

# CENTER FOR PERSONALIZED PREVENTION RESEARCH

*in Children's Mental Health*



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# ADVANCES IN THE PERSONALIZATION OF MENTAL HEALTH INTERVENTIONS

- Historically, evidence-based interventions aimed at prevention and treatment have conformed to a “one size fits all approach”. That is, uniform composition and dosage have been offered to all participants.
- Individual heterogeneity – each individual at risk for a mental illness presents a unique set of characteristics, whether they are genetic, environmental, experiential, developmental, or a combination of these factors.
- The heterogeneity in need translates into heterogeneity in response to various aspects of any prevention or treatment program, both across individuals and within individuals across time.
- It is possible to utilize this heterogeneity when designing interventions, potentially improving the efficiency and effectiveness of these interventions.



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## ADAPTIVE INTERVENTION STRATEGIES: AN EMERGING APPROACH FOR IMPROVING INTERVENTION EFFECTIVENESS

- In adaptive treatment strategies we tailor the type, level, or dosage of treatment to each subject by use of prescribed decision rules. The rules provide the mechanism whereby we translate subject's values on key characteristics, called tailoring variables, to dosage amount and type.
- Common types of tailoring variables include individual (genetic, phenotypic), family, or context characteristics representing risk or protective factors that influence responsiveness to (or need for) various types or intensity of preventive intervention.



# DESIGN PRINCIPLES FOR ADAPTIVE INTERVENTIONS

The adaptive intervention consists of not only the treatment components, but the treatment components inextricably coupled with the entire system of assigning dosage

- Choice of tailoring variables
- Measures of tailoring variables
- Decision rules linking tailoring variables to dosage assignment
- Implementation of the decision rules



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# The Role of Preference in Preventive Intervention Trials

- Preference Effect: differential outcome depending on whether an individual is randomized to his/her preferred treatment
- With the trend toward patient participation in health care decisions, it is likely that personal preference may be a key factor in determining the effectiveness of a prevention program
- Most patients ultimately decide for themselves what they will or will not do in regard to treatment (the same may be said for parents making decisions to enroll in preventive interventions).



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# The Role of Preference in Preventive Intervention Trials (continued)

- The opportunity to choose a treatment or program may enhance an individual's sense of control over the learning process within the context of a behavioral intervention thereby increasing self-efficacy for behavioral change and resulting in enhanced outcomes
- Characteristics of individuals who have preferences may differ from characteristics of individuals who do not have preferences in terms of:

Beliefs, attributions, expectancies, affective states, goals, resources, previous history of health care experience



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# The Role of Preference in Preventive Intervention Trials (continued)

- If consumer preferences affect outcome then it behooves us to learn more about how patients make decisions. This includes:
  1. understanding how individuals make decisions,
  2. developing measures of individual decision-making,
  3. testing interventions (Decision Aids) that support effective decision making

