



# **IDENTIFICATION OF OCCUPATIONAL THERAPY DOMAINS FOR A NEW CONCEPTUAL MODEL OF ACTIVITY CONFIGURATION APPROACH STRATEGIES FOR PEDIATRICS HABITUATION AND REHABILITATION**

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## **ABSTRACT**

### **AIM**

The aim of this study was to identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for pediatrics habituation and rehabilitation.

### **SUBJECTIVES**

The study was done to evaluate the identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for pediatrics habituation and rehabilitation.

### **OBJECTIVES**

- To evaluate the identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for pediatrics habituation and rehabilitation

using Multifactorious Achievable Spatial Subjective- Occupational Therapy Goal checklist (MASS-OTG).

- To evaluate the sensory process adaptive skills of occupational therapy implementations among paediatric using Toddler sensory profile-2 and child sensory profile-2.
- To evaluate the occupational performance problems, concerns and issues, interview the client, asking about daily activities in self-care amongst paediatrics using Wee functional independence measure (WEEFIM).
- To evaluate the client satisfaction of occupational therapy implementations among paediatric using client satisfaction questionnaire-8 (CSQ-8).

## METHODOLOGY

Review studies met the inclusion criteria. In total, there were 150 participants within the review studies that were examined. Review studies explored identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for pediatrics habituation and rehabilitation. Assessment methods and findings were extracted from the selected studies. Information regarding the assessment tools used to determine activity configuration approach was extracted. Also extracted were the results of the activity configuration approach assessments used by the studies. 150 subjects (75 in experimental group and 75 in control group) of age group of 2 to 12 years participated in current study.

## RESULTS

The study designs included review qualitative studies and review of randomized control trial. Tools used to identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for pediatrics habituation and rehabilitation measure, included the SP-2, WEEFIM, MASS-OTG and the CSQ. Best practice for occupational therapy includes, facilitating goal setting with clients and communicating efficiently with parents, allowing them to ask questions for comprehension of the clinical aspects, explaining the child's procedures and providing follow up time to discuss improvements or setbacks.

## CONCLUSION

The conclusion of this study indicates that there is identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for pediatrics habituation and rehabilitation. in the studies reviewed suggest there may be value in understanding

parent consideration and Working as a cohesive, occupational therapy for the overall benefit of a child. Thus, proving the alternate hypothesis and rejecting the null hypothesis.

## KEY WORDS

Activity configuration approach, Occupational Therapy, MASS-OTG conceptual model, parent satisfaction, paediatrics habituation and rehabilitation, therapist parent relationships, parent preferences.

## INTRODUCTION

### Activity configuration

an assessment approach used by occupational therapists to determine an individual's usual use of time during a typical week. The technique is designed to elicit the person's perceptions of the nature of daily activities, environment factors, economical factor, cultural factor, and satisfaction with them



Activity configuration It is important that parents recognize and understand the improvements their children make during occupational therapy. McCall and Scheck report that parents' perceptions of occupational therapy interventions may be affected by lack of therapist communication and this could limit the beneficial effect of service provision for children if the parent's needs and expectations are not met Anne Rannard et al Health professionals failed to use systematic, evidence-based approaches in responding to early parental concerns. For this group of parents, such an approach resulted in long delays in referral for specialist intervention. Carrigan et al. states that determinants of parent satisfaction with occupational therapy interventions have been identified as seeing an overall improvement, enjoyment of therapy sessions, opportunities for group as well as individual sessions, provisions of home programs and school visits by the therapist.

The configurational approach displaced contingency theory as the dominant perspective in the literature on change in the 1980s. This perspective is characterized by its "holistic" view of organizations, which are conceived as "composed of tightly interdependent and mutually supportive elements such that the importance of each element can be understood by making reference to the whole configuration" (Miller & Friesen, 1984,).

New conceptual model of activity configuration approach strategies for pediatrics habituation and rehabilitation (MASS-OTG). the activities in which you engage in for each 1/2 /24 hour of the day, for 24/24 consecutive hours. Remember to note the amount of time child sleep (final entry would be bedtime). Activities are everything that you do (wash up, watch TV, study, eat, socialize, hang-out, go to class, etc). Activity configuration schedule is based on a typical day during the week consisting of a mix of responsibilities and other activities.

## AIM AND OBJECTIVES

### AIM

The aim of this study was to identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for pediatrics habituation and rehabilitation.

### OBJECTIVES

- To evaluate the identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for pediatrics habituation and rehabilitation using Multifactorious Achievable Spatial Subjective- Occupational Therapy Goal checklist (MASS-OTG).
- To evaluate the sensory process adaptive skills of occupational therapy implementations among paediatric using Toddler sensory profile-2 and child sensory profile-2.
- To evaluate the occupational performance problems, concerns and issues, interview the client, asking about daily activities in self-care amongst paediatrics using Wee functional independence measure (WEEFIM).
- To evaluate the client satisfaction of occupational therapy implementations among paediatric using client satisfaction questionnaire-8 (CSQ-8).

## HYPOTHESIS

### NULL HYPOTHESIS

There is no significant identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for pediatrics habituation and rehabilitation.

### ALTERNATIVE HYPOTHESIS

There is significant identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for pediatrics habituation and rehabilitation.

