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A New, Validated Assessment Tool Demonstrates Positive Outcomes In Home Visiting Model For Families Affected By Maternal Substance Use

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The TIES Program Model

- The Team for Infants Exposed to Substance abuse (TIES) is a longstanding home-based family support program that provides a multi-disciplinary, community-based model to address the complex needs of families with young children affected by maternal substance use.
- TIES developers have created and psychometrically validated a comprehensive tool, the Individualized Family Service Plan (IFSP), to assess outcomes in key domains

Instrument Development

- The IFSP uses a 5-point Likert scale to assess goal attainment over time in six domains: maternal substance use, parenting, child physical and mental health, maternal physical and mental health, income stability, and housing stability.
- The scale uses 1 to represent very low (crisis); 2 low (vulnerable); 3 adequate (stable); 4 high (advancing); and 5 very high (thriving) goal attainment.
- The scale descriptors for a single component of two goal areas are excerpted below.

Methods

- TIES Specialists and parent score the family's status in goal areas at intake (Time 1) and chart progress over time at child's age of 3-7 months (Time 2), 9-13 months (Time 3), 18-22 months (Time 4), and discharge (Time 5).
- Analysis included 220 TIES participants from 2012-2019.
- Three criteria were used to remove items from the instrument: 1) Items with factor loadings less than 0.4; 2) items with dual loading issues; and 3) items that did not fall into any domain, and rather formed its own factor with less than three items.

Analysis & Results

- Exploratory Factor Analysis and Confirmatory Factor Analysis affirmed a final structure retaining the six domains we hypothesized, with an acceptable fit, $\chi^2(260) = 457.89$, $p<.001$, CFI=.93, TLI=.92, RMSEA=.06, SRMR=.07.
- Internal consistency of survey items was in the high range ($\alpha= .93$) using Cronbach's alpha. All standardized factor loadings were higher than .4 (ranged from .47 to .93) and were significant at the alpha level of .05, providing strong convergent evidence for this survey.
- The initial instrument started with 30 items in a six-domain structure, and the analysis results confirmed the same structure with 25 items in total. Table 1 shows factor loadings for the 25 confirmed items.

Analysis & Results (Cont.)

Table 1
Item-level Factor Loadings, Residual Variances, and R^2

Item	Standardized Loading	SE	p	Residual Variance	R^2
Maternal Substance Use					
1. Substance abuse.	.89	.06	<.001	.21	.79
2. Stage of change or change recovery.	.91	.06	<.001	.18	.82
3. Support groups and specialist involvement.	.63	.08	<.001	.61	.39
4. Drug treatment program involvement.	.81	.07	<.001	.35	.65
5. Recovery management & maintenance (environment).	.86	.07	<.001	.26	.74
6. Recovery management & maintenance (relapse management).	.92	.05	<.001	.15	.85
Parenting Skills					
1. Parent-child interaction.	.89	.06	<.001	.21	.79
2. Appropriate expectations.	.85	.07	<.001	.28	.72
3. Parenting strategies and problem-solving.	.88	.07	<.001	.23	.77
4. Access of resources and services.	.47	.12	<.001	.78	.22
5. Safety and supervision.	.81	.07	<.001	.34	.66
Child Physical/Mental Health					
1. Preventive care (immunizations).	.63	.09	<.001	.51	.39
2. Preventative care (well-visit appointment).	.76	.09	<.001	.42	.58
3. Response to health concerns (typical issues).	.69	.07	<.001	.52	.48
4. Response to health concerns (specialty & mental health).	.90	.05	<.001	.19	.81
5. Response to health concerns (provider recommendations).	.93	.06	<.001	.13	.87
Maternal Physical/Mental Health					
1. Preventive care (scheduling).	.79	.08	<.001	.37	.63
2. Response to health concerns (specialty & mental health).	.88	.07	<.001	.23	.77
3. Response to health concerns (provider recommendations).	.92	.06	<.001	.15	.85
Housing Stability					
1. Stability.	.63	.08	<.001	.60	.40
2. Safety.	.77	.09	<.001	.40	.60
3. Family planning.	.51	.12	<.001	.74	.26
Income Stability					
1. Income.	.78	.09	<.001	.39	.61
2. Employability.	.64	.09	<.001	.60	.40
3. Money Management.	.88	.06	<.001	.23	.77

Note. R^2 = total variance – residual variance

Conclusions & Future Research

- The IFSP has been psychometrically validated for this population and has been determined to be a reliable and valid instrument.
- This tool has already allowed us to demonstrate family success in goal attainment over time.

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