

THE RELATIONSHIP BETWEEN BEHAVIORS ASSOCIATED WITH SENSORY PROCESSING AND PARENTS' SENSE OF COMPETENCE

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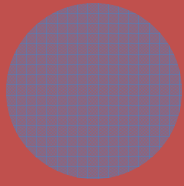


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ASSESSMENTS

- ◎ Implicitly display our belief systems
- ◎ Convey the underlying assumptions regarding the behaviors we hope to change



FAMILY PERSPECTIVE: NEGLECTED OUTCOME

- ⊙ Previous SI effectiveness studies measured:
 - ⊙ Body function/body structure
 - Dichotic listening
 - Responsiveness to sensory input
 - Duration of post-rotary nystagmus
 - ⊙ Activity
 - Academic
 - Developmental changes
 - ⊙ Motor
 - ⊙ Cognitive
 - ⊙ Language

Cohn & Cermak, 1998



PARENT PERSPECTIVES

- ◎ Parents valued their enhanced ability to understand their child's behavior from a sensory perspective
- ◎ Need to empirically investigate parental outcomes
 - ◎ Parental feelings of competence
 - ◎ Potential relationship to child characteristics and/or outcomes

Cohn, Miller & Tickle-Degnan, 2000; Cohn, 2001



PARENTAL SELF-EFFICACY

“The expectation caregivers hold about their ability to parent successfully.”

Jones & Prinz, 2005



PARENTING SENSE OF COMPETENCE SCALE

- ◎ Parental self-efficacy
 - Satisfaction(affective dimension):
social value
 - ◎ Frustration
 - ◎ Anxiety
 - ◎ Motivation
 - Efficacy (instrumental dimension): feeling
of competency
 - ◎ Ability to problem solve
 - ◎ Familiarity/comfort with parenting

Gibaud-Wallston & Wandersman, 1978,

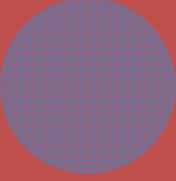
Johnston & Mash, 1989



PARENTAL SELF-EFFICACY

- ◎ Transactional variable
- ◎ Parents with lower levels of self-efficacy:
 - ◎ May struggle with parenting, experience frustration and non-optimal outcomes
 - ◎ May undermine parents' perception and satisfaction with parenting
- ◎ Parents with high levels of self efficacy:
 - ◎ More likely to engage in positive parenting behavior
 - ◎ Increased likelihood for positive child outcomes

Ardelt & Eccles, 2001

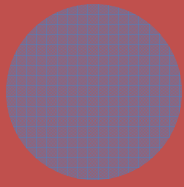


CHILD CHARACTERISTICS ASSOCIATED WITH PARENTAL SELF-EFFICACY (PSE)

- ◎ Predictor of parent and child outcomes
- ◎ Parents of children with ADHD
 - ◎ Lower levels of PSE than parents of typically developing children
- ◎ Children with SPD and ADHD share similar social, behavioral and physiological characteristics

Miller, Reisman, McIntosh & Simon, 2001

Teti, O'Connell & Reiner, 1996



HYPOTHESES AND PREDICTION QUESTION

- ◎ There will be a significant relationship between:
 - ◎ parental self-efficacy / satisfaction and their children's behaviors thought to reflect sensory processing problems
 - ◎ parental self-efficacy/ satisfaction and their children's behavior problems
 - ◎ children's behaviors thought to reflect sensory processing problems and maladaptive behaviors
- ◎ Which child behaviors best predict parental self-efficacy/ satisfaction?