## REVIEW OF LITERATURE

### ➤ Jim Hinojosa, Christine T. Sproat, Supawadee Mankhetwit et al (2002)

The aim of the study was to describe the effect of Occupation- and Activity-Based Interventions on Instrumental Activities of Daily Living Performance Among Community-Dwelling Older Adults. Results Respondents reported that working with parents, more than any other aspect of intervention, had the greatest impact on the progress of a child with disabilities. Consistent with the 1987 survey, respondents believed that parents focus on their own adjustment to their child's disability as well as on their child's progress more than any other issues. Therapists continue to report satisfaction when generating positive change for child and parent through education and use of clinical knowledge and skill.

### ➤ Anita C Bundy et.al 1989

The aim of the study was to describe the comparison of the play skills of normal boys and boys with sensory integrative dysfunction. The purpose of this investigation was to determine whether the mean scores on the Preschool Play Scale (PPS) of a group of young boys with SI dysfunction were significantly lower than those of a group of their normal peers. However, many of the boys with SI dysfunction obtained normal PPS scores. This suggests that therapists should routinely assess the play skills of young children referred to them for SI evaluation.

### ➤ **Sara E. Green et al (2002)**

The aim of the study was to describe the maternal satisfaction with clinics providing physical, occupational therapy services to children with disabilities. Little is known about maternal satisfaction with clinics that provide physical, occupational and speech therapy services to chronically impaired children. Data are drawn from a survey of 81 mothers of children regularly treated at one of three paediatric therapy clinics, and from extensive interactive interviews with seven of these mothers. The greater the degree of perceived stigma, the more important the social environment of the clinic is to overall satisfaction among mothers who do not prefer interactions with the wise.

### ➤ **Caitlin M Moll, Meghan N Billick, Kristin et al (2018)**

The aim of the study is to analyse to determine parent satisfaction with OT interventions for variety of paediatric conditions. Conclusion, The studies reviewed suggest there may be value in understanding parent consideration and working as a cohesive, interdisciplinary team for the overall benefit of a child.

### ➤ **Jim Ysseldyke , Adam J. Lekwa , David A. Klingbeil et.al (2012)**

The aim of this study was to examine assessment of ecological factors that affect individual mental health or academic functioning is an important component of educational and psychological consultation. We conclude by highlighting specific needs for further research and development in ecological assessment, including expansion and improvement of assessment methods, improvement of available instrumentation, and increased attention toward effective implementation.

### ➤ **Sally Hobbs Cubie, Kathy Kaplan, et al, (1982)**

This paper introduces a method for analyzing clinical cases, which is based on ten primary questions and on criteria for selecting level of treatment. The questions and the criteria are derived from the model of human occupation. Four steps in the method are: gathering data in relevant categories; reviewing and analyzing data using the questions in sequence; selecting levels of treatment; and recording case studies. Three brief case studies taken from an acute care psychiatric setting are described to illustrate the use of this method.

Patient satisfaction with psychiatric outpatient care in a university hospital setting

➤ **John Lally, Fintan Byrne, Eimear McGuire, Colm McDonald, (2013)**

The aim of the study was to measure patient satisfaction with psychiatric outpatient care in a university hospital setting. Methods. Outpatients were invited to complete the Client Satisfaction Questionnaire-8 (CSQ-8), a well validated self-report instrument, along with some additional questions on their attitudes to the service. The majority of patients expressed a preference for maintaining outpatient care in the general hospital setting, rather than transferring to a stand-alone mental health facility in a suburban setting.

➤ **BB Flynn, B Huo, X Zhao et al 2010**

The aim of the study was to describe the configuration approach, the impact of supply chain integration on performance: A contingency and configuration approach. This study extends the developing body of literature on supply chain integration (SCI), which is the degree to which a manufacturer strategically collaborates with its supply chain partners and collaboratively manages intra-and inter-organizational processes.

➤ **Patricia A. Sperle; Kenneth J. Ottenbacher; Susan L. Braun; Shelly J. Lane; Susan Nocajski et.al,2020**

The aim of study examined the equivalence reliability of two administration methods for the Functional Independence Measure for Children (WeeFIM®). The results demonstrate good agreement for total ratings when the WeeFIM is administered by direct observation and by interview with a parent. The findings establish the clinical usefulness of information collected by clinical interview.

➤ **Barbara Prudhomme White; Shelley Mulligan; Kristen Merrill; Janet Wright et.al,2020**

The aim of the study is analyse to Examination of the Relationships Between Motor and Process Skills and Scores on the Sensory Profile. This quasi-experimental study sought to determine whether children with possible sensory processing deficits, as measured by the Sensory Profile, performed less well on an occupational performance measure compared to children with typical Sensory Profile scores. The results suggest that children identified with sensory processing deficits on the Sensory Profile are likely to experience some challenges in performing everyday occupations.

## METHODOLOGY

The aim of this study was to assess the identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for paediatrics habituation and rehabilitation .

## RESEARCH DESIGN

**Study Design** The study is done with two group of pre-test and post-test of quasi experimental design . Experimental group=pre test ( new conceptual modal of activity configuration approach strategies for paediatrics habituation and rehabilitation + interaction) post test. Control group = pre test (interaction) post test.

### POPULATION

Accessible population was adapted in this study.

### SAMPLING SIZE

150 subjects are included in this study.

### SAMPLE TECHNIQUES

Convenient sampling technique was adapted.

### STUDY PLACE

The subjects were selected from Brain child rehab center, Department of occupational therapy, karur and Akshaj paediatric rehab center,Aranthangi, pudukkottai.

### INCLUSION CRITERIA

Both genders were included.

Subject's criteria consisted of full text studies that assessed the identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for paediatrics habituation and rehabilitation .

Paediatric subjects were only included.

## EXCLUSION CRITERIA

Exclusion criteria consisted of studies with children older than 12 years of age.