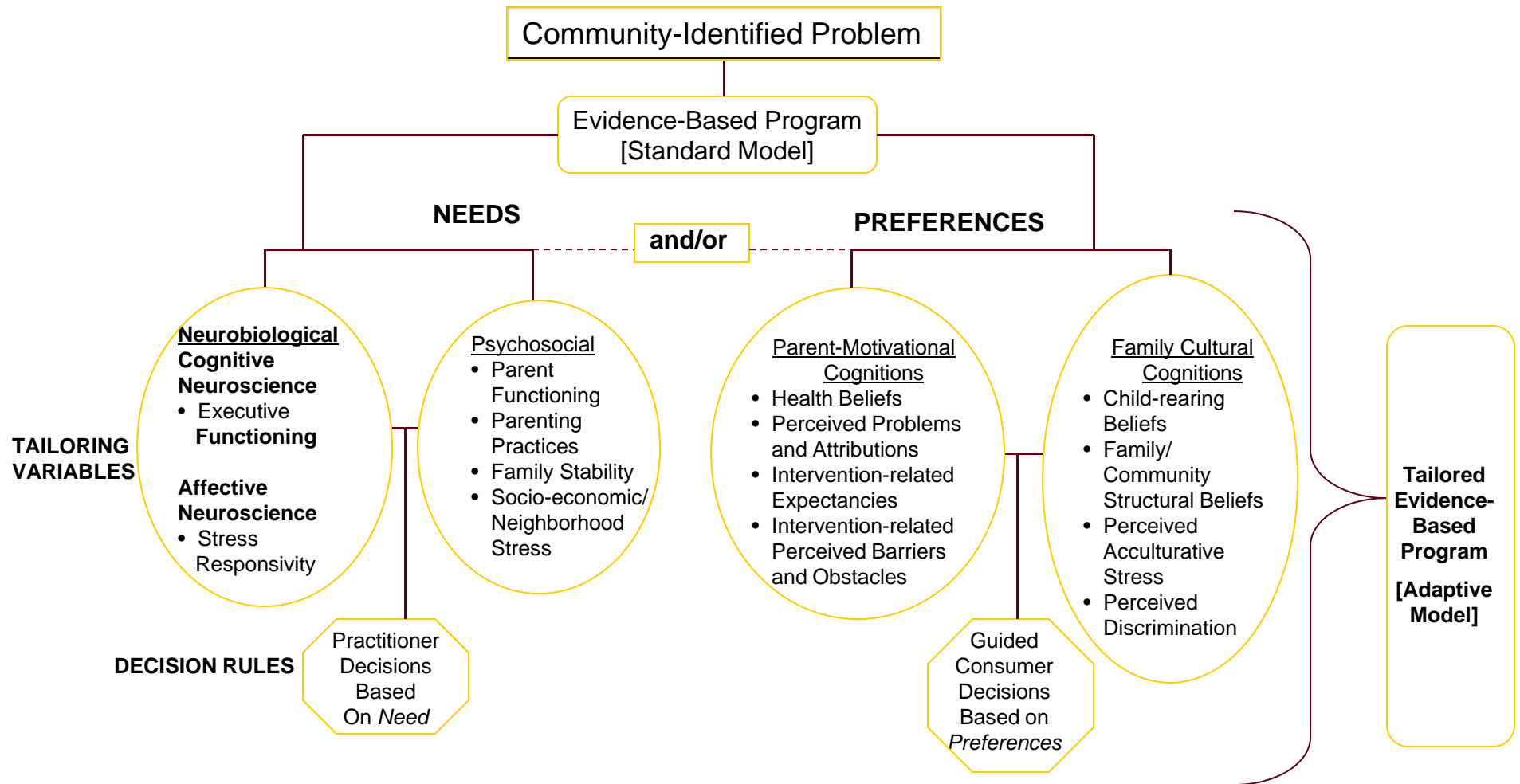


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# CENTER FOR PERSONALIZED PREVENTION RESEARCH IN CHILDREN'S MENTAL HEALTH

## CONCEPTUAL FRAMEWORK FOR PERSONALIZED INTERVENTIONS



# **Constructing Decision Rules for an Adaptive School-Based Conduct Problems Prevention Program**

*Pilot Project within Center for Personalized Prevention Research in  
Children's Mental Health*

**PI: Michael Bloomquist  
Co-PIs: Gerald August & Bonnie Klimes-Dougan**



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# “EARLY RISERS” PREVENTION SERVICE SYSTEM

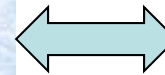
(see August et al., 2007; Bloomquist et al., 2005)

**Administrative  
Partners**

**Community  
Child & Family  
Service Agencies**



**University of  
Minnesota  
Prevention  
Specialists**



**Community  
Public  
Schools**

**Direction &  
Oversite  
Structure**

**Community  
Practitioner  
Advisory Board**



**Training and  
Technical  
Assistance**

**Primary  
Intervention  
Agents**

**Community Prevention Specialists  
“FAMILY ADVOCATES”  
(with “Child Assistants”)**

**CHILD**

**FAMILY**



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Delivered Over  
Two Years



**Child Skills (standardized)** – *Weekly groups focusing on social skills and reading enrichment during school year, and four- to six-week program focusing on social skills, reading enrichment, and creative activities during summer*

**Child Support (tailored)** – *Systematic monitoring of child’s academic/school functioning and goal setting/attainment strategies, reading enrichment, teacher consultation, and facilitating involvement of parents around school issues*