PARTICIPANTS: CHILDREN

- ⊙ 248 parent-child pairs
- ⊙ Children:
 - ⊙ Age 4-12 years ($m = 7.1$, $sd = 1.7$)
 - ⊙ 73% Male
 - ⊙ 93% Caucasian
 - ⊙ 9% Adopted



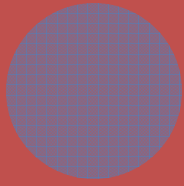
DIAGNOSES: CHILDREN

- ⊙ All children identified as having Sensory Processing Disorder (SPD) - SIPT
- ⊙ 73% no co-occurring diagnosis
- ⊙ Co-occurring diagnoses included:
 - ⊙ 16% Attention deficit disorder
 - ⊙ 9% Anxiety or mood disorder
 - ⊙ 8% Non verbal learning disorder
 - ⊙ 7% Learning disability



PARTICIPANTS: PARENTS (N = 248)

- ◎ 71% Mothers
- ◎ 12% Fathers
- ◎ 17% not reported
- ◎ 93% married
- ◎ 89% held at least a bachelors degree



MEASURES

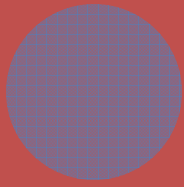
- ◎ *Sensory Profile (SP)*
- ◎ *Parenting Sense of Competence Scale (PSOC)*
- ◎ *Child Behavior Checklist (CBC-L)*
- ◎ *Leiter-R Parent Rating Scale*



RESULTS: PARENT CHARACTERISTICS

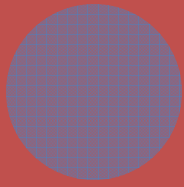
◎ Parent Sense of Competence

	N	Mean	SD
Satisfaction	240	38	7.2
Efficacy	240	28	5.5
Total Score	238	66	11.2



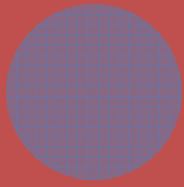
RESULTS: CHILD CHARACTERISTICS

- ◎ Sensory Profile: on average the SPD group performed in the **probable difference** range
- ◎ Leiter-R : 7 of 10 scores were within the **dysfunctional range**
- ◎ CBC-L : **none** of the scores were within the clinical range



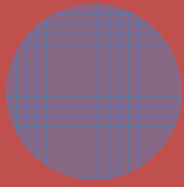
Child Characteristics: Sensory Profile

Sensory Processing	N	Typical Performance	Probable Difference	Definite Difference
Auditory processing	233		26 (5.8)	
Visual processing	234	35 (5.9)		
Vestibular processing	236		45 (5.3)	
Touch processing	232		66 (12.1)	
Multisensory processing	235		26 (4.2)	
Oral Sensory processing	227	46 (9.6)		



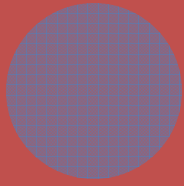
Child Characteristics: Sensory Profile

Modulation	N	Typical Performance	Probable Difference	Definite Difference
Sensory processing related to endurance/tone	235			34 (9.5)
Modulation related to body position & movement	233		40 (6.1)	
Modulation of movement affecting activity level	235	23 (3.4)		
Mod. of sensory input affecting emotional responses	238		15 (3.3)	
Modulation of visual input affecting emotional responses and activity level	237	15 (2.7)		



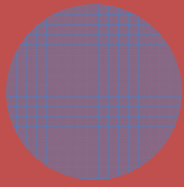
Child Characteristics: Sensory Profile

Behavior and Emotional Responses	N	Typical Performance	Probable Difference	Definite Difference
Emotional/social responses	235		57 (11.7)	
Behavioral outcomes of sensory processing	238			18 (4.1)
Items indicating threshold for response	238	12 (2.1)		



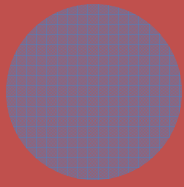
Child Characteristics: Leiter-R

	N	Functional	Dysfunctional
Attention	237		6.8 (2.07)
Activity Level	231		6.7 (2.40)
Impulsivity	241		6.4 (2.78)
Social Abilities	236	7.2 (2.28)	
Cognitive/Social Composite	219		82 (11.5)
Adaptation	241		5.4 (2.64)
Moods and Confidence	228		6.4 (2.22)
Energy and Feelings	239	7.4 (2.23)	
Sensitivity & Regulation	230	7.3 (1.79)	
Emotions/Regulation Composite	221		83 (9.9)



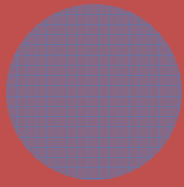
Child Characteristics: Child Behavior Checklist-L

