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- ✓ **Deadline and Procedures**
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Submission number: 101997

Submission

Meeting Information

Organization: **AADE**

Event: **34th Annual Meeting and Exhibition (for Original Research -oral & poster abstracts only)**

Deadline and Procedures

Key:

- ✓ = Section Complete
- X = Section Incomplete

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Contact Information for Primary Presenter / Submitter

I have read and agree to the policies and deadlines Yes

Recording Permission Yes

First Name Arlene

Middle Name / Initial

Last Name / Surname Smaldone

Suffix

Education-related Credentials "PhD", "MA", "BSN"

Licensed Credential "RN"

Advanced Credentials "CDE"

Other Credentials

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AADE Specialty Practice Group

Description of Current Position Assistant Professor of Nursing at Columbia University. Teaching responsibilities include diabetes content in the pediatric nurse practitioner program, health policy for all master's degree students, and assessing clinical evidence for evidence based practice for both entry to practice and clinical doctoral students.

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Education

Degree(s) DNSc

Year 2003

University Columbia University

City, State New York, New York

Area of Study nursing science

Professional Experience / Publications As a pediatric nurse practitioner and diabetes educator, Dr. Smaldone has worked with children and families affected by diabetes over the past 12 years. She completed postdoctoral training at the Joslin Diabetes Center, Boston MA. Her research has been published in Diabetes Care, Pediatrics, and the Maternal Child Health Journal.

Speaker Introduction Dr. Smaldone is a pediatric nurse practitioner and diabetes educator. She received her doctorate at Columbia University and is currently a member of

their faculty. Her research involves children affected by chronic health conditions with an emphasis on children with diabetes. The Symptoms Experiment was conducted during her postdoctoral fellowship at the Joslin Diabetes Center, Boston, MA and was supported by the 2004 AADE Sigma Theta Tau research award.

Conflict of Interest

Company, Relationship serve as a paid consultant to Pfizer Pharmaceuticals Inc. for Exubera.

I have no conflicts to report No

This information acknowledges full disclosure Yes

Contact Information for Additional Presenter (Edit)

I have read and agree to the policies and deadlines Yes

Recording Permission Yes

First Name Katie

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Education-related Credentials "PhD", "MS", "BSN"

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Member Yes

AADE Specialty Practice Group

Description of Current Position Dr. Weinger is an investigator in the Section on Behavioral and Mental Health and an Assistant Professor of Psychiatry at Harvard Medical School. She directs the Joslin Diabetes Center's Office of Research Fellow Affairs as well as the Joslin Clinic's Center for Excellence in Diabetes Education.

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Education

Degree(s) EdD

Year

University Harvard University

City, State Boston, MA

Area of Study psychology

Professional Experience / Publications Dr. Weinger's program of research examines factors that interfere with effective diabetes patient self-management. The Diabetes Education Study, of which Dr. Weinger is Principal Investigator, compares experimental group education incorporating psychological techniques with standard group and individual education. Dr. Weinger's research is published in Diabetes Care and other journals.

Speaker Introduction Dr. Weinger is an investigator in the Section on Behavioral and Mental Health and an Assistant Professor of Psychiatry at Harvard Medical School. She directs the Joslin Diabetes Center's Office of Research Fellow Affairs as well as the Joslin Clinic's Center for Excellence in Diabetes Education. Dr. Weinger's program of research examines factors that interfere with effective diabetes patient self-management. Dr. Weinger serves on the board of directors of the American Association of Diabetes Educators.

Conflict of Interest

Company, Relationship

I have no conflicts to report Yes

This information acknowledges full disclosure Yes

Abstract Form

Title	The Symptoms Experiment: Engaging Adolescents in Diabetes Self Care
Program Area	"Original Research"
Session Type / Format	Oral-Original Research (30 minutes)
Program Goals	"2. Highlight & integrate research, technological advances", "3. Incorporate behavior change and teaching/learning strategies"
Learning Objectives	<p>I. To describe the recruitment and baseline characteristics of adolescents who participated in the Symptoms Experiment study.</p> <p>II. To describe the educational intervention used in the Symptoms Experiment study.</p> <p>III. To examine problem solving behaviors of adolescents with type 1 diabetes regarding blood glucose management.</p> <p>IV. To discuss adolescent and parental evaluation of educational materials.</p>
Content Outline	<p>I. Subject recruitment and baseline characteristics</p> <p>A. Subject recruitment sources</p> <ol style="list-style-type: none"> 1. diabetes camps 2. diabetes support group 3. Children with Diabetes website <p>B. Adolescent participant baseline characteristics</p> <ol style="list-style-type: none"> 1. Age, gender, duration of diabetes 2. Geographic representation 3. Diabetes treatment (pump versus injections) 4. Glycemic control 5. Baseline measurements <ol style="list-style-type: none"> a. diabetes self care (Self Care Inventory) b. diabetes problem solving (Diabetes Problem Solving Measure for Adolescents) c. level of responsibility for diabetes care (Diabetes Family Responsibility Questionnaire) d. frequency of blood glucose monitoring (meter download) e. hypoglycemia frequency (meter download and self report) <p>II Educational intervention</p> <p>A Subject assignment to group</p> <ol style="list-style-type: none"> 1. randomization using minimization technique <p>B Educational intervention</p> <ol style="list-style-type: none"> 1. intervention group - two step intervention <ol style="list-style-type: none"> a. symptoms experiment workbook b. gender specific choose your own adventure story <ol style="list-style-type: none"> (1) decision points (2) see consequences of decision-making 2. attention control group - commercially available diabetes workbook and diabetes storybook. <p>III. Results</p> <ol style="list-style-type: none"> 1. self care behaviors 2. hypoglycemia 3. diabetes problem solving pre and post intervention 4. comparisons by group and gender <p>IV. Evaluation of education</p> <ol style="list-style-type: none"> A. Adolescent perspective B. Parental perspective
Marketing Description	This presentation is geared to diabetes educators working with pediatric populations with type 1