## DURATION OF THE PERIOD

Total duration of the study was 12 months.

## PROCEDURE OF STUDY

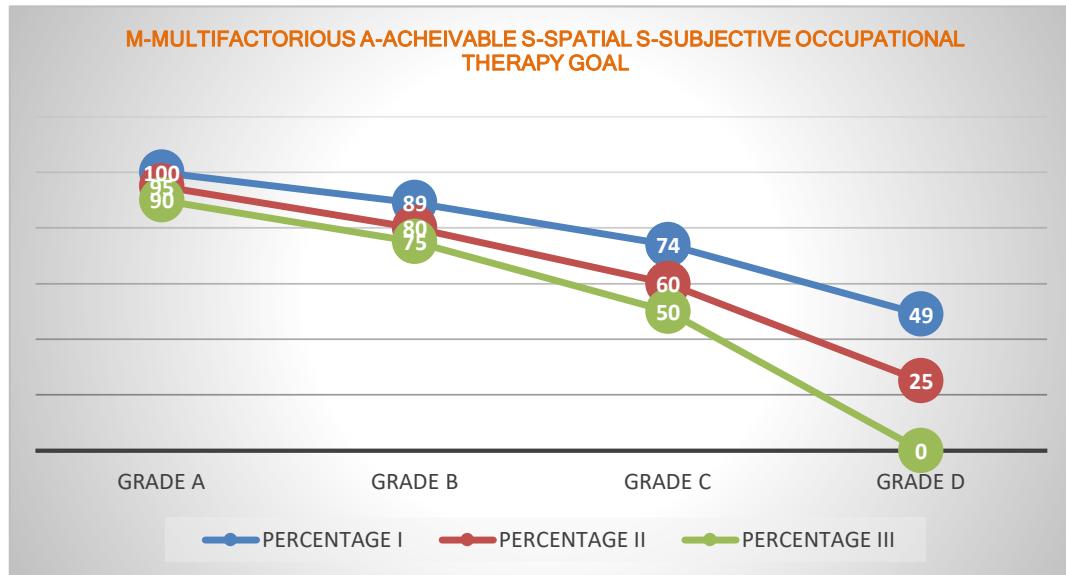
- A sample size of 150 subjects was included in this study. Initially, permission for doing research was received from the subjects by getting consent form. Then details such as name, age, sex, history of the identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for paediatrics habituation and rehabilitation p was taken by using assessment form and the procedure was explained to the subjects. To evaluate the client subjective goal of occupational therapy configuration implementations among paediatric using Weefim scale .To evaluate the identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for paediatrics habituation and rehabilitation using Multifactorious Achievable Spatial Subjective- Occupational Therapy Goal checklist (MASS-OTG).

To evaluate the sensory process adaptive skills of occupational therapy implementations among paediatric using Toddler sensory profile-2 and child sensory profile-2. To evaluate the occupational performance problems, concerns and issues, interview the client, asking about daily activities in self-care amongst paediatrics using Wee functional independence measure (WEEFIM). To evaluate the client satisfaction of occupational therapy implementations among paediatric using client satisfaction questionnaire-8 (CSQ-8).

## Using MASS-OTG for checklist

MASS-OTG checklist evaluation purposes, users of need to calculate a summary score grade to reflect the overall activity configuration goal of clients. The recommended procedure is to convert identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for paediatrics habituation and rehabilitation clients' outcome scores on all their goals into aggregate conceptual grade scores that can be summarized, using a statistical graph package like Statistical analysis for the conceptual model of activity configuration approach

(MASS-OTG) Aggregate grade-scores facilitate reliability analyses, comparisons across clients and comparisons with UN-standardized measures. the are following grades.



## DATA ANALYSIS AND INTERPRETATION

**Table 1:** The identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for paediatrics habituation and rehabilitation -PCCSQ ,PECSQ

Category	Mean value	SD	P value	r value
Occupational therapy- PC-CSQ	8.16	3.42	0.0413	0.563
Occupational therapy- PE-CSQ	7.00	3.48		

