along with motor difficulties. A treatment approach geared at addressing both the issues was found to be more effective as supposed to just purely motor.

Key Words: Developmental Delay, Hypotonia, Sensory processing

Category: AIOTA Trophy for Best ePoster Mobile Health Solution for Improving Functional Outcomes for Children with Developmental Disabilities

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Background: Developmental disabilities (DD) are evident from early childhood and include intellectual disability, autism and cerebral palsy (CP). A recent epidemiological study in India, revealed a prevalence rate of 8.9%. The vast majority of these children do not have access to evidence based strategies to promote development and address impairments making this a regional health priority. m-Health is being used innovatively to leapfrog barriers of delivery at scale in other areas of health. **Objective:** The main objective was to design an m-Health platform to disseminate evidence-based practices for children with DD specifically increasing their participation in routines through community health workers under supervision; to parents of children with DD. **Method:** The authors will share the process of developing and piloting the INFORM platform. **Result:** The presentation will describe its use and functions of the platform which currently allows the registration and screening of children suspected of a DD; a referral pathway for confirmation of the diagnosis; a system of leveling a child with CP based on their degree of impairment and a checklist which allows the platform to generate an individualized plan. This comprises of videos enabling the families of children with CP to establish best practices during daily routines. **Conclusion:** The INFORM platform can help disseminate evidence-based practices for children with DD specifically addressing their participation in daily routines through community health workers in low resource setting.

Key Words: INFORM, Health platform, evidence based practice

Category: AIOTA Trophy for Best ePoster Normative Performance of Indian Older Adults on Modified Jebsen Hand Function Test

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Background: Hand function is very important component for assessing upper extremity functions. Older adults have decline in manual dexterity, strength, and increase in time performance for functional tasks (Rahman *et al.*, 2002). Eerdts *et al.* (2004) modified the Jebsen Hand function test (JHFT) to develop a quick assessment of gross hand functions. **Objective:** To determine the age and gender influence on modified Jebsen hand function test (mJHFT) and to establish norms for Indian older adults between the age of 60 and 80 on mJHFT. **Study Design:** Cross-sectional study. **Methods:** Community-dwelling older adults without a previous history of hand trauma, any orthopedic conditions or diabetic neuropathy and cognitive impairment were included. The hand function was assessed for both dominant and non-dominant hand using the mJHFT i.e. flipping over cards, stacking cones, spooning beans. 177 older adults were recruited, 92 men and 85 women in the two groups i.e. 60-70 and 71-80 years. The influence of age and gender was analyzed using two-way ANOVA. **Results:** No significant gender difference ($P > 0.05$) was found on mJHFT subtests. Age showed significant influence ($P < 0.05$) on performance on mJHFT. Decline in hand function was found to be more in women compared to men after 70 years of age. Age and gender interaction was found to be significant ($P < 0.05$) on all subtests of mJHFT except the subtest of spooning beans. **Conclusion:** The finding of the study provides normative data for Indian older adults based on age and gender between 60 and 80 years. Performance on mJHFT is influenced by age and not by gender. However, after 70 years of age the performance of Indian older women declines as compared to men, probably due to disuse related to cultural influences on activity engagement and poor health status.

Key Words: Hand Dexterity, Gross Hand Function Test, Jebsen Hand function test

NEWS AND INFORMATION

Occupational Therapy Definition

(Modified & approved by AIOTA on April 25, 2017)

There was need to revise the definition of occupational therapy in India in context to current practice as on today. AIOTA EC worked out on it and finalized the OT Definition. The updated definitions of Occupational Therapy from member organizations including India is uploaded on the WFOT website www.wfot.org – Resource Centre > General. The definition is as under for information to members and institutions:

‘Occupational Therapy is a holistic evidence-based client- centered first contact and/or referral profession of modern health care system, based on science of occupation, with primary focus on purposeful goal-oriented activity/occupations, enhanced with the use of latest technological systems for evaluation, diagnosis, education and treatment of the patients (clients) of any age group, whose function(s) is (are) impaired by physical, psychosocial and cognitive impairments, development disorders, or the ageing process affecting their quality of life, with the aim to prevent disability, promote health & well-being and return to optimum occupational roles’.

Specific occupational therapy services include but are not limited to: preventive health literacy, assessment & interventions in activities of daily living (ADL), work & productive activities, play, leisure and spiritual activities; functional capacity analysis, prescription, designing and training in the use of assistive technology, adaptive equipment & splints, and environmental modifications to enhance functional performance.

