Parent Involvement, Family Conflict, & Quality of Life among Adolescents with Type 1 Diabetes

Marisa E. Hilliard, Marcie Goeke-Morey, Rusan Chen, Clarissa Holmes, & Randi Streisand
Objectives

- Type 1 Diabetes (T1D)
  - Illness characteristics
  - Adherence

- Adjustment and Quality of Life
  - Psychosocial risks of T1D
  - QOL construct, measurement, applications to T1D

- Family factors
  - Links with health and QOL
  - Parent-child management of T1D

- Current Study
  - Methods, Results, Discussion
Type 1 Diabetes (T1D)

- Common childhood chronic illness
- Complex treatment regimen
- Risk for complications
- Adherence ~50% in adolescence – Deteriorates over teen years

1 Silverstein et al., 2005  
2 Gowers et al., 1995  
3 Kovacs et al., 1992
Psychosocial Risk & QOL

- Increased risk for psychological symptoms\(^4\)
  - Related to poor adherence and health outcomes\(^3\)

- Health-related QOL (HRQOL)\(^5\):
  - Role of health in daily life
  - Satisfaction with health status and treatment
  - Impact of illness (physical & psych symptoms)
  - Worry or bother related to illness

- Positive adjustment and HRQOL linked with better diabetes outcomes\(^6\)

\(^3\) Kovacs et al., 1992 \(^4\) Kovacs et al., 1997 \(^5\) Ingersoll et al., 1991 \(^6\) Hoey et al., 2001
Family Diabetes Management

- Increasing autonomy typical of adolescence\(^7\)
  - Expectations for independent self-care\(^8\)
  - Parents less involved in diabetes management\(^9\)
  - Linked with worse adherence and health outcomes\(^10,\ 11,\ 12\)

- Ongoing parent involvement is protective\(^8,\ 13\)
  - Parent-child collaboration
  - Monitoring diabetes tasks
  - Practical and emotional support

\(^7\) Beyers et al., 2003 \(^8\) Wysocki et al., 1996 \(^9\) Palmer et al., 2004 \(^10\) Holmes et al., 2006 \(^11\) Lewandowski & Drotar, 2007
\(^12\) Anderson et al., 2002 \(^13\) Wiebe et al., 2005
Family Conflict

- Diabetes-specific family conflict predicts\textsuperscript{14, 15}:
  - Adherence, self-care
  - Health outcomes (A1C)
  - QOL, emotional functioning

- May impact if/how parents and teens work together for diabetes care\textsuperscript{12}

\textsuperscript{12} Anderson et al., 2002 \textsuperscript{14} Anderson, 2004 \textsuperscript{15} Hood et al., 2007
The Current Study
Aims

To investigate the relationship between:

- parental involvement in diabetes care
- diabetes-specific family conflict
- health-related QOL

in early adolescence
Hypothesized Model

- Parent Monitoring
- Allocation of Responsibility (to Child)
- Adolescent HRQOL

Low Conflict
High Conflict
Method & Participants

- Baseline assessments from ongoing RCT
- 285 eligible families contacted, 190 consented, complete data from 162 parent-teen dyads
- 55% Female, 91% Mothers
- Age 11-14, M = 13.2 years (SD = 12)
- Illness duration M = 5.4 years (SD = 3.3)
- M HbA1C = 8.8% (SD = 1.7)
- 66% on intensive insulin regimen (basal/bolus or pump)
- 80% 2 parents in home
Measures

- **Allocation of responsibility: Diabetes Family Responsibility Questionnaire**\(^{16}\) (DFRQ)

- **Parent monitoring: 24-hour Recall Interview**\(^{17}\) (RI)
  - % of tasks observed by parent

- **HRQOL: PedsQL – Diabetes Module**\(^{18}\)

- **Conflict: Diabetes Family Conflict Scale –Revised**\(^{15}\) (DFCS)
  - Moderating variable – above/below median

- **Demographic/Medical Information**
  - Questionnaire and medical record review

\(^{15}\) Hood et al., 2007 \(^{16}\) Anderson et al., 1990 \(^{17}\) Johnson et al. 1986 \(^{18}\) Varni et al., 2003
Data Analysis

- MPlus used for structural equation models (SEM)

- 2-step modeling procedure:
  - Latent variable measurement model
  - Structural equation model

- Moderation hypothesis tested through comparative model fit for nested hierarchical models and individual paths
Results
Overall: Excellent Fit
\[ X^2 = 103.67 \ (89) \ p = .14 \]
RMSEA = .03 (CI = .00 - .06)
CFI = .98
SRMR = .06

Moderated: Poor Fit (Measurement Invariance)
\[ X^2 = 283.33 \ (206) \ p = .05 \]
RMSEA = .07 (CI = .05 - .09)
CFI = .88
SRMR = .114
### Overall: Excellent Fit

- $X^2 = 103.67$ (89) $p = .14$
- RMSEA = .03 (CI = .00-.06)
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### Moderated: Poor Fit (Measurement Invariance)

- $X^2 = 283.33$ (206) $p = .05$
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#### Factor loading (S.E.)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Factor Loading (S.E.)</th>
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<td>Child-report Diabetes Problems</td>
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<tr>
<td>Parent-report Diabetes Problems</td>
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<td>Child-report Treatment I</td>
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<td>.30 (.25)</td>
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<tr>
<td>Parent-report Communication</td>
<td>.30 (.30)</td>
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</tbody>
</table>
Structural Equation Model

Parent Monitoring

Parent-report Allocation of Responsibility

Child-report Allocation of Responsibility (to child)

Adolescent HRQOL

Moderated (Lower v Higher Conflict): Acceptable fit
$X^2=309.14$ (248) $p<.05$
RMSEA=.06 (CI=.03-.08)
CFI=.91
SRMR=.100

Unmoderated: Very good fit
$X^2=135.66$ (117) $p=.11$
RMSEA=.03 (CI=.00-.06)
CFI=.98
SRMR=.07
Structural Equation Model

Parent Monitoring

Adolescent HRQOL

Parent-report Allocation of Responsibility

Child-report Allocation of Responsibility (to child)

.46

.21
Structural Equation Model

Parent Monitoring

Adolescent HRQOL

Parent-report Allocation of Responsibility
Child-report Allocation of Responsibility (to child)

.46
.21
.12
-.12
Structural Equation Model

Parent Monitoring

Parent-report Allocation of Responsibility
Child-report Allocation of Responsibility (to child)

Adolescent HRQOL

.46
-.12
.21

-.12
-.20
.03

-.01
-.10
Structural Equation Model

Parent Monitoring

Parent-report Allocation of Responsibility

Child-report Allocation of Responsibility (to child)

Adolescent HRQOL

Model Comparison

χ² Δ = 173.5 (131), p < .05
Discussion
Parent Involvement & QOL

Parent involvement may impact HRQOL
- Differently for families with more vs. less conflict

Not simply who takes responsibility for tasks:
- Amount of parent monitoring
- Quality of parent-child relationship about diabetes
Role of Family Conflict

- More parent monitoring $\rightarrow$ better HRQOL
  - Lower conflict group (trend)
  - Higher conflict group

- Possible benefits for lower conflict families:
  - Positive teamwork for diabetes management
    - Shared responsibility
    - Parent monitoring
Implications for Research and Care

- Encouraging parent involvement in teens’ care:
  - May be valuable if low conflict
  - May be risky if high conflict

- Families may benefit from support in
  - Conflict avoidance
  - Positive communication and problem-solving
  - Parent-child teamwork

Related to diabetes management in early adolescence.
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Questions?

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