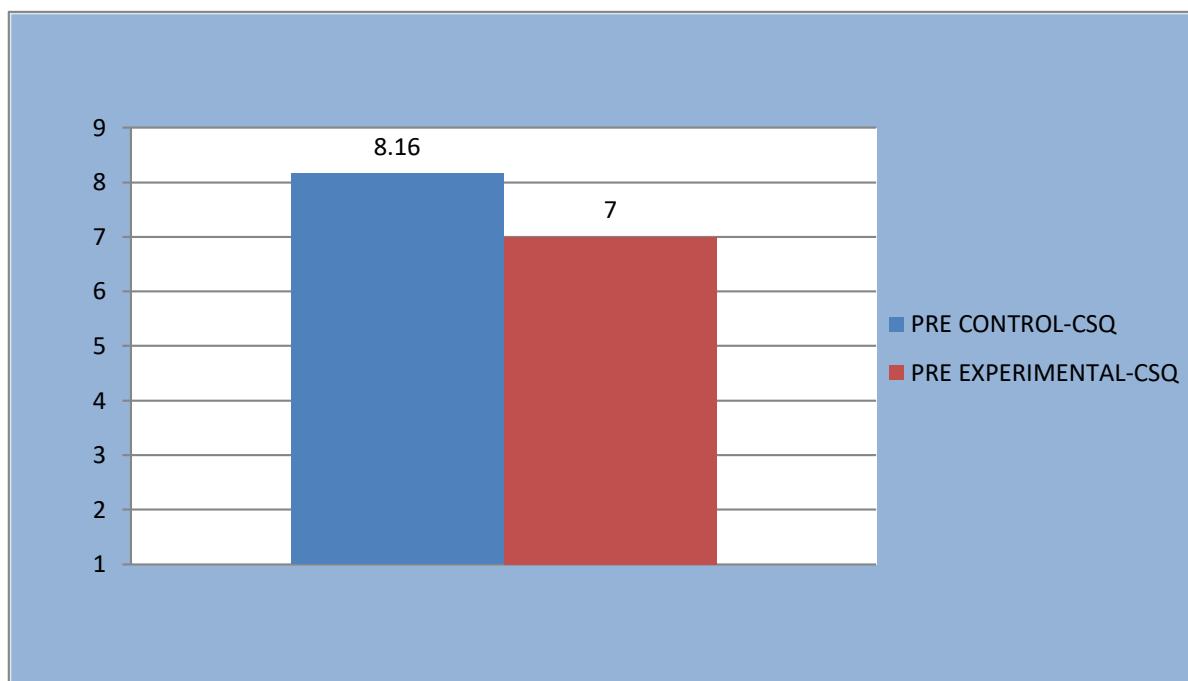
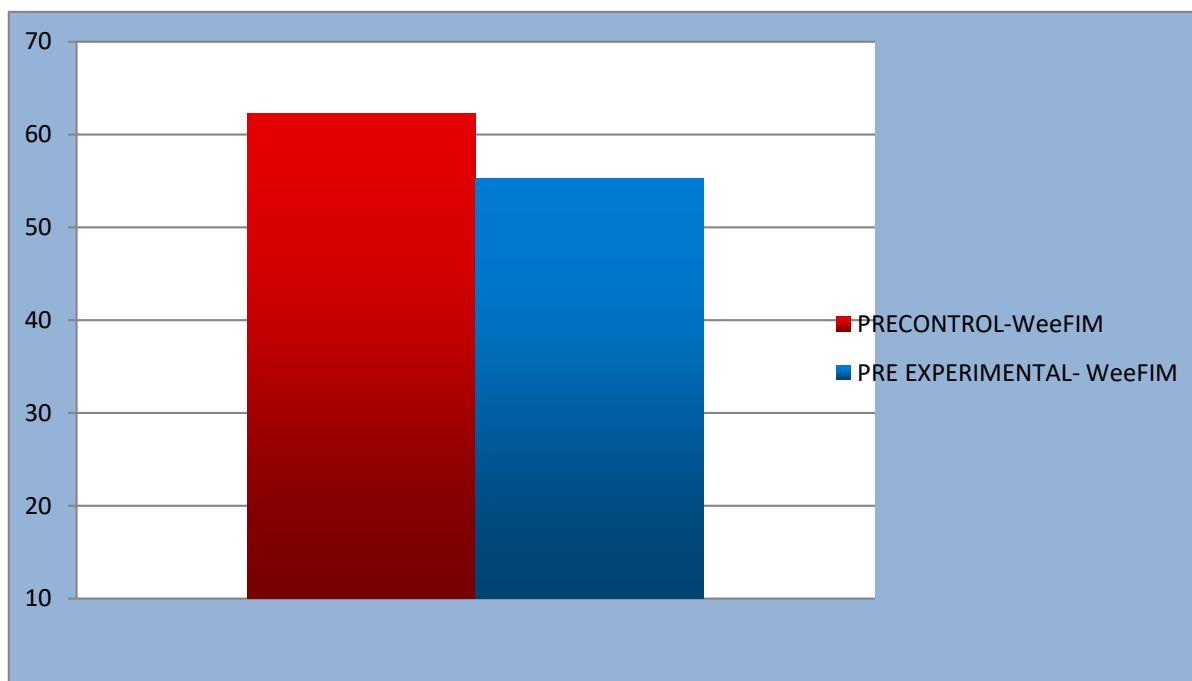
**Graph 1:**

Table: 1 and Graph: 1 The identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for paediatrics habituation and rehabilitation pre control CSQ and pre experimental CSQ- interventions for paediatrics mean values are 8.16 and 7.00 respectively, where the  $r$  value is 0.563 and  $p$  value is 0.0413 which shows it is extremely statistically significant.

**Table 2:** identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for paediatrics habituation and rehabilitation -PC-WeeFIM ,PE-WeeFIM