	N	Mean	SD
Withdrawn	239	58	8.6
Somatic	239	58	7.8
Anxious/Depressed	239	60	9.9
Internalizing Subscore	239	58	11.9
Social	239	61	9.1
Thought	239	60	8.4
Attention	239	65	9.4
Delinquent	239	56	7.3
Aggressive	239	59	9.3
Externalizing Subscore	239	56	11.1
Sex Problems	237	55	7.8
Total Problems	239	61	10.4



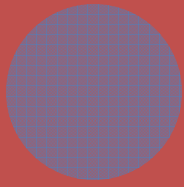
Correlations: PSOC and SENSORY PROFILE

- ◎ **Total Score** of the PSOC was significantly correlated with 13 of 14 sections.
 - ◎ 10 at $p \leq .001$ and 2 at $p \leq .05$.
 - ◎ $r = .060$ to $.337$.
- ◎ **Satisfaction subscore** of the PSOC scale was significantly related to 13 of 14 sections
 - ◎ 7 at $p \leq .001$.
 - ◎ Correlations ranged from $r = .118$ to $.364$.
- ◎ **Efficacy subscore** of the PSOC scale had small significant correlations with 5 section scores.
 - ◎ None of the correlations were greater than $.217$ and most were very small in the $.10$ range.



Correlations: PSOC and SENSORY PROFILE

Sensory Processing	Total	Satisfaction	Efficacy
Auditory processing	.149*	.175**	.085
Visual processing	.163*	.175**	.090
Vestibular processing	.218**	.239**	.136*
Touch processing	.220**	.272**	.117
Multisensory processing	.209**	.224**	.137*
Oral Sensory processing	.060	.118	-.011



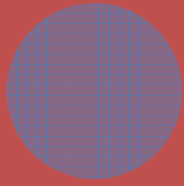
Correlations: PSOC and SENSORY PROFILE

Modulation	Total	Satisfaction	Efficacy
Sensory processing related to endurance/tone	.130*	.184**	-.005
Modulation related to body position & movement	.197**	.199**	.127
Modulation of movement affecting activity level	.199**	.234**	.102
Mod. of sensory input affecting emotional responses	.180**	.232**	.080
Mod of visual input affecting emotional responses and activity level	.337**	.358**	.217**



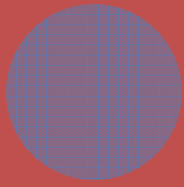
Correlations: PSOC and SENSORY PROFILE

Behavior and Emotional Responses	Total	Satisfaction	Efficacy
Emotional/social responses	.322**	.364**	.175**
Behavioral outcomes of sensory processing	.180**	.178**	.126
Items indicating threshold for response	.240**	.229**	.187**



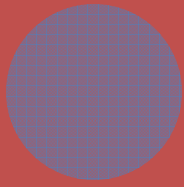
Correlations: PSOC and LEITER-R

- ◎ PSOC correlated with all sections
 - ◎ $p \leq .001$.
 - ◎ Correlations ranged from $r = .183$ to $.426$.
- ◎ Satisfaction Subscore of the PSOC correlated with all sections
 - ◎ 7 of 9 at $p \leq .001$, 2 at $p \leq .005$, and 1 at $p \leq .05$.
 - ◎ Correlations ranged from $r = .168$ to $.387$.
- ◎ Efficacy Subscore of the PSOC correlated with all but one subscore, Moods and Confidence
 - ◎ 6 of 9 $p \leq .005$ and 3 at $p \leq .05$
 - ◎ Correlations ranged from $r = .127$ to $.333$.



