Physician Recommendations about Maternal Involvement in Adolescent Diabetes Management

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Running Title: Physician Recommendations

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Received for publication 15 August 2007 and accepted in revised form 29 December 2007.
ABSTRACT

Objective: Examine whether perceptions of physician recommendations about maternal involvement in adolescent diabetes management are associated with children’s reports of mothers’ involvement the subsequent week.

Research Design and Methods: Youth with type 1 diabetes (aged 10 to 15 years) and mothers completed scales measuring perceptions of physician recommendations about maternal involvement. At their appointment, and again one week later, children reported mothers’ involvement in diabetes over the past week.

Results: Fifty-three dyads provided usable data at both time-points. Perceived recommendations to increase involvement were associated with children’s reports of increased maternal collaboration the subsequent week (b = 0.81, P < .05), an effect that was stronger among boys (b = -1.21, P < .005). Appraised maternal collaboration was correlated with better A1C (r = -.39, P < .005).

Conclusions: Physicians may facilitate adaptive forms of maternal involvement during adolescence by conveying messages about involvement to patients and families.
Parental involvement in diabetes care decreases across adolescence, and premature declines are associated with poor management (1-3). Nevertheless, sustained parental involvement during adolescence must be adjusted to support the child’s autonomy and independent diabetes-management skills. Parental collaboration has been identified as one way to facilitate diabetes management while supporting autonomy (4, 5), but the factors predicting optimal involvement during adolescence are unknown. Physicians may facilitate optimal involvement given their knowledge of the patient and an awareness that families need guidance to transition to independence. There has been no systematic examination of physician recommendations regarding parental involvement, and interventions to promote involvement have not previously focused on physicians. This preliminary study explored whether mothers’ and children’s reports of physician recommendations about maternal involvement were associated with shifts in mother’s involvement the subsequent week.

**RESEARCH DESIGN AND METHODS**

Children (20 male, 38 female) aged 10 to 15 (M=13.39 yrs, SD=1.69) with type 1 diabetes ≥1 year (M=4.32 yrs, SD=3.25) and their mothers were recruited during a pediatric diabetes appointment. Fifty-eight of 67 eligible dyads approached participated (87%); 41% were on an insulin pump, with the remainder prescribed multiple daily injections. After the visit, children and mothers independently reported physician recommendations about maternal involvement. At this time, and again 1-2 weeks later, children reported how mothers had been involved in helping them handle diabetes problems over the preceding week. A1C was indexed from medical records. Participants were compensated $10 for each assessment.

Mothers’ involvement was measured via children’s categorization of how mother was involved in their handling of 10 diabetes-management problems over the past week (mother was Uninvolved; Supportive = gave suggestions, provided encouragement; Collaborative = worked as a team, problem-solved together; or Controlling = controlled my actions, too involved) (5). The ten problems were generated through content-analyses of previously-reported diabetes stressors (6). Frequencies for each form of involvement were computed; appraised control was not analyzed because it occurred infrequently. Appraised collaboration was correlated with A1C (r = -.39, P < .005).

Physician recommendations were measured by child and mother ratings (1 = strongly disagree to 5 = strongly agree) of whether physicians made six suggestions regarding mother’s involvement. Principal components analyses revealed two factors for child-reported messages, and a single factor for mother reports. The first factor for each reporter was analyzed given acceptable reliability and its focus on increasing mother’s involvement. For children, this included three items: physician suggested mother be more involved; watch the child; take charge (α = .71). For mothers, these and the remaining three items (suggested mother provide support; collaborate; explore independence) loaded positively on a single factor labeled “Alter Involvement” (α = .84). Scores were computed by averaging ratings across relevant items. Child (M=2.24, SD=1.05) and mother (M=2.75, SD=1.06) reports to increase/alter involvement were normally distributed and converged, r = .55, P < .001.
RESULTS
Two dyads identified as outliers were excluded from analyses (N = 56). Perceived recommendations to increase or alter involvement were correlated with poorer A1C ($r > .40$, $Ps < .005$), but were unrelated to age, pump status, and illness duration ($-.23 < r < .02$, $Ps > .08$).

Regression analyses examined whether perceived recommendations were associated with post-clinic maternal involvement, while covarying pre-clinic involvement. Preliminary analyses suggested gender and age differences, but showed no effects of A1C, duration, or pump status. Thus, pre-clinic involvement was entered on Step 1 without other covariates, main effects for child gender, age and physician recommendations were centered (7) and entered on Step 2, and all two-way interactions entered on Step 3. Standardized regression weights for significant ($P < .05$, two-tailed) physician recommendation effects are reported. Three participants without complete follow-up measures were excluded from these analyses (N=53).

Child-reported recommendations were associated with higher appraisals of collaboration in the post-clinic week, regardless of age or gender ($b = .81$, $t(48) = 2.09$, $P < .05$). Mother-reported recommendations interacted with gender to predict children’s appraised collaboration ($b = -1.205$, $t(45) = -3.02$, $P < .005$) and support ($b = .717$, $t(45) = 2.40$, $P < .05$). When mothers perceived suggestions to Alter Involvement, sons reported mothers became more collaborative (Figure 1, top), while daughters reported mothers became more supportive (Figure 1, bottom).

CONCLUSIONS
Findings suggest physicians may facilitate mothers’ involvement in diabetes-management across adolescence. Children and mothers reported physicians made recommendations to increase or alter maternal involvement when the child had poorer A1C, and these recommendations were associated with heightened appraisals of maternal collaboration the subsequent week. Associations with appraised collaboration appeared stronger for boys, potentially because mothers’ expect less independence in diabetes care from sons relative to daughters (8). Results are notable because collaboration may promote parental involvement while supporting adolescent autonomy, and was associated presently with better A1C.

Limitations include the small sample of mostly white (92%), college-educated (68%) families, which restricted power to detect reliable effects. Additional limitations include the use of self-report scales that were not previously validated, the possibility that knowledge of study objectives altered physician-patient interactions, and the brief follow-up which may not reflect stable shifts in maternal involvement.

Results highlight the potential importance of physician recommendations in facilitating optimal maternal involvement in diabetes management. Research that addresses current limitations is indicated, particularly given the significant challenge of maintaining parental involvement in diabetes during adolescence.

ACKNOWLEDGEMENTS
We acknowledge the families and staff at the Utah Diabetes Center, Kathy Free and Valerie Blalock for data-collection efforts, and a grant from the Primary Children’s Medical Center Research Foundation. Portions of these data were presented at Society of Behavioral Medicine, Boston, MA, 2005.
REFERENCES

FIGURE LEGEND

Figure 1. Predicted means for the interaction between gender and mother-reported recommendations predicting appraisals of maternal collaboration (top) and support (bottom). Post-clinic levels of collaboration and support were analyzed while covarying pre-clinic levels.