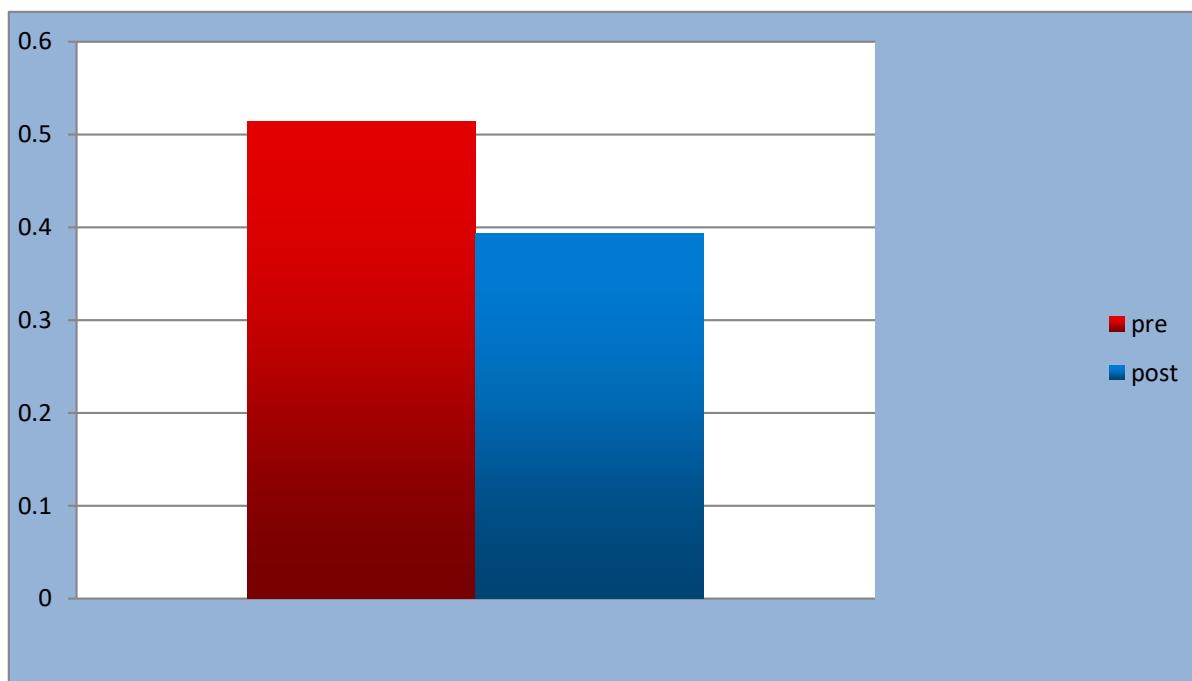
Category	Mean value	SD	P value	r value
Occupational therapy-PC-WeeFIM	62.25	8.68	0.0001	1.176
Occupational therapy-PE-WeeFIM	55.27	5.34		

**Graph: 2**

**Table: 2 and Graph: 2 is showing** The identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for paediatrics habituation and rehabilitation -PC-WeeFIM ,PEWeeFIM mean values are 62.25 and 55.27 respectively, where the r value is 1.176 and p value is 0.0001 which shows it is extremely statistically significant.

**Table 3:** identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for paediatrics habituation and rehabilitation - toddler & child sensory profile-2

Category	Mean value	SD	P value	r value
Pre control group (sensory profile-2)	0.5137	0.0150	0.0110	0.013
pre experimental group (sensory profile-2)	0.3930	0.0098		

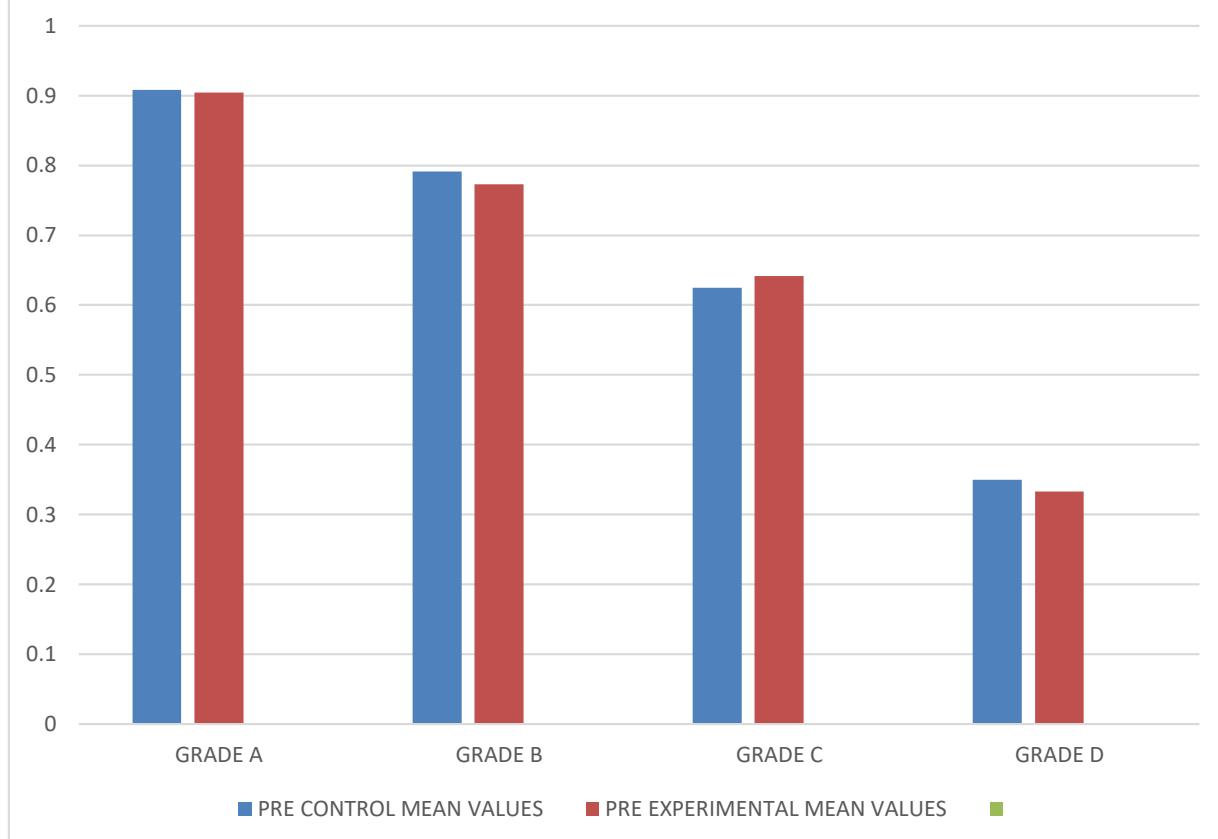
**Graph: 3**

**Table: 3 and Graph: 3 is showing identification** of occupational therapy domains for a new conceptual model of activity configuration approach strategies for paediatrics habituation and rehabilitation -sensory profile-2 pre control & pre experimental group mean values are 0.5137 and 0.3930 respectively, where the r value is 0.013 and p value is 0.0110 which shows it is statistically significant.

