Development of Benefit-Finding in Adolescents with Type 1 Diabetes

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Adolescent Type 1 Diabetes Management

- Stressful challenges of type 1 diabetes management
  - Coordinate multiple daily behaviors to maintain blood glucose levels in a relatively normal range
- Adolescence is a time of risk, but many adolescents manage their illness fairly well
- Resilience and positive adaptation in type 1 diabetes (e.g., Hilliard et al., 2012; Tran et al., 2011)

Benefit Finding as a Resource

- Benefit Finding
  - Perception of benefits in the face of adversity
- Adolescents report benefits of diabetes (Helgeson et al., 2009)
- Diabetes-related benefit finding
  - Associated with better adherence (Helgeson et al., 2009; Tran et al., 2011)
  - Buffered associations between negative emotional reactions to diabetes and glycemic control (Tran et al., 2011)

Development of Benefit Finding across Adolescence

- Aspects of adolescent development may influence benefit finding
  - Emergence of abstract and future-oriented thought
  - Identity development
  - Independence in diabetes management
  - Development of secondary coping skills

- Does benefit finding systematically increase or decrease across adolescence?

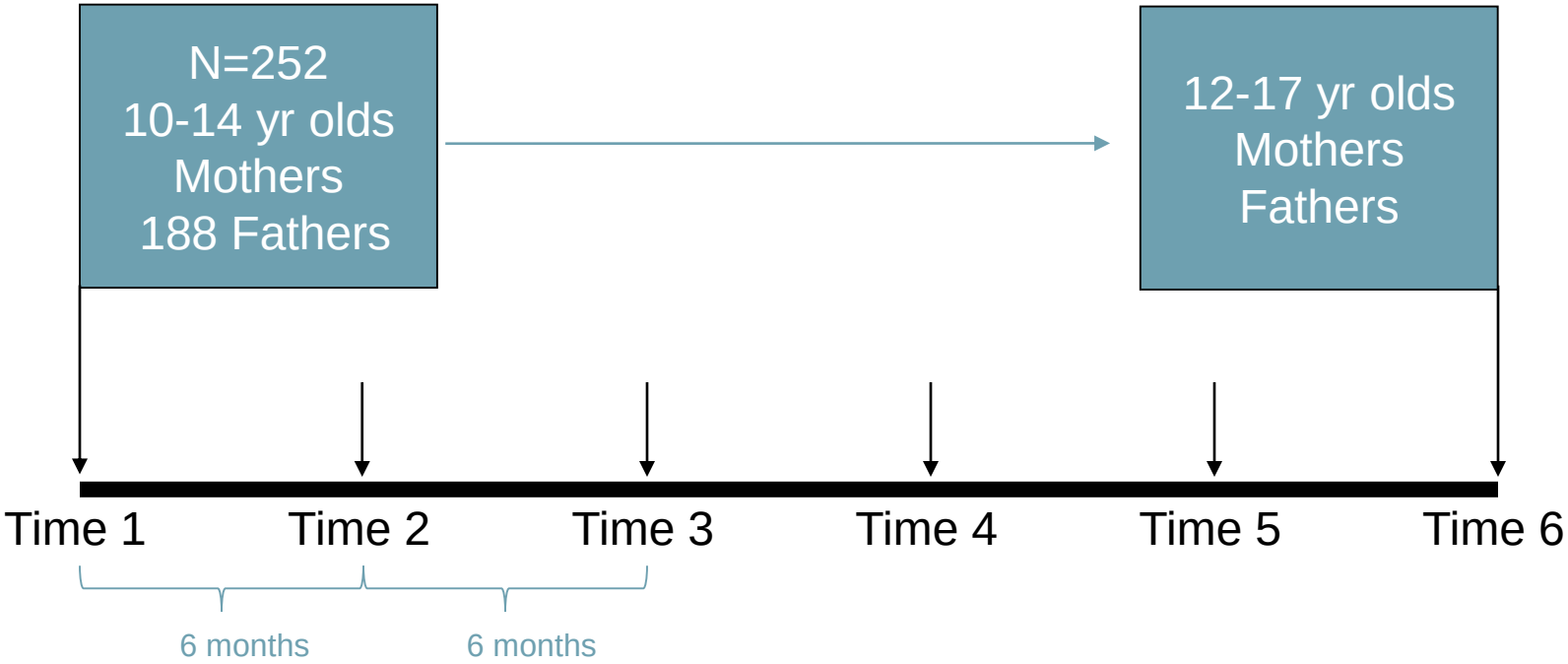
Objectives of Present Study

- Longitudinal trajectories of benefit finding across adolescence
  - Individual differences in trajectory patterns
- Associations with subsequent diabetes management
- Predictors of these trajectories
  - Illness variables
  - Adolescent variables
  - Family relationship variables

ADAPT

Adolescents with Diabetes and Parents Together

NIDDK RO1 DK063044



TIME 1:
M (sd) Age = 12.5 (1.5) yrs old
M (sd) time since dx = 4.7 (3.0) years

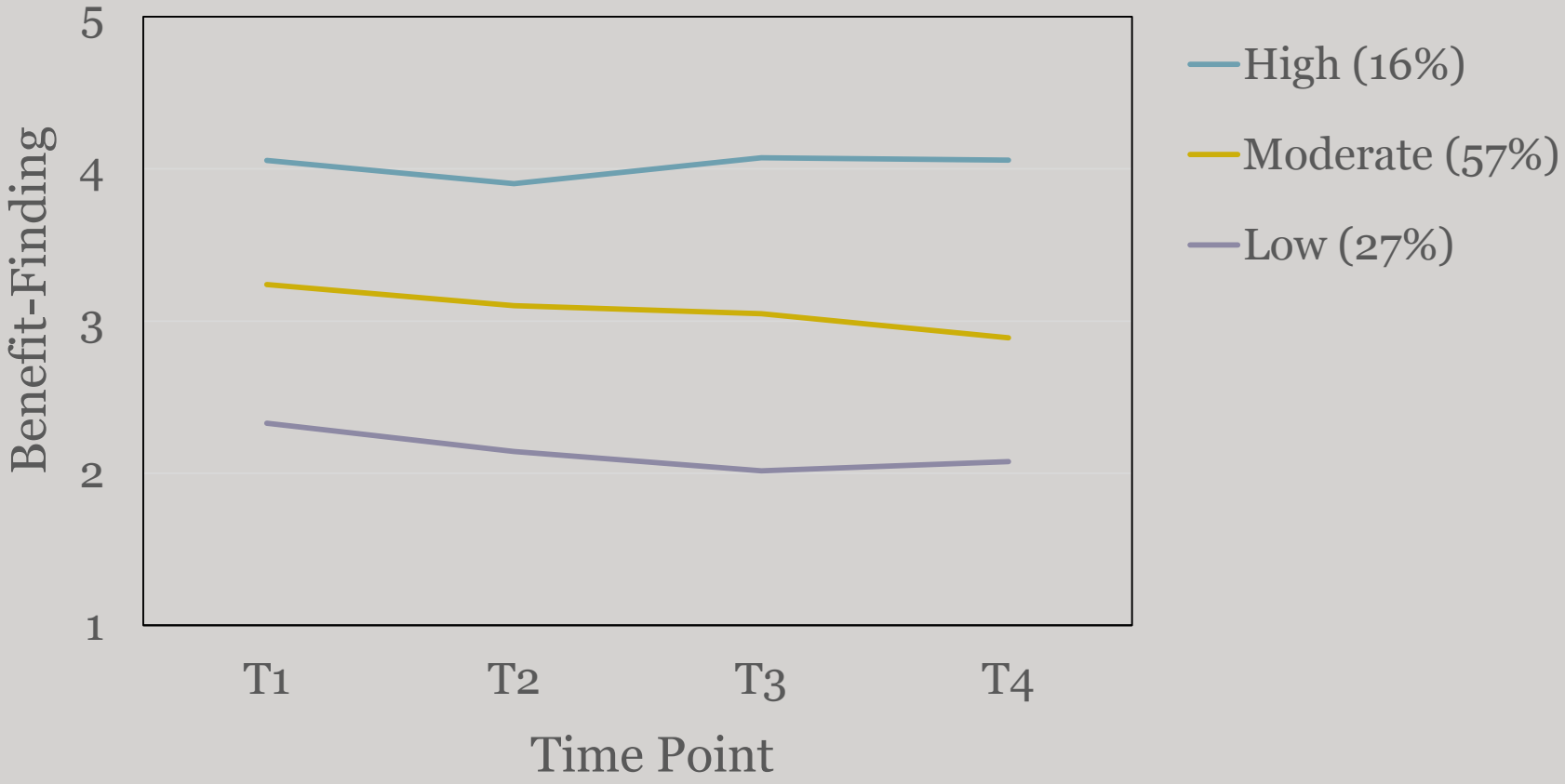
54.4% Female
51.2% on insulin pump
92.8% Caucasian