NEW OT Colleges

AIOTA is pleased to inform opening of new OT Colleges in India in recent years

1. Mahatma Gandhi University of Medical Sciences and Technology, Jaipur
2. Goa Medical College, Goa
3. National Institute for Empowerment of Persons with Multiple Disabilities (NIEPMD), Chennai

Following discontinued BOT education programs are re-started in the state of Tamil Nadu from the academic session 2017:

1. Saveetha University, Chennai
2. Meenakshi Academy of Higher Education & Research, Chennai
3. Annamalai University, Annamalai Nagar
4. Sri Ramchandran Medical College, Chennai (also in process)

OTICON'2018, Nagpur: Pre-Conference COTE

Occupational Therapy School & Center, Government Medical College, Nagpur is celebrating its Diamond Jubilee in 2018. To commemorate this special occasion Nagpur Branch of AIOTA and OT School is organizing OTICON'2018 ie 55th Annual National Conference of AIOTA from Feb.16-18, 2018 on the theme ‘Occupational Therapy: Independence, Empowerment, Inclusion’.

M.M. Sangoi Trophy for Best Paper on ‘Ergonomics, Environment & Access’, is being introduced from OTICON'2018- Nagpur. The AIOTA Trophy for best paper on Mental Health will also now be known as ‘Vijay Suple Trophy for Best Scientific Paper on Mental Health’.

ACOT will conduct Pre-Conference COTE on 16th Feb on the topic “Industrial Health & Occupational Therapy”(Environment, Ergonomics, Safety and Wellness at Work place). COTE will be conducted by the following faculties of repute:

1. Dr. Nandu Nandoskar (OT), Founder & Director of Occupational Health, Adelaide, Australia and Founder & Director of Fit 4 Health, India
2. Dr. Paresh Chandra Ghosh, Ergo-physiologist & Former Director of Central Labor Institute, Mumbai. & consultant in Tata Steel & many other industries.

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Website: www.aiotanagpur.in/oticon18

WHO launches Video Courses on Outbreaks and Emergencies

On 15 June 2017 WHO has launched a series of video courses on epidemics, pandemics and health emergencies. Geared for those working in emergencies, the courses are also accessible to the public.

The courses – which are on a platform called OpenWHO – transform complex scientific knowledge into easy-to-understand introductory video lessons, using a smaller bandwidth so that people in any country can access them. Offline versions are available on both IOS and Android devices. The platform can host an unlimited number of users and is free and open to anyone wishing to register.

OpenWHO has three main channels:

1. Outbreak focuses on diseases that are epidemic or pandemic-prone such as Ebola, yellow fever and pandemic influenza.
2. GetSocial! covers social science interventions such as risk communication, community engagement and social mobilization.
3. Ready For Response offers courses on WHO’s emergency response framework, Incident Management Systems and pre-deployment trainings for people who might be sent to countries for emergency response.

(In addition, there is a channel for partners in the Global Outbreak Alert and Response Network (GOARN), which provides them with the training necessary to participate in responses.)

The content can be accessed on :

- OpenWHO: <https://openwho.org/>
- Android app: <https://play.google.com/store/apps/details?id=de.xikolo.openwho&hl=en>
- IOS app: <https://itunes.apple.com/us/app/openwho/id1183923481?mt=8>

Information:

Dr. Gaya Gamhewage

gammewageg@who.int

Courtesy: www.wfot.org

Disaster Management for Occupational Therapists: Online Module

This self-paced online program enhances occupational therapists’ knowledge and skills for tackling complex issues such as disaster response, resilience and disaster risk reduction. Information will be provided in innovative ways through real time interactive simulations as well as online documents. Participants will enhance their critical thinking through real life and fictitious problem solving activities. The textbook, Disaster and Development: An Occupational Perspective will offer the adjunct materials to enhance learning and integration. The first 100 people to purchase the online module will receive a free copy of the Disaster and Development publication. Members

of AIOTA may request to get a copy from WFOT on prize of USD 99. For more details visit dmot.wfot.org

Courtesy: www.wfot.org

Extension of Age of Retirement of OT's in the State of Bihar

The age of retirement of OT's with BOT qualification, of State of Bihar, is extended from present 60 years to 67 years w.e.f. May 2017. Notification to this effect has been issued by Government of Bihar. For more information may write to Dr Kishore Kumar HOD, Controlling Officer & DDO, Bihar College of Physiotherapy & Occupational Therapy, Patna. Email: bcphod@gmail.com

Nominated

• Educational Program Reviewer for WFOT

Nomination of Dr. Jyothika Bijlani, Dean Academic Council of OT of AIOTA is accepted as 'Program Reviewer' for WFOT Education Programs.