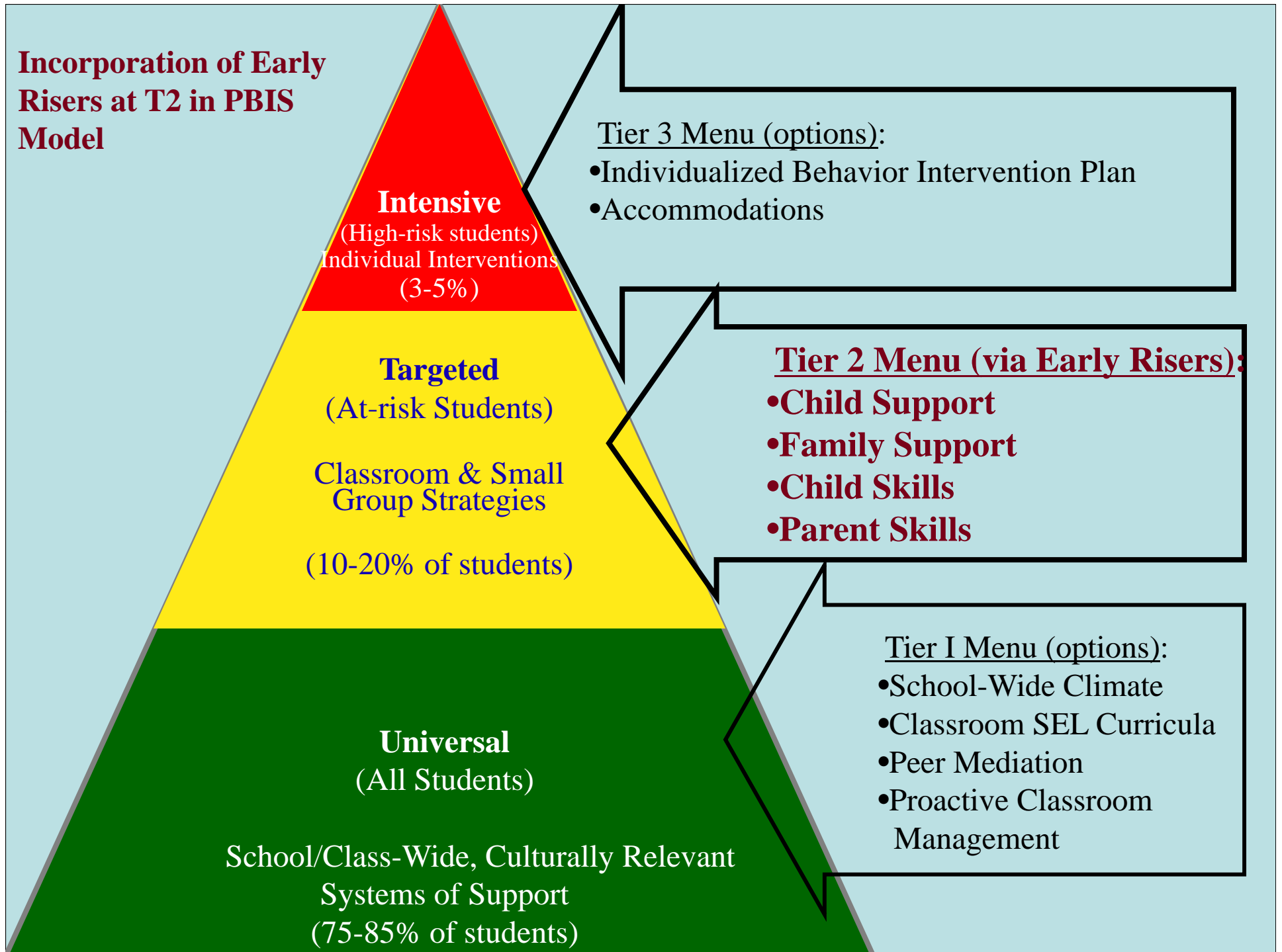
**Parent Skills via Family Nights (standardized)** – *Parent-focused education and skills training to enhance parent’s knowledge of child development and parenting with special parent-child “bonding” activities*