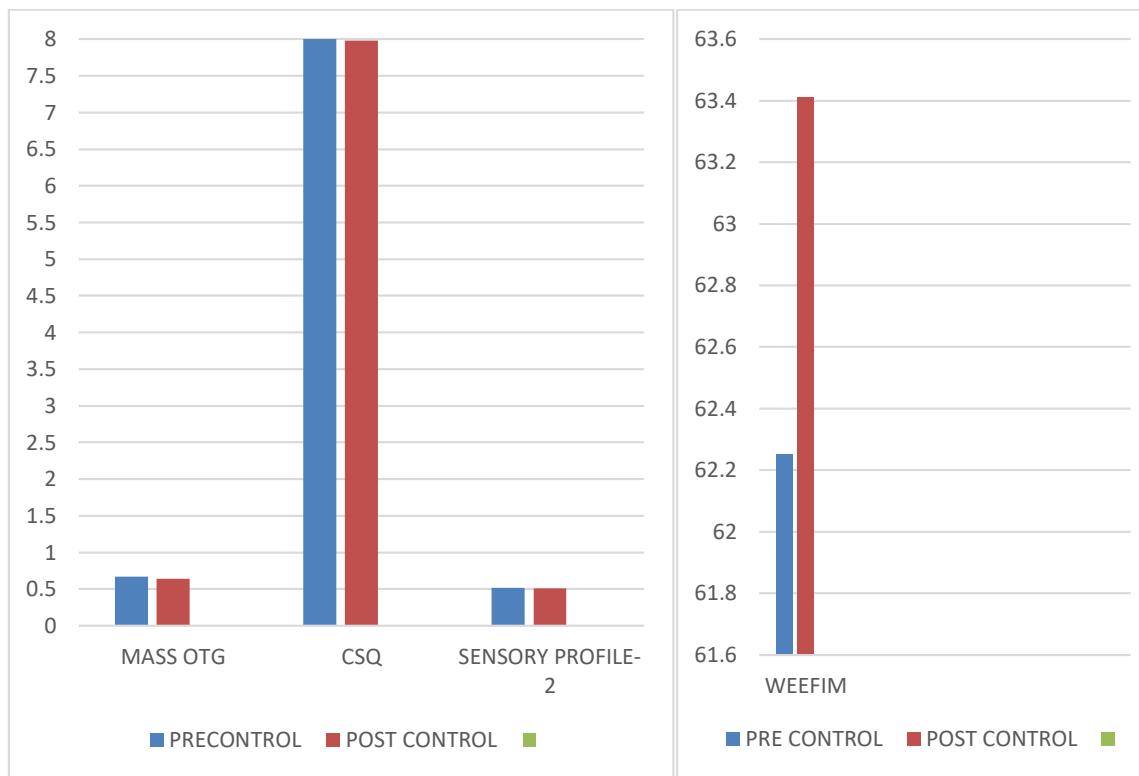
Graph: 4 is showing identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for paediatrics habituation and rehabilitation MASSOTG pre control group mean values are grade wise.