• Reviewer of Abstracts for WFOT Congress

WFOT Congress is scheduled to be held for the first time in the African continent from 21 – 25 May 2018 in Cape Town, South Africa. WFOT Congress Program Committee has accepted nomination of the following AIOTA officials as reviewer for this congress from India:

1. Dr. Shashi Oberai, Vice President AIOTA, Navi Mumbai
2. Dr. Amitabh K. Dwivedi, EC Member AIOTA and Principal Jaipur OT College, Jaipur

Awarded

After successful completion of the course following AIOTA Officials were awarded Ph.D. in Occupational Therapy recently by Maharaja Vinayak Global University, Jaipur:

1. Dr. R.K. Sharma, EC Member AIOTA and Principal /HOD Santosh Occupational Therapy College, Ghaziabad
2. Dr. Amitabh K. Dwivedi, EC Member AIOTA and Principal Jaipur OT College, Jaipur

Appointed

Dr. Joseph Sunny, EC Member, AIOTA got appointed as Consultant Occupational Therapist at Child Development Centre of Government of Kerala at Thiruvananthapuram Medical College,

It is for the first time that Kerala Government took initiative to appoint an occupational therapist as Consultant in a Child Development Centre under government sector.

AIOTA Examination-3 for grant of Provisional Membership

Academic Council of Occupational Therapy has conducted examination for grant of Provisional Membership of AIOTA to those who had obtained their BOT qualification from an institution not accredited by AIOTA/WFOT. The Examination Committee duly appointed by ACOT conducted written examination at Chembur Gymkhana Club, Mumbai on June 4, 2017. Out of 24 examinees appeared, 22 were declared successful.

EVENTS

July 19-21, 2017: Occupational Therapy Australia 2017 National Conference and Exhibition - Perth, Australia on the theme Partnership, Inclusion & Innovation. Information-email: conference2017@otaus.com.au

July 21-22, 2017: 2 days' workshop on 'The Stages of Play and its Importance in Stimulating Development in Children with Developmental Delay' was organized by F.A.M.E. Academy under FAME India, Bangalore for special educators, main stream teachers, occupational therapists, physiotherapists, speech therapists, psychologists, parents & Montessori teachers at Jayanagar.

July 22-23, 2017: Indian Association of Assistive Technology organized workshop on 'Assistive Technology –Need of Today' at Saifee Hospital,

Mumbai for P & O, Medical doctors, occupational therapists & physiotherapists etc. Information- mehtarahab@yahoo.co.in Website: www.iaat.co.in

Oct. 20-22, 2017 : The 1st Asia Pacific Occupational Therapists Symposium will be convened at Taoyuan, Taiwan on the Theme- 'Contextualizing Occupational Therapy; Research, Practice and Education'. Information – APOTS2017 Website: <http://www.apots2017.org/>

Nov.3-4, 2017: National Occupational Therapy Conference, Singapore Information: email: note@firstwave.sg

Dec.7-10, 2017: The 2nd International Developmental Pediatrics Association Congress is being hosted by International Developmental Pediatric Association (IDPA) and Ummeed Child Development Center, Mumbai. The theme of the Congress is 'A World of Difference' Information –email: idpacongress2017@fitevents.com Website: <http://www.idpacongress.org/contact-us.html>

AIOTA MEMBERSHIP AND ASSOCIATED FEE STRUCTURE

Effective from April 1, 2017

[In accordance with the decision taken in GB Meeting on Feb. 18, 2017 at Jaipur]

1. **Life Membership Fee** (Valid for 15 years)- Rs. 8000 + Rs. 500 Application
2. **Provisional Membership Fee** (Valid for 15 years) - Rs. 8000 + Rs. 500 Application Fee
3. **Renewal of Membership Fee**- Rs. 5000 & if late to Renew- Rs. 5500
4. **NRI Life Membership Fee** -(Valid for 15 years) - US \$ 500 inclusive of application fee
5. **Renewal of NRI Life Membership Fee**- US \$ 300 & If late to Renew- US \$ 350
6. **Urgent Membership** – Rs. 12000
7. **Associate Membership Fee** -Annual Rs. 1500
8. **Student Membership Fee**- Rs. 1000- inclusive of Application Fee
9. **NRI Student Membership**- US \$ 40 -inclusive of Application Fee
10. **Change of Name in Certificates** -Rs 1 5 00 for two Certificates [AIOTA Membership & ACOT Certificate]
11. **Duplicate Certificate**- Rs.1000 for each Certificate
12. **License Verification & Good Standing**- Rs. 12000

