Mental Health Challenges and Implications for Adherence to the Diabetes Regimen

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Objectives

- Understand developmental changes in diabetes management across childhood and adolescence.
- Understand common mental health challenges for adolescents and adults (i.e., depression and anxiety) and implications for diabetes adherence.
- Be familiar with major interventions for those experiencing both diabetes and depression and strategies for identifying patient needs and increasing access to these interventions.

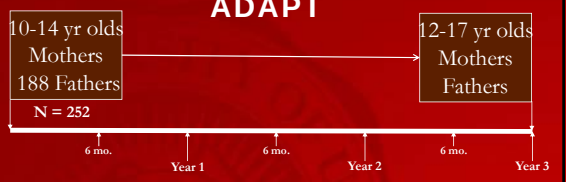
Adolescence: A Difficult Time for Managing Diabetes

- Poorer adherence
- Greater insulin resistance
- Deteriorating metabolic control
- Increased psychological distress
- Greater autonomy and independence from parents
- Decreased parental involvement
- Greater involvement of friends
- Parents experience distress as problems arise

A Hard Self-Regulation Process

- Coordination of multiple behaviors
  - Inject insulin
  - Test blood glucose levels
  - Diet
  - Exercise
- Complex cognitive skills
- Life-long motivation

ADAPT



PARENTAL INVOLVEMENT
- High Quality
- Monitoring
- Behavioral Involvement

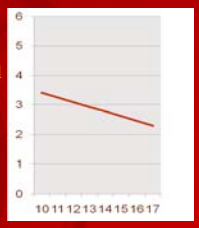
RISK & PROTECTIVE
- Externalizing
- Internalizing
- Self-efficacy

Parental Monitoring Declines Across Adolescence

Mom

Ave slope: -.23, $p < .05$

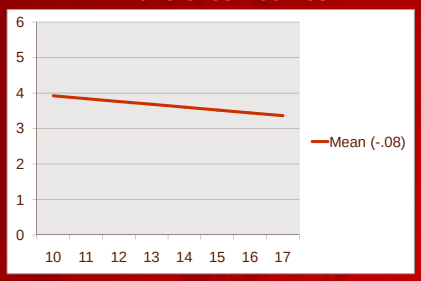
Dad



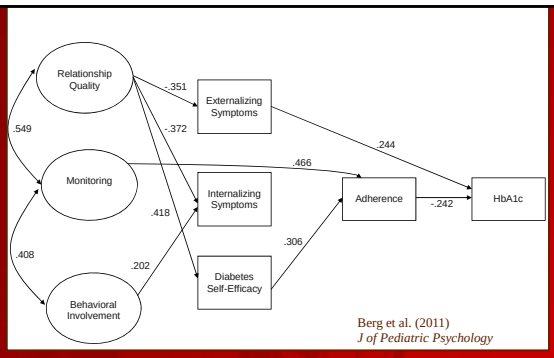
Ave slope: -.16, $p < .05$

King et al., 2010

As Parental Involvement Declines, Adolescents' Adherence Declines



Adherence: Ave slope: -.08, $p < .05$



Parental involvement is associated with better adherence by bolstering adolescents' self-efficacy for diabetes management. Also, is associated with reductions in externalizing (acting out) behaviors.

Parenting is Impaired when Parents Experience Depression

Anxiety Disorders: PTSD

Mothers and fathers of children newly diagnosed with type 1 diabetes endorsed Post-traumatic Stress Disorder symptoms

Mothers
- 22.4% at 6 weeks
- 16.3% at 6 months
- 20.4% at 12 months

Fathers
- 14.6% at 6 weeks
- 10.4% at 6 months
- 8.3% at 12 months

Landolt, M. A., Vollrath, M., Laimbacher, J., Gnehm, H. E., & Sennhauser, F. H. (2005). Prospective study of posttraumatic stress disorder in parents of children with newly diagnosed type 1 diabetes. *J Am Acad Child Adolesc Psychiatry, 44*(7), 682-689.

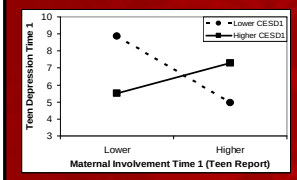
Maternal Depression and Diabetes Management

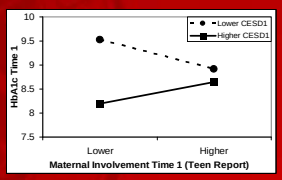
- Maternal depressive symptoms are elevated in the year after diagnosis
- Maternal depression associated with child adjustment in general
- Believed to reflect impaired parenting
  - Intrusive, cold, and hostile
  - Distant and withdrawn
  - Not in tune with the child's needs and goals

Mothers with higher depression stay more involved as adolescents get older.