diabetes in a variety of settings: hospital, outpatient, and community settings including schools.

Research Hypothesis, Purpose, or Objective Adolescence is a vulnerable time for children affected by diabetes. Evidence suggests that deterioration of metabolic control occurs during adolescence as children move from being completely dependent on parents and nuclear family for diabetes care and guidance to more autonomous decision-making. The ongoing management of diabetes is complex requiring not only the acquisition of technical skills but also the integration of problem solving ability into daily activity. The purpose of this study was to assess efficacy of "The Symptoms Experiment," a two step educational/behavioral intervention, designed to assist adolescents in identification and management of their unique symptoms of hypo and hyperglycemia. We hypothesized that compared to adolescents in an attention control group, those who participate in "The Symptoms Experiment" will demonstrate improved diabetes problem solving ability. A secondary aim of this study was to identify the characteristics of children who derive greatest benefit from the intervention.

Study/Design Methods This pilot study examined adolescents assigned to either "The Symptoms Experiment" or an attention control (placebo) group. We used an attention control group to allow for detection of differences between groups based on the actual educational intervention rather than extra attention given to the intervention group and to insure that subjects were blind to group assignment. In order to address specific subject characteristics, e.g. age, that may impact response to the intervention, we employed a minimization technique (modified simple random assignment) to achieve balance for treatment assignment within these characteristics. Subjects completed questionnaires and a structured interview pre-intervention and 2 months post intervention. Physiologic data (hemoglobin A1c) was obtained from the subject's health care provider prior to subject randomization. Using our primary endpoint of problem solving behavior and assuming our groups have a mean baseline score of 27.4 ± 4.1 as reported by Cook, we predicted that the intervention group would improve their baseline score by one standard deviation. Based on these assumptions, 17 subjects per group were needed to detect a one standard deviation difference at alpha = 0.05 with 80% power. Assuming a 15% attrition rate, we recruited a minimum of 20 subjects for each group.

Statistical and/or Analytical Methods Used Data analyses were performed using SAS version 9.1 (SAS Institute, Cary, NC). Data analysis compared before and after intervention scores of the Diabetes Problem Solving Measure for Adolescents using paired t-tests and correlational analysis. Between-group comparisons were performed using student t tests. We used chi square tests to analyze frequency data. During sub group analyses, we examined trends rather than statistical significance because of the small sample size.

Results We assessed 45 adolescents (mean age 13.1 ± 1.8 years, 47% female, 100% non Hispanic white, diabetes duration 4.3 ± 3.1 years, HbA1c 7.8 ± 1.3%) prior to enrollment in a behavioral/educational intervention to improve diabetes problem solving ability. There were no differences at baseline between

the intervention (n=22) and attention control (n=23) groups in terms of problem solving ability (28.3 3.9 versus 27.1 4.0), self-care behavior (75.9 11.7 versus 76.9 10.6), delegation of diabetes responsibility between parent and child (parent 33.1 4.5 versus 34.0 3.4; child 31.3 4.4 versus 32.1 3.9), insulin pump use (73% versus 61%) and weekly hypoglycemia frequency (<70 mg/dl) per week (4.6 3.4 versus 4.0 4.0). Diabetes responsibility scores were lower for girls compared to boys from both the child (30.4 versus 33.0; p=0.03) and parent (31.9 versus 35.0, p<0.01) perspectives indicating that on average girls had greater responsibility for diabetes management compared to boys of similar ages. Thirty five adolescents (intervention n=19; attention control n=17) completed the study. Problem solving scores post intervention differed by gender with girls problem solving increasing slightly (mean change +1.3 4.3) whereas problem solving in boys declined (mean change -3.1 4.6) over a 5 month period (p<0.01). Boys in the intervention group demonstrated less decline compared to those in the attention control group (-2.3 4.2 versus -4 5.1; p=NS).

Conclusions Using educational interventions during adolescence appears to maintain stability in diabetes problem solving behavior among girls and may prevent its untoward decline in boys. Future research is needed to longitudinally examine diabetes problem solving behavior through the period of adolescence.

Source of Funding for this Research American Association of Diabetes Educators Sigma Theta Tau research award 2004

Has this study been previously published in any professional journal? No

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