GRADES	PRE CONTROL MEAN VALUES	PRE EXPERIMENTAL MEAN VALUES
A	0.9083	0.9041
B	0.7916	0.7733
C	0.625	0.6416
D	0.35	0.3333

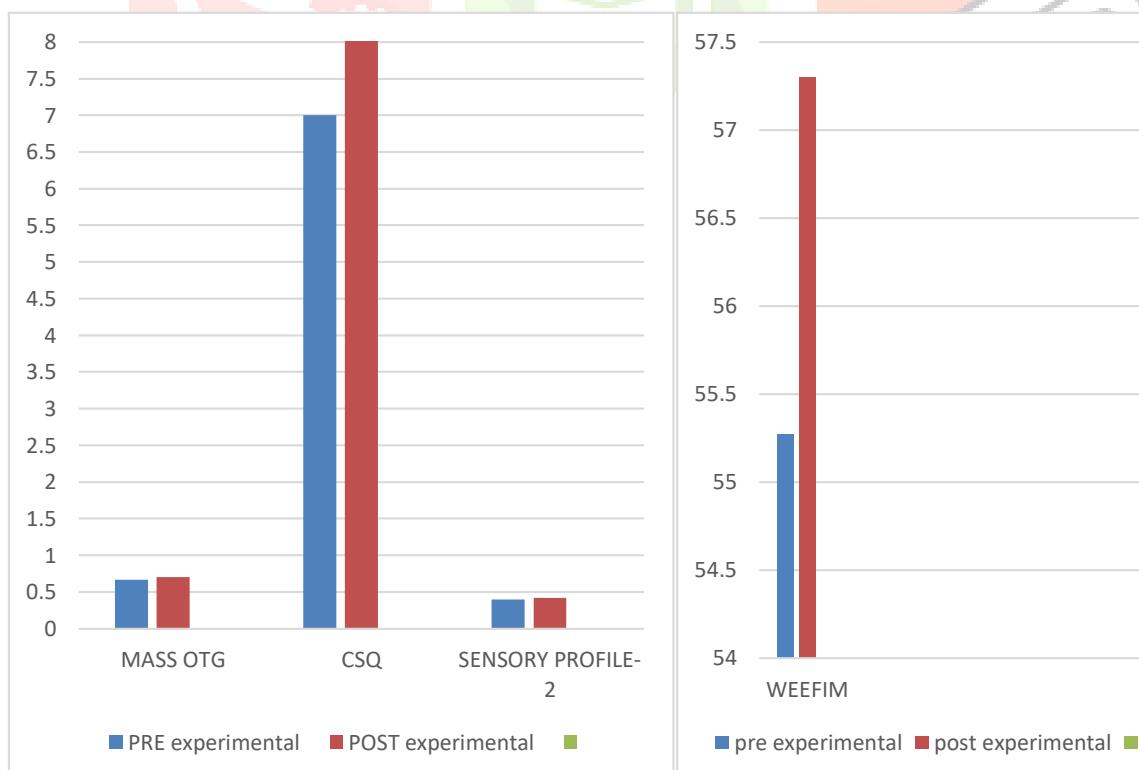
## MASS-OTG GRADES -STRATEGIES



Graph: 5 is showing identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for paediatrics habituation and rehabilitation. Comparison between pre control & post control group mean values are MASS OTG checklist, CSQ, Sensory profile-2 and Weefim.



Graph: 6 is showing identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for paediatrics habituation and rehabilitation. Comparison between pre experimental & post experimental group mean values are MASS OTG checklist, CSQ, Sensory profile-2 and Weefim.



## DISCUSSION

The purpose of this study was to assess the identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for paediatrics habituation and rehabilitation.

In this study, the subjects were chosen from Brain Child rehab center, karur and Akshaj rehab center puthukottai based on the inclusion criteria. The data collection was done by using multifarious achievable spatial subjective occupational therapy goal checklist (MASS-OTG) and client satisfaction questionnaire (CSQ), Weefim. The collected data were calculated by using statistical principles.

➤ That result was supported by Jim Hinojosa, Christine T. Sproat, Supawadee Mankhetwit et al (2002) the aim of the study was to describe the Shifts in Parent–Therapist Partnerships. Method Surveys were sent to a random sample of 400 therapists, with 199 returned from respondents who identified themselves as working with preschool children with developmental disabilities. After calculating descriptive statistics for each item in the survey, a one-way analysis of variance was performed to test for differences based on four demographic variables. Results Respondents reported that working with parents, more than any other aspect of intervention, had the greatest impact on the progress of a child with disabilities. Consistent with the 1987 survey, respondents believed that parents focus on their own adjustment to their child's disability as well as on their child's progress more than any other issues. Therapists continue to report satisfaction when generating positive change for child and parent through education and use of clinical knowledge and skill. Patricia A Sperle; Kenneth J. Ottenbacher; Susan L. Braun; Shelly J. Lane; Susan Nocajski et.al, 2020

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Table: 3 and Graph: 3 is showing identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for paediatrics habituation and rehabilitation -sensory profile-2 pre control & pre experimental group mean values are 0.5137 and 0.3930 respectively, where the r value is 0.013 and p value is 0.0110 which shows it is statistically significant.

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Graph: 4 is showing identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for paediatrics habituation and rehabilitation MASSOTG pre control group mean values are grade wise.

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These results are supported by that data was supported by Caitlin M Moll, Meghan N Billick, Kristin et al (2018) the aim of the study is to analyse to determine parent satisfaction with OT interventions for variety of paediatric conditions. Conclusion: The studies reviewed suggest there may be value in understanding parent consideration and working as a cohesive, interdisciplinary team for the overall benefit of a child.

The present study showed significantly that there is an impact of the identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for paediatrics habituation and rehabilitation. Based on the results and interpretation, the study accepts the alternative hypothesis and rejecting the null hypothesis.

## CONCLUSION

From the result of this study it was concluded that there is significant the identification of occupational therapy domains for a new conceptual model of activity configuration approach strategies for paediatrics habituation and rehabilitation in the studies reviewed suggest there may be value in understanding new conceptual model of activity configuration approach strategies for paediatrics as a cohesive, occupational therapy for the overall benefit of a child. Thus, proving the alternate hypothesis and rejecting the null hypothesis.



## LIMITATIONS AND RECOMMENDATIONS

### LIMITATIONS

- The study was conducted on paediatrics.
- The study was done on a small sample size.
- The study was conducted for shorter duration.
- The study was conducted from only rehab centers.

### RECOMMENDATIONS

- The study can be conducted on different aged children.
- The study can be conducted on other specialization medical professionals.
- The study can be done on mass sample size.
- The study can be conducted on multiple hospital and clinics.

## REFERENCE

### TEXT BOOKS

1. Annie Turner, Marg Foster et al., Occupational Therapy and Physical Dysfunction, 5<sup>th</sup> Edition, Page No. 521-541.
2. O. Hokwerda et al., (2006), Ergonomic Requirement for Dental Students, Guidelines and Recommendation for Designing, Constructing and Selecting Dental Equipment.
3. P. R. Kothari And Gauraggarg et al., Research Methodology, Methods and Techniques, 3<sup>rd</sup> Edition, Page No 312-327.
4. Dr. S.P. Gupta “Statistical Methods”, 5<sup>th</sup> Edison.