Wiebe, Berg et al. (2011). *Journal of Pediatric Psychology, 36*, 837-846

- Maternal involvement is associated with better adjustment only when mothers have fewer depressive symptoms





Maternal depression & parent-child transactions?

- Parental depressive symptoms appear to negatively color perceptions of adolescents' competence in diabetes management (Butler et al., 2009)
- Maternal depressive symptoms and daily diary
  - Higher daily maternal worry
  - Lower daily maternal confidence in adolescent
  - Involvement is less responsive to daily diabetes problems
- Maternal depression associated with less child-centered parenting among adolescents with diabetes (Jaser et al., 2010)

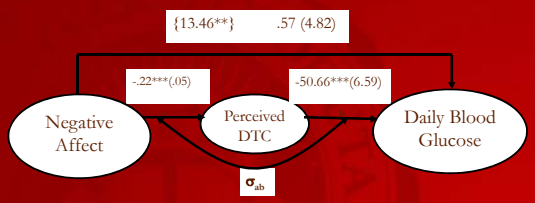
Butler, Berg, et al., . . . Wiebe (2009). *Journal of Family Psychology, 23*, 611-614.

Negative Affect and Diabetes Management

Negative Emotions and Diabetes Management

- Negative emotions may limit teens' cognitive resources, management of diabetes tasks
- Negative emotions are associated with poorer diabetes management in adolescents *(Korbel et al., 2006)*
- Emotion is also linked to behavior, e.g., emotional eating *(Balfour et al., 1993)*

Negative Affect and Perceived Competence and Blood Glucose (Fortenberry et al. 2009). *Annals of Behavioral Medicine*



Daily negative affect is associated with lower perceived efficacy to manage diabetes and higher blood glucose.

If negative affect effects daily management, what happens when individuals experience more serious clinical signs of depression?

Do adolescents with type 1 diabetes experience more mental health symptoms?

- Recent meta-analysis summarizing results across several studies indicates that those with diabetes experience
  - More clinical depression (especially girls)
  - Anxiety
  - Do not experience more externalizing symptoms
  - Effects are smaller for more recently conducted studies.
  - Effects are larger when HbA1c is worse.

Reynolds & Helgeson (2011), *Annals of Behavioral Medicine*

Type 2 Diabetes and Depression

- Depression is 2x as likely in those with diabetes versus those without (Anderson et al., 2001).
- Depression is a risk factor for becoming diagnosed with diabetes

Rustad et al. (2011) *Psychoneuroendocrinology*

Effects of Depression on Type 2 Diabetes

- Worse glycemic control (Lustman et al. 2000)
- Increase in severity or number of diabetic complications such as retinopathy and nephropathy (de Groot et al., 2001).
- Increased cardiovascular risk factors (Rubin et al., 2010)
- Higher rates of functional disability (Egede, 2004).
  - Those with both diabetes and depression are 3 x more likely to need assistance with tasks of daily living than those without either.

Psychiatric Co-morbidities

- Mood Disorders:
  - Major Depressive Disorder (MDD)
- Anxiety Disorders
  - Specific (e.g. Needle) or Social Phobias
  - General Anxiety Disorders (GAD)
  - Post-traumatic Stress Disorder (PTSD)
- Behavior Disorders (Childhood Specific)
  - Attention Deficit/Hyperactivity Disorder (AD/HD)
  - Oppositional Defiance Disorder (ODD)
- Eating Disorders
  - Anorexia Nervosa (AN) / Bulimia Nervosa (BN)
  - Intentional Insulin Omission

Jennifer

- 13-year-old female
- 4-year history of type 1 diabetes
- Struggles with monitoring blood glucose when away from home
- Tearful and emotional when reminded to test.
- Parents report she has seemed down lately.
- "Her numbers have been all over the place ever since she hit puberty."

Mood Disorders and Diabetes

- Major Depression had a significantly higher estimated rate than conduct disorder and GAD in children with type 1 diabetes
- Highest incidence rates during 1st year of medical condition
- Initial maternal psychiatric problems increased risk
- Previous psychiatric disorder increased risk

Kovacs, M., Goldston, D., Obrosky, D. S., & Bonar, L. K. (1997). Psychiatric disorders in youths with IDDM: rates and risk factors. *Diabetes Care, 20*(1), 36-44.

