Psychosocial Issues with Type 1 Diabetes

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Current Research Support:

- **R01-DK 080831**: Use of Continuous Glucose Sensors in Adolescents with Inadequate Diabetic Control
- **Patient-Centered Outcomes Research Institute**: Shared Medical Decision Making in Pediatric Diabetes
- **Nemours**: Clinician-Parent-Patient Communication in Pediatrics

**No disclosures to report**
Objectives

- Summarize the evidence-base on psychological variables that may affect teens’ T1D self-care.
- Understand behavioral mechanisms that may impede self-care in adolescents.
- Recognize the critical elements of effective behavioral interventions targeting improved self-management.
Adherence by Age Group in 4 Cross-Sectional T1DM Samples

- Adherence rates for age groups:
  - <8: n=147
  - 8-<10: n=122
  - 10-<12: n=376
  - 12-<14: n=104
  - 14+: n=104

The graph shows a downward trend in adherence rates across different age groups.
A Universal Observation?

Family Environment

Diabetes Outcomes
Inside the Black Box

Family Environment → ? → Diabetes Outcomes
Empirically Validated Psychological Influences on T1D Management

- Psychological adjustment of parent & youth
- Number of adult caregivers in home
- Communication and conflict negotiation
- Parental withdrawal versus involvement
- Parental monitoring and adolescent disclosure
- Absence of clear expectations for self care
- Parents’ diabetes problem solving skills
Caregivers’ and Youths’ Diabetes Problem Solving Skills and HbA1c

- 114 youths with T1DM (9-14 years old) and 109 caregivers were studied over 9 months.
- Youth and caregiver completed Diabetes Problem Solving Interview separately at baseline.
- Respondents analyzed several diabetes vignettes posing problematic blood glucose fluctuations.
- Responses were recorded and later coded using reliable vignette-specific coding rules.
Caregivers’ Diabetes Problem Solving Interview Scores and Youths’ HbA1c Levels

- Low DPSI
- Medium DPSI
- High DPSI

Scores and Youths’ HbA1c Levels

HbA1c (%)

Months

- 0 3 6 9

- Low DPSI
- Medium DPSI
- High DPSI

Graph showing the relationship between caregivers’ diabetes problem solving interview scores and youths’ HbA1c levels over different months.
Youths’ Diabetes Problem Solving Interview Scores and HbA1c Levels

- Low DPSI
- Medium DPSI
- High DPSI

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<tr>
<th>HbA1c (%)</th>
<th>Months</th>
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(Nemours logo)
Collaborative Involvement of Primary and Secondary Caregivers and Youths’ T1DM Adherence

- 309 families with two adults involved in diabetes management.
- Youths rated each parent’s involvement in collaborating with the youth for diabetes care and problem solving.
- Families were grouped by Collaborative Parent Involvement scores as follows:
  - HH: Both caregivers $\geq$ CPI median
  - LL: Both caregivers $<$ CPI median
  - HL: Primary $\geq$ CPI median; Secondary $<$ CPI median
  - LH: Primary $<$ CPI median; Secondary $\geq$ CPI median
- Diabetes outcomes compared among these groups

Wysocki, et al / Ped Psychol 2009
Diabetes Self Management Profile (Parent Report)
Basic Behavioral Principles

• Behavior can be strengthened either by positive reinforcement or by avoidance of aversive events.
• Behavior is more strongly controlled by immediate consequences than by delayed consequences.
• Behavior that is reinforced intermittently is stronger than behavior that is reinforced consistently.
• Avoidance of aversive events may encourage “superstitious” behaviors.
• Uncontrollable adverse events may lead to “Learned Helplessness”.
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Positive
Better health & QOL
Lifestyle flexibility
More life choices
Avoid complications
Self-efficacy

Aversive

Intrinsic
Extrinsic
Positive

- Better health & QOL
- Lifestyle flexibility
- More life choices
- Avoid complications
- Self-efficacy

Aversive

- Pain
- Time & effort
- Poor/variable BG
- Unexpected low BG
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<td>Please HCPs, parents</td>
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<td>Opportunity for activities</td>
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<td>Minimize differences from peers</td>
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<td>Loss of privacy</td>
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<td>Loss of drivers license</td>
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Why is near-perfect T1D self-care so difficult to achieve?

• Consequences (+ or -) are often delayed.
• Consequences often loosely related to a specific self-management act.
• Probability of an adverse event after a specific lapse in self care may be low.
• Adverse events may appear to be capricious.
• Risk-taking may enhance peer affiliation.
• Fear of hypoglycemia may impact treatment decisions.
• Other problems/ opportunities may preempt T1D management as a priority.
Screening for Psychosocial Problems

- **Problem Areas in Diabetes Scale-Parent Version**  
  (Markowitz et al, Diabetic Medicine, 2012)
- **Collaborative Parent Involvement Scale**  
  (Nansel et al, J Pediatr Psychol, 2008)
- **Parental Monitoring of Diabetes Scale**  
  (Ellis et al, J Adolesc Health, 2008)
- **My-Q**  
  (deWit, et al, Pediatr Diabetes, 2012)
- **Revised Diabetes Family Conflict Scale**  
  (Hood, et al, Diabetes Care, 2007)
- **Diabetes Self Management Profile-Self Report**  
  (Wysocki, et al, Pediatr Diabetes 2012)
Empirically validated interventions

- **Behavioral Family Systems Therapy** (T. Wysocki)
- **Multi-systemic Therapy** (D. Ellis)
- **Family Teamwork Intervention** (L. Laffel & B. Anderson)
- **Coping Skills Training** (M. Grey)
- **Diabetes Self Management Training** (A. Delamater)
- **Motivational Interviewing** (S. Channon)
- **Family Management of Childhood Diabetes** (T. Nansel)
Commonalities of Effective Interventions for T1D Teens

- Theoretically-grounded
- Diabetes-specific target behaviors
- Experiential learning
- Flexible; Adaptive
- Sensitive to cultural diversity
- Sustainable delivery system
Thank you for your attention!