**Family Support (tailored)** – *Systematic monitoring of family functioning and goal setting/attainment strategies, assisting families in accessing community services, and individualized parent skills training*



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## Incorporation of Early Risers at T2 in PBIS Model



# SMART DESIGN

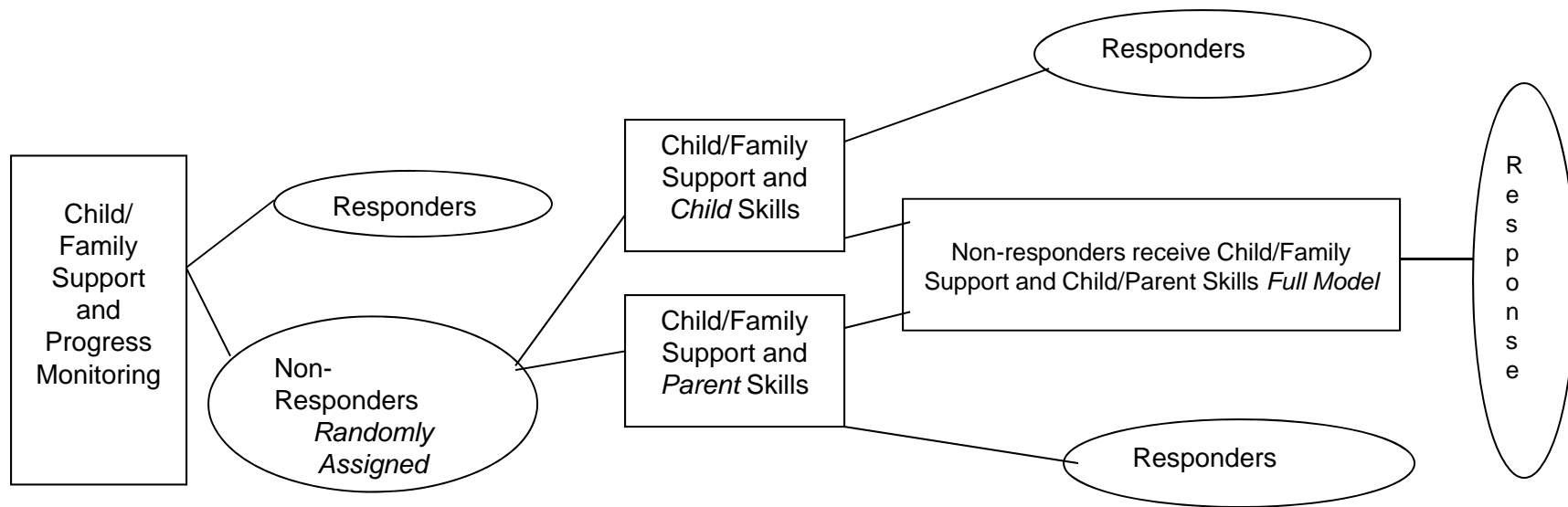
- The traditional RCT answers the question....will treatment condition A result in better outcomes than treatment condition B? The RCT does not answer tactical questions (e.g., when should a treatment with insufficient response be changed? Or after response to a specific treatment, is the intensity or type of maintenance treatment important for successful long-term management?).
- Sequential, multiple assignment, randomized trial (SMART; Lavori & Lawson, 2003; Murphy, 2005). A SMART design uses multiple randomizations to assist in the construction of a powerful ATS. A randomization occurs at each critical decision point.



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## Stepped Care Delivery of Early Risers within T2 PBIS: Using a SMART Design to Build an Adaptive Model



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## Child/Family Risk/Outcome Measures