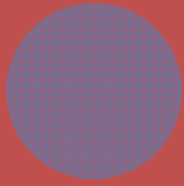
Correlations: PSOC AND LEITER-R

	Total	Satisfaction	Efficacy
Attention	.183**	.188**	.130*
Activity Level	.203**	.168*	.205**
Impulsivity	.252**	.218**	.234**
Social Abilities	.426**	.387**	.333**
Cognitive/Social Composite	.311**	.283**	.266**
Adaption	.292**	.276**	.241**
Moods and Confidence	.239**	.272**	.127
Energy and Feelings	.308**	.337**	.163*
Sensitivity & Regulation	.230**	.245**	.164*
Emotions/Regulation Composite	.277**	.297**	.175**



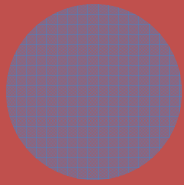
Correlations: PSOC and CBC-L

- ⊙ Total Score of the PSOC significantly correlated with the CBC-L
 - ⊙ 6 of 9 nine subsections at $p \leq .001$ and 3 at $p \leq .05$. Correlations ranged from $r = -.143$ to $-.365$.
- ⊙ Satisfaction section of the PSOC
 - ⊙ 7 of 9 subsections at $p \leq .006$ and 2 at $p \leq .02$. Correlations ranged from $r = -.132$ to $-.385$.
- ⊙ Efficacy section of the PSOC
 - ⊙ 4 of 9 subsections at $p \leq .004$ and 2 at $p \leq .05$. Correlations ranged from $r = -.049$ to $-.292$.



Correlations: PSOC and CBC-L

- ◎ CBC-L Internalizing, Externalizing and Total Score domains were most strongly related to parent Satisfaction .
 - ◎ $P \leq .001$, $r = -.301$, $-.350$, and $-.385$ respectively.
- ◎ Parent Efficacy was not related to Internalizing behaviors but was moderately related to Externalizing behaviors and CBC-L Total Score at $p < .001$.
- ◎ Total Score of the PSOC was moderately related to the Internalizing, Externalizing and Total Scores of the CBC-L at $p \leq .001$ with $r = -.217$, $-.365$, and $-.356$ respectively.



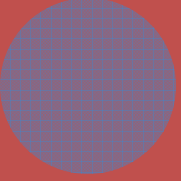
Correlations: PSOC and CBC-L

	Total	Satisfaction	Efficacy
Withdrawn	-.169**	-.229**	-.049
Somatic Complaints	-.143**	-.178**	-.061
Anxious/Depressed	-.222**	-.299**	-.075
Internal	-.217**	-.301**	-.061
Social Problems	-.292**	-.329**	-.152*
Thought Problems	-.177**	-.163*	-.143*
Attention Problems	-.283**	-.282**	-.211**
Delinquent Behavior	-.255**	-.230**	-.220**
Aggressive Behavior	-.358**	-.346**	-.283**
External	-.365**	-.350**	-.292**
Sex Problems	-.191**	-.132*	-.206**
Total Problems	-.356**	-.385**	-.224**



Correlations: SENSORY PROFILE and LEITER-R and CBC-L

- ◎ Almost all parts of the sensory profile correlated significantly with all parts of both the Leiter-R and CBC-L.
- ◎ Correlations ranged from .019 to .781
- ◎ Emotional/Social responses is the subscale on the SP which most highly correlates with the Leiter-R and CBC-L



Prediction Of Total Score Of PSOC

- ◎ Best predicted by 2 items:
 - ◎ adjusted R-Square of .212
 - ◎ Leiter-R
 - Social Abilities section
 - ◎ Sensory Profile
 - Vestibular Processing section



