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Team Clinic: An Innovative Group Care Model for Youth with Type 1 Diabetes—Engaging Patients and Meeting Educational Needs

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Abstract

The purpose of this pilot was to implement an innovative group care model, “Team Clinic”, for adolescents with type 1 diabetes and assess patient and provider perspectives. Ninety-one intervention patients and 87 controls were enrolled. Ninety-six percent of intervention adolescents endorsed increased support and perceived connecting with peers as important. The medical providers and staff also provided positive feedback stating Team Clinic allowed more creativity in education and higher quality of care. Team Clinic may be a promising model to engage adolescents and incorporate education and support into clinic visits in a format valued by patients and providers.

BACKGROUND

Management of type 1 diabetes (T1DM) throughout adolescence and emerging adulthood is a major medical challenge^{1–2}. Glycemic control has been described as poor and provider adherence to clinical care guidelines is considered inadequate^{3–5}. The American Diabetes Association recommends providing continual education and social support to patients to help promote coping and positive diabetes management^{6–7}. Unfortunately, providing on-going diabetes education and support to patients during routine clinic visits is difficult, especially in a manner engaging to adolescents.

There is a need for innovative clinical care models for adolescents that provide continuous education and support, give opportunities for peer interactions, and address psychosocial

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concerns. Group visits, also known as shared medical appointments (SMA), provide an efficient avenue for ongoing diabetes support and education and have demonstrated success (i.e. efficient, effective, financially sustainable models with increased patient satisfaction) in multiple populations with chronic medical conditions, including diabetes^{8–12}. Previous diabetes-specific group interventions have found short-term improvements in hemoglobin A1c (HbA1c), diabetes-related stress, and quality of life¹². Based on the success of SMA in diabetes and other conditions, the potential for group interventions to improve psychosocial and glycemic outcomes in adolescents with T1DM, and the desire to engage adolescents in their diabetes care, the ‘Team Clinic’ model was developed to incorporate peer group support and education into routine diabetes care. The purpose of this brief report is to review feasibility and acceptability of the Team Clinic model as assessed by satisfaction questionnaires and follow-up surveys from patients and providers.

METHODS

Participants

Youth 14–18 years of age with duration of T1DM >6 months were eligible for participation and self-selected to participate in Team Clinic or to serve as controls for the intervention.

Procedures

A multidisciplinary team of pediatric diabetes providers participated in Team Clinic design and development. Clinic managers and schedulers were consulted regarding logistics of scheduling group appointments in a busy clinic. Prior to recruitment, IRB approval was obtained. Recruitment occurred over a 6-month time period, and study duration was 10 months. Parents in both groups were consented and teens were assented per