Measure	Brief Description – Source <sup>1</sup>	Time
<i>Child Academic Skills</i>		
Academic Competence Evaluation Scales	Academic Skills, Interpersonal Skills, Academic Motivation, Study Skills, Classroom Engagement; Academic Enablers composite (73 items) (T)	20 mins
<i>Child Externalizing Behavior Symptoms</i>		
Reactive/Proactive Aggression Scale	Reactive, Proactive, Total Aggression (6 items) (T)	2 mins
Strengths and Difficulties Questionnaire	Hyperactivity, Conduct Problems, Externalizing composite (10 items) (T, P)	4 mins
<i>Child Internalizing Emotional Symptoms</i>		
Strengths and Difficulties Questionnaire	Emotional Problems, Peer Problems, Internalizing composite (10 items) (T, P)	4 mins
Levonon Cartoon-Based Interview for Assessing Distress	Depression, Anxiety/Recurring Thoughts, Sleep Problems, Impulsiveness (S)	10 mins
<i>Child Social Competence</i>		
What Do You Think	Hostile attributional style in response to hypothetical social vignettes (S)	10 mins
Strengths and Difficulties Questionnaire	Peer Problems, Prosocial Behavior (10 items) (T, P)	4 mins



<b><i>Child Cognitive and Executive Functioning</i></b>		
Wechsler Abbreviated Intelligence Scale	Vocabulary, Similarities, Block Design, and Matrix Reasoning; Full Scale IQ estimate (S)	20 mins
Executive Functioning Tool Box	Dimensional Change Card Sort – “cold” measure of set shifting, or cognitive flexibility in EF (S); Flanker Task – “cold” measure of inhibitory control in EF (S); Hungry Donkey Task - “hot” measure of decision making in EF (S)	25 mins
<b><i>Parent Functioning</i></b>		
Brief Symptom Index -18	Anxiety, Depression, Distress composite (18 items) (P)	8 mins
Interpersonal Support Evaluation List	Companionship, Self-esteem, Emotional Support, Instrumental Support, Total Composite (40 items) (P)	15 mins
Parent Views of Proposed Intervention Questionnaire	Motivation/Parent Involvement, Anticipated Barriers, Child-Focused Expectations (23 items) (P)	10 mins
NEOFFI Personality Inventory	Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience (60 items) (P)	20 mins
<b><i>Parenting Practices</i></b>		
Family Routines Inventory	Total score (28 items) (P)	8 mins
Parenting Relationship Questionnaire	Attachment, Communication, Discipline Practices, Involvement, Parenting Confidence, Satisfaction with School, Relational Frustration (71 items) (P)	20 mins
Parent Involvement	Total Involvement at School (21 items) (T)	10 mins



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<i>Cultural Status</i>		
Major Experiences of Discrimination/Everyday Discrimination	Total score (20 items) (P)	10 mins
Acculturative Stress	Total score (10 items) (P)	5 mins
Language Proficiency/ Language Preference	Total score (10 items) (P)	5 mins