Parenting Satisfaction Subscale: PSOC

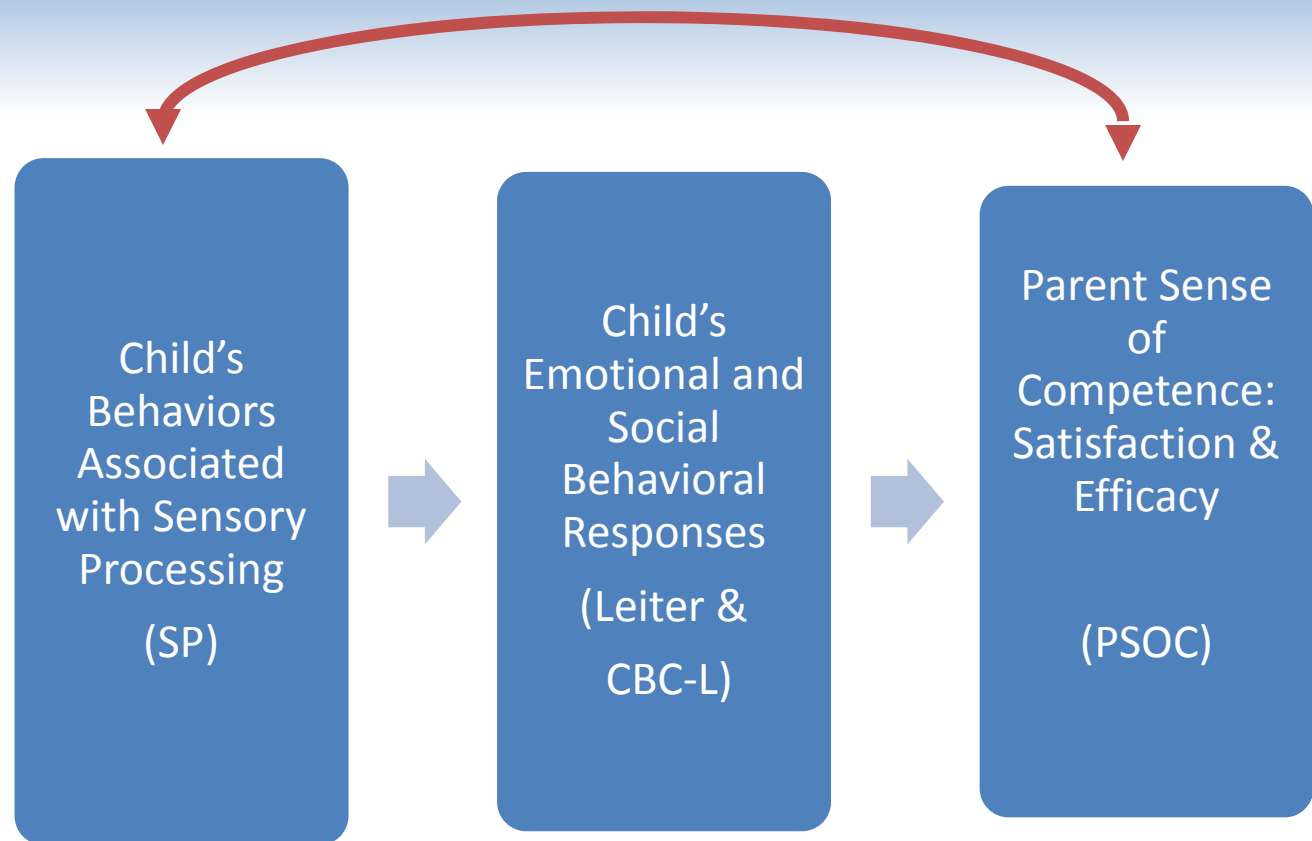
- ◎ Best predicted by 2 items:
adjusted R-Square of .212
 - ◎ CBC-L
 - Social subsection
 - ◎ Leiter-R
 - Social Abilities

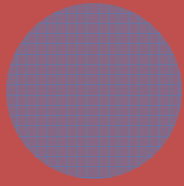


Parenting Efficacy Subscale: PSOC

- ⊙ Best predicted by 6 items: adjusted R-square of .228.
 - ⊙ Leiter-R
 - Social Abilities,
 - Emotions/ Regulation,
 - Moods/ Confidence
 - ⊙ CBC-L
 - Sex Problems
 - ⊙ Sensory Profile
 - Emotional/ Social Responses
 - Vestibular Processing sections

Conclusions





Conclusions

- ⊙ Parental satisfaction (as measured by PSOC) correlated to behavior measured on SP more than efficacy
- ⊙ Parents in sample slightly less satisfied than normative sample
- ⊙ Behaviors thought to be associated with vestibular processing important predictor
- ⊙ Social participation matters
- ⊙ Occupational performance coaching (OPC): collaborative problem solving
 - ⊙ social and physical environment changes that support occupational performance for parents and their children

Graham, Rodger & Ziviani, 2009