Note:

- Life Members of AIOTA will have the right to contest and vote in AIOTA Elections
- Provisional, Students and Associate Members will not have right to participate in AIOTA Elections
- Provisional Members will have right to participate and contribute in AIOTA Conferences /COTE's and other academic events as Life Members of AIOTA.
- Decision of President AIOTA on disputes if any on above, shall be final and binding.

Dr. Pratibha M. Vaidya
Hon. Treasurer
treasurer@aiota.org

OTICON'2018



THE 55th ANNUAL NATIONAL CONFERENCE OF ALL INDIA OCCUPATIONAL THERAPISTS' ASSOCIATION



February 16th - 18st, 2018

At

Suresh Bhat Auditorium, Reshim Baugh Ground, Nagpur (MS)

THEME: Occupational Therapy – Independence, Empowerment, Inclusion
[Swawalamban, Sashaktikaran, Samavesh]

Welcome to Orange City

Dear Colleagues and friends,

On behalf of the organizing committee we are pleased to invite you to OTICON 2018, the 55th Annual National Conference of AIOTA being organized as a gala meet in Orange City, Nagpur from 16th to 18th February 2018. The heart of India Nagpur is also declared as Tiger Capital (Waghpur) of India because of many wildlife sanctuaries around Nagpur, The city has many places of pilgrimage, heritage buildings and architectural monuments.

OTICON 2018 is being organized to commemorate the sixty glorious years of existence i.e Diamond Jubilee of Occupational Therapy School and Centre, Government Medical College, Nagpur. The GMC Nagpur is also proud to inform that first degree course in occupational therapy in Asia was started in this center of repute. Every effort is being made to maximize the high standards of scientific updates and comfortable stay. We request Members & student members of AIOTA and OT professionals globally to join us for this grand feast of scientific presentations and make OTICON'2018 a memorable event.

Organizing Committee is looking forward to welcome you and assure for a warm hospitality and comfortable stay in the 'Orange City', Nagpur

Dr. Anil K. Srivastava
President AIOTA

Dr. Sofia Azad
Org.Secretary

Pre-Conference COTE (16th Feb, 2018)

Industrial Health & Occupational Therapy
(Environment, Ergonomics, Safety and Wellness at Work place).

AWARDS & TROPHIES

- **Kamla V. Nimbkar Trophy**
Best Scientific Paper (General) of OTICON'18
- **N. Swaroop Trophy**
Best Innovative Technology
- **Kailash Merchant Trophy**
Best Scientific Paper in Neuroscience
- **M.M. Sangoi Trophy (Newly introduced)**
Best Paper in Ergonomics, Environment & Access
- **Vijay Suple Trophy**
Best Scientific Paper in Mental Health
- **Gazala Makda Trophy**
Best Scientific Paper in Pediatrics
- **KEMOT Youth Talent Trophy**
(For young OT's- Graduated on or after 1st January, 2013)
Best Scientific Paper (Open Category)
- **AIOTA Trophy**
Best E-Poster

Deadline for submission of Abstracts for all categories
[competitive and/or non-competitive] : Oct.31st 2017

Registration:
Early Bird-up to Sept. 15, 2017
[Pay less by paying early]

ORGANISING SECRETARY

Dr. Sofia H. Azad

Principal & Professor

Occupational Therapy School and
Centre, Govt. Medical College, Nagpur-440003

Tel: 0712-2701684

Mob. : 91-9823060144, 9890936400

E-mail : oticon2018@gmail.com

For more information Registration and/or Contribution

Website

www.aiotanagpur.in/oticon18,
www.aiota.org

Chairman: Scientific Program

Dr. Neeraj Mishra

Executive Member, AIOTA

C- 20 A, C Block,
Near Radha Krishna Mandir,
Pandav Nagar, New Delhi- 110092

Mob: 9990663836

Email : neeraj_1_ot@yahoo.co.in



AIOTA'S
FELLOWSHIP IN ADVANCED OCCUPATIONAL THERAPY:
NEURO-DEVELOPMENTAL DISORDERS (INDIA) FAOT: NDD (INDIA)
in co-operation with National Trust, Ministry of Social Justice & Empowerment,
Government of India
[ORGANISED BY ACADEMIC COUNCIL OF OCCUPATIONAL THERAPY]

The AIOTA's innovative academic program "Fellowship in Advanced Occupational Therapy: Neuro-Developmental Disorders"(FAOT:NDD) is all set to be rolled in 2017 by Academic Council of OT [ACOT], to enhance the knowledge base of India's dynamic post graduates in the field of Occupational Therapy. The fellowship brings together expertise across the globe who have , through their immense contribution has taken Paediatric Occupational Therapy practice to higher standards.