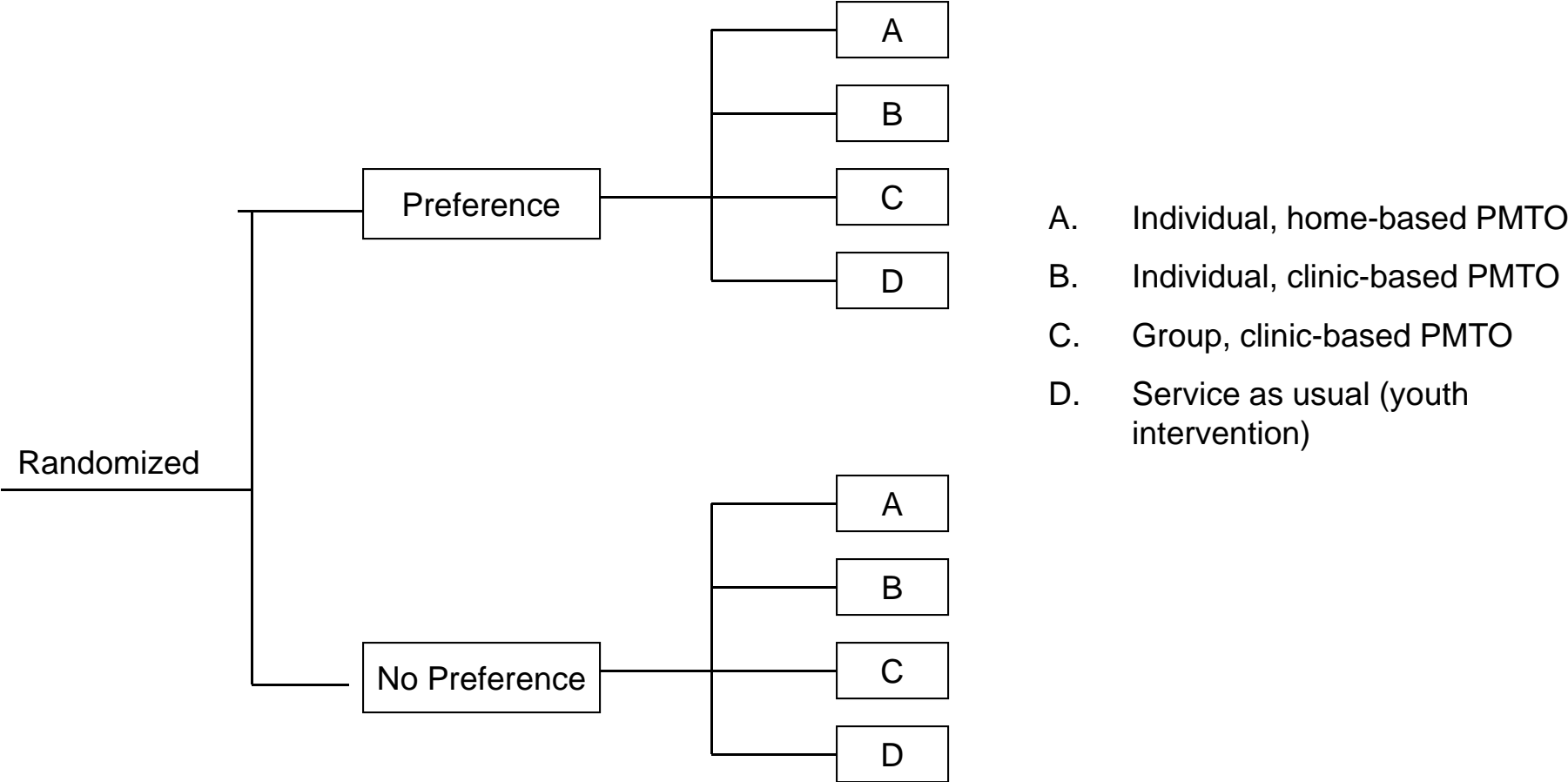
<sup>1</sup> T= teacher; P=parent/caregiver; S=child self-report



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# Parent Preferences and Family Engagement in a Conduct Problems Prevention Program

Gewirtz, Forgatch et al.



## Oregon Parent Management Training [PMTO]

A, B ----- Individual PMTO is a *clinic-* or *home-based* outpatient weekly intervention to prevent youth conduct problems. Trained therapists provide a single, hour-long weekly session with parents, and sometimes included children in sessions. Between sessions, therapists provide weekly 'check-in'; phone calls to reinforce skills, facilitate home practice completion, and troubleshoot challenges. The goal is to increase effective positive parenting and hence child adjustment by focusing on five key skills.

- Positive involvement
- Effective discipline
- Skill encouragement
- Problem-solving
- Monitoring/supervision

C ----- Group PMTO offers a closed format, clinic-based 14 session intervention that will be delivered *'in person'*.

D ----- Treatment as Usual will involve individual supportive psychotherapy, with the individual child, which is the standard intervention offered in the catchment area.



## Specific Aims

1. To assess the relationships between pre-intervention variables and program preference and engagement.
  - Motivational cognitions (i.e., parent health beliefs, locus of control, parenting expectancies about the likely effects the intervention, parent and child desire for involvement in decision making).
  - Family context variables (i.e., parent education, ethnicity, parent psychopathology, substance use)

Specifically,

- a. To assess the empirical relationships between pre-intervention variables, rates of program engagement, and intervention condition (preference, no-preference). It is hypothesized that (i) offering choice of intervention (preference condition) will result in higher levels of engagement and (ii) the pre-intervention cognitions will moderate the relationship between preference condition and engagement.
- b. To identify (in the preference group variables that are associated with preference for selection of particular intervention options.
- c. To explore youth outcomes (externalizing problems, internalizing problems) and parenting outcomes (parenting practices) across preference conditions.