Benefit Finding and Outcome Measures

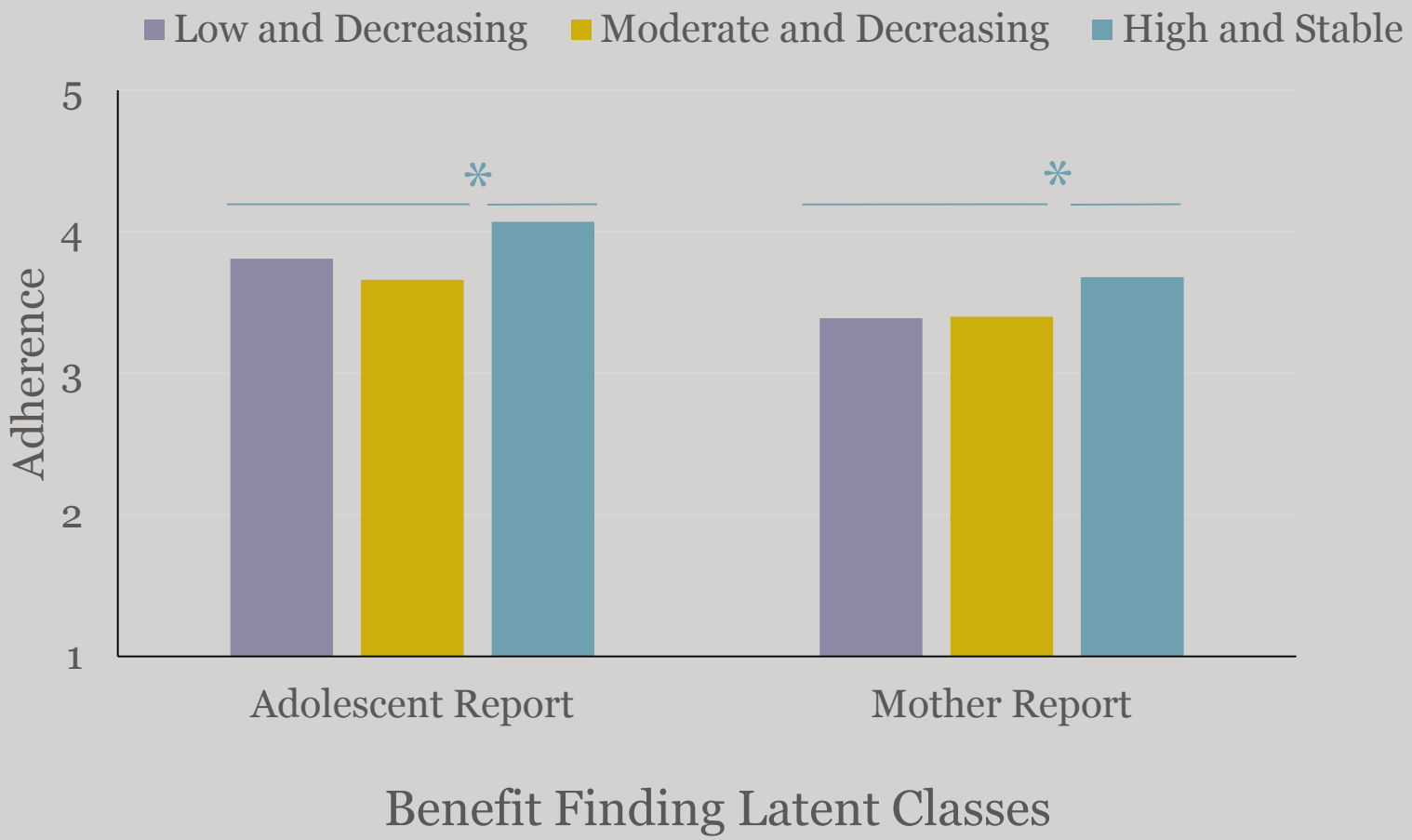
- Benefit Finding (Tomich & Helgeson, 2004)
  - Adolescent report assessed every 6 months (Times 1 - 4)
  - *Having diabetes has: taught me to be more accepting of things; brought my family closer together; helped me realize who my real friends are; taught me to be more patient.*
  - *(1 = not at all, 5 = extremely)*
- Self Care Inventory (Lewin et al., 2009)
  - Adolescent and parent report assessed at Time 6
  - *How often do you (does your child) follow advice for monitoring blood glucose? (1 = never, 5 = always do as recommended without fail)*
- HbA1c
  - Medical records at Time 6