This fellowship offers an opportunity to imbibe practical knowledge in the subject through didactic as well as web-based learning and strengthen clinical practice in light of advanced techniques and latest evidences

Credits: CEUs and transcripts shall be awarded.

Objectives:

- Identify deviations in development in early life to adolescence
- Choose, administer and interpret appropriate comprehensive assessment to detect symptoms or features suggestive of dysfunction
- To delineate and implement more than one treatment modality from the available evidences
- To supplement practice with newer alternative treatment modalities
- To communicate and empower caregivers
- To implement effective services in community

Eligibility:

- MOT in Paediatrics/Developmental Disabilities/ Neurosciences (The supporting documents to be attached)
- MOT in other specialties with Minimum of 3 years of experience with handling children with Neuro-developmental disabilities (The supporting documents to be attached)
- Life member of AIOTA
- Letters of endorsements (Minimum 2) from OT Professionals / Head of Institution of the applicant

Faculty:

International and national instructors with vast experience in the field of Occupational Therapy in Neuro-developmental disorders

Principal Resource faculty:

Dr. Erna Blanche (US)

Key Resource Faculties:

International Faculty: Dr. S. Chauhan (Kuwait), Dr.Sanjay K.,(Singapore), Dr. Harsh Vardhan (New Zealand) & Dr Denise Donica (US)

National Faculty:

New Delhi : Shri Mukesh Jain, Joint secretary & Chief Executive officer, National Trust for the welfare of person with Autism, CP, MR & Multiple disabilities & Dr. M Samnani

Mumbai: Dr. Anjali Joshi , Dr. V. Ashwini, Dr. A. Gupta, Dr. P Vaidya , Dr. S. Jaywant & Dr. Jyothika Bijlani

Coimbatore: Dr. Sujata Misal

Bhubaneswar : Dr. A. Senapati

Program duration: 9 months

Sept. 18, 2017- June17, 2018

divided into 3 parts

Part I: Preparatory phase- 1 week of didactic mentoring

[Venue: Mumbai]

Part II: online distant learning modules with project works -spread over 8 months

Part III: examination and certification-

1 week of mentoring ,examination and discussions [venue: Mumbai]

Fee structure:

one time payment per participant with registration

• **AIOTA Members:** Rs. 45,000/-

• **Non Members:** Rs. 65,000/-

• **Overseas Registrants:**

AIOTA Members: US \$ 1000/-

Non Members: US \$ 1500/-

Instalment facilities available as under:*

AIOTA Members:

Rs. 30000/- till Aug.10, 2017 with registration

Rs.10,000/- till Dec. 31, 2017

Rs.10,000/- till April 30, 2018

Non Members:

Rs. 40000/- till Aug.10, 2017 with registration

Rs. 20,000/- till Dec. 31, 2017

Rs. 20,000/- till April 30, 2018

[Travel and staying excluded]

Last date of registration:

August 10, 2017

Contact details: Dr. Jyothika Bijlani: +91 9820964567 | Dr. Shriharsh Jahagirdar : +91 9821011353
Email id: aiotafellowship2017@gmail.com • Website: www.aiota.org

The Administrative Committee

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Principal Co-ordinator: Dr. Jyothika Bijlani, Dean ACOT

Financial Advisor: Dr. Pratibha Vaidya, Treasurer, AIOTA

Co-ordinators: Dr. Shriharsh Jahagirdar and Dr. Lakshmanan S

ALL INDIA OCCUPATIONAL THERAPISTS' ASSOCIATION

EXECUTIVE COMMITTEE AIOTA 2016-2020



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For AIOTA / WFOT Accredited BOT / MOT Education Programs in India visit:
<http://aiota.org/pdf/BOT/bot.pdf> and <http://aiota.org/pdf/MOT/mot.pdf>

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