### JOURNALS

5. Abdul Rahim Shak et al., Work Related Musculoskeletal Disorders among Dental Surgeons, (July-2013), [www.comtemplindent.org](http://www.comtemplindent.org), IP: 164.100.31.82.
6. Bethani Valachi, Mechanism Leading To Musculoskeletal Disorders in Dentistry, Journal Of American Dental Association, vol. 134, 2003.
7. Carolina H.Y. Lington, Hand Grip Strength at Midlife and Familiar Longevity – The Leiden Longevity Study, Official Journal of The American Aging Association, vol. 34, issue – 3, 2012, pp 1261- 1268.
8. Catherine Cook et al., (2000), The Prevalence of Neck and Upper Extremity Musculoskeletal Symptoms in Computer Mouse Users, International Journal Of Industrial Ergonomics, 347 – 336.
9. Chistos Savva et al., Test -Retest Reliability Of Handgrip Strength Measurement Using A Hydraulic Dynamometer In Patients With Cervical Radiculopathy, Journal Of Manipulative And Physiological Therapeutics, vol – 37, issue 3, pages 206-210.
10. C.J. Groubler et al, self reported work related Musculo Skeletal Anjuries and Isometric Handgrip Strength, Oxford Journals of Health and Medicine, 2013, vol. 63, issue 3, pp 210-216.
11. Classification of Dental Instruments, Arkansal Tech University, 2017.
12. David W. Rising et al, Reports of Body Pain in a Dental Student Population, 2005, vol.136, issue-1, pages 81-86.

13. Deepak Sharan, Mathankumar et al., Work Related Musculoskeletal Disorders among Dentist, Nordic Ergonomics Society Annual Conference- 46, 2014.

14. "Dental Excavators", [www.dechetan.com](http://www.dechetan.com), 2017.

15. Dr. David J et al., "The Eight Keys to Selecting Great Seating for Long Term Health".

16. Eman Samil Fayez, et al (2014)., Neck Pain And Hand Grip Strength In Dentists If Saudi Arabia, International Journal Of Innovation And Applied Studies ISSN 2028 – 9324, vol.9, no.2, pp 665-661.

17. Gavin Garrison et al (2017), Neck Strengthening Exercises , Journal Of Spine Health.

18. Global year against musculoskeletal pain, International Association for the Study of Pain, Oct, 2009.

19. Helen C. Roberts and Hayley J. Martin et al (2011), A Review Of The Measurement Of Grip Strength In Clinical And Epidemiological Studies Towards A Standardized Approach, Oxford University, Behalf Of The British Geriatrics Society.

20. [http://en.wikipedia.org/wiki/Head\\_and\\_anatomy](http://en.wikipedia.org/wiki/Head_and_anatomy)

21. [http://en.wikipedia.org/wiki/Dental\\_instrument](http://en.wikipedia.org/wiki/Dental_instrument)

22. <http://www.healthline.com/human-body-maps/neck>

23. <http://www.medscape.com/article/1968303-review>

24. <http://www.spine-health.com>

25. Jolanta Szymanska, Disorders Of The Musculoskeletal System Among Dentists From The Aspect Of Ergonomics And Prophylaxis, Annual Of Agricultural And Environmental Medicine, 2002, vol. 9, 169-173

26. M. J. Hayes and D. Cockrell et al., (Sep, 2009), A Systemic Review of Musculoskeletal Disorders among Dental Professionals, International Journal Of Dental Hygiene.

27. Occupational Therapy and Pain Rehabilitation, the American Occupational Therapy Association (AOTA).

28. "OT Assessment Index", Mental Health 4 Occupational Therapy

29. R. D. Kilgour et al., (2013), Hand Grip Strength Predicts Survival And Is Associated With Markers Of Clinical And Functional Outcomes In Advanced Cancer Patients, Supportive Care In Cancer, vol. 21, issue-2, pp 3261-3270.

30. Rebecca Harkin et al., (2017), Musculoskeletal Therapy.

31. Rebecca L. Von Dee Hayde et al., (2011) Occupational Therapy Interventions For Shoulder Conditions: A Systematic Review, American Journal of Occupational Therapy, vol.65, 16-23.

32.R. Nutalapati, R. Gaddipati et al., (2009), Ergonomics in Dentistry And The Prevention Of Musculoskeletal Disorders In Dentists, International Journal Of Occupational Health, Vol.1, 2009.

33. Steven G. Yeomans et al., (2014), Spinal Manipulation For Cervical Joint Dysfunction, Spinal Health.

34.S. Vijay and M. Ide et al., Musculoskeletal Neck And Back Pain In Undergraduate Dental Students At A Uk Dental School- Across Sectional Study, British Dental Journal, vol.221, no.5, 2016

35.T. Nandhini et al., Cervical Neck Pain- a Review, Journal of Pharmaceutical Sciences and Research, 2014, vol.64, 210-212.

36.Work force trends in Occupational Therapy, American Journal of Occupational Therapy Association.

## WEBSITES

- ❖ [www.aota.org.com](http://www.aota.org.com)
- ❖ [www.dechetan.com](http://www.dechetan.com)
- ❖ [www.google.com](http://www.google.com)
- ❖ [www.googlescholar.com](http://www.googlescholar.com)
- ❖ [www.graphpad.com](http://www.graphpad.com)
- ❖ [www.ijot.com](http://www.ijot.com)
- ❖ [www.medscape.com](http://www.medscape.com)
- ❖ [www.midline.com](http://www.midline.com)
- ❖ [www.otseeker.com](http://www.otseeker.com)
- ❖ [www.pubmed.com](http://www.pubmed.com)
- ❖ [www.sagejournals.com](http://www.sagejournals.com)
- ❖ [www.spinehealth.com](http://www.spinehealth.com)
- ❖ [www.wisegeek.com](http://www.wisegeek.com)