Changes in Benefit-Finding Over Time

- Latent class growth analyses indicated a 3-class solution



Benefit Finding Trajectories Predicted Subsequent Adherence



Predictors of Benefit-Finding Trajectories

Time 1 Variable	*p*-value
Illness Duration	*ns*
Insulin Pump Status	*ns*
Adolescent Age	*ns*
Adolescent Sex	*ns*
Adolescent IQ	*ns*

Predictors of Benefit-Finding Trajectories

Adolescents who displayed different benefit-finding trajectories had different relationships with their parents at Time 1

Time 1 Variable	*p*	*Post-hoc tests*
Diabetes Responsibility (M)	*ns*	--
Diabetes Responsibility (F)	*ns*	--
Relationship Quality (M)	< .005	*Low < Moderate & High*
Relationship Quality (F)	< .005	*Low & Moderate < High*
Diabetes Monitoring (M)	< .01	*Low & Moderate < High*
Diabetes Monitoring (F)	< .01	*Low & Moderate < High*

M = Mother; F = Father

Benefit-Finding Trajectories and Self-Regulation

T3 Variable	*p*	*Post-hoc tests*
IPQ Illness Chronicity (T3)	*ns*	--
IPQ Illness Severity (T3)	*< .05*	*Low < High*
IPQ Teen Control (T3)	*< .01*	*Low < Moderate & High*
IPQ Parent Control (T3)	*< .05*	*Low < High*
IPQ Treatment Control (T3)	*< .01*	*Low < Moderate & High*
IPQ Negative Emotions (T3)	*ns*	--
Emot Reg – Cognitive Analysis (T3)	*< .001*	*Low < Moderate < High*
Emot Reg – Positive Reframing (T3)	*< .001*	*Low < Moderate < High*
Emot Reg – Emotion Expression (T3)	*< .005*	*Low < Moderate < High*
Emot Reg – Reappraisal (T3)	*< .005*	*Low < Moderate & High*
Emot Reg – Emotional Suppress (T3)	*ns*	--

Conclusions

- Benefit finding decreases across adolescence, but there are individual differences in these longitudinal trajectories, with some adolescents developing and maintaining high levels of benefit finding.
- Benefit-finding may be a resources for adolescents dealing with type 1 diabetes that can motivate better diabetes self-management
- Benefit finding may be develop out of high quality relationships with parents, and reflect self-regulation skill development
- Unclear whether benefit finding effects are independent of other self-regulation skills

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