MDD: Symptoms

- 5 or more of the following present during the same 2-week period
- Depressed mood or loss of interest
  - Weight loss or gain
  - Insomnia or hypersomnia
  - Psychomotor retardation or agitation
  - Fatigue or loss of energy
  - Feelings of worthlessness or inappropriate guilt
  - Diminished ability to think or concentrate
  - Recurrent thoughts of death, suicidal ideation, or suicidal attempt
- Change from previous level of functioning

Depression versus Sadness

- Duration of symptoms
- Intensity of symptoms
- Significant change from previous emotional functioning
- Depression causes distress or impairment in functioning

Mood Disorders: Treatments

- Therapy:
  - Cognitive-Behavioral Therapy
  - Family Therapy
  - Adjustment to diagnosis, coping and problem-solving strategies, grief or loss issues, addressing autonomy and independence with parents
- Medication:
  - Selective Serotonin Reuptake Inhibitors
    - i.e., Prozac, Zoloft
- Referrals:
  - Psychologists, Social workers, Counselors, Psychiatrists

What might this look like in a clinic or primary care setting?

Justin

- 15-year old male
- 9-year history of type 1 diabetes
- Will not monitor diabetes around friends.
- Is very anxious at school.
- Parents report he has not been sleeping well lately.
- "He explodes whenever his blood glucose numbers are not in range."

Identifying Patients needing further intervention

A) Patient Struggling to manage diabetes?
- Persistent challenges with adherence?
- Need to assess obstacles to adherence

B) Interfering mental health diagnosis?
- Treatment of disorder may improve health behaviors and outcomes?
- Find appropriate referral; Motivate Patient

C) Diabetes-specific problems in management?
- Diabetes specific interventions (when accessible)
  - Pediatric Psychologists can also offer these

Identifying Patients needing further intervention

A) Patient Struggling to manage diabetes?

- ASSESS with Adolescent and Family!!!

Biological
- Medical Regimen; Insulin Sensitivity
- Co-morbidities (e.g., CF, high cholesterol)

Psychological
- Beliefs about diabetes/Healthcare
- Coping strategies, Behavior Problems
- Interfering Mental Health Diagnoses

Social
- Family Functioning and Stress
- School/Work Environments (e.g., learning disability)

Identifying Patients needing further intervention

B) Interfering mental health diagnosis?

- Initiate referral process
- Motivate patient and family to follow-through with referral

- Locate an appropriate referral in your area
- Increase Motivation for follow-through
  - Identify obstacles to follow-through & Problem-solve
  - Identify goals for the patient and family
  - Support recognition of discrepancy between goals and obstacles
- For children/adolescents therapy is often first line of treatment
  - See this website for information on evidence based treatments:

http://www.effectivechildtherapy.com/sccap/?m=sPro&fa=pro_ESToptions

Identifying Patients needing further intervention

C) Diabetes-specific problems in management?

- When more education is not enough!
- Diabetes specific interventions (when accessible)
- Pediatric Psychologists can also offer these

- Family needs more support in:
  - communication, problem-solving, sharing diabetes responsibility, diabetes coping skills, using behavior and reward plans
- Individual therapy
  - (e.g., CBT, Parent Training, Family Therapy) with medical psychologist or social worker
- Type 1 Diabetes Specific Developed Interventions
  - Coping Skills Training (Grey, 2000)
  - Diabetes Behavioral Family System (Wysocki, 2008)
  - Diabetes Multisystemic Therapy (Ellis, 2005)

Increasing Motivation and Behavior Change

- Motivational Interviewing
  - Identify goals (short and long-term)
  - Encourage discussion of discrepancies between current behavior and goals
    - "Roll with resistance"
      - don't use "but" statements
      - "I hear that you want to improve your HbA1c so you can get a driver's license and you also do not want your parents to increase their monitoring of your diabetes"

Miller, W. R., & Rollnick, S. (2002). *Motivational interviewing: Preparing people for change (2nd ed.)*. New York: Guilford. ISBN: 1-57230-563-0

Increasing Motivation and Behavior Change

- Behavioral Methods
  - Identify target behaviors for change
    - Identify small goals between current behavior and goals (shape the new behavior)
  - Conceptualize the function of current behavior
    - Is the child needing a skill?
      - » Forgetting to test due to lack of attention/planning
    - Is the child receiving/gaining access to a preferred stimulus
      - » Forgetting to test, mom gets involved=receipt of attention
  - Identify rewards for behavior change *effort*
  - Use Tracking Sheets

Summary

- Biological, psychological, and familial changes during adolescence make it a challenging time for diabetes management.
- Depression and anxiety are more common in those with diabetes than those without and present additional challenges for adherence and metabolic control.
- Effective interventions are available that involve a family-based approach.
- Motivational approaches are helpful in getting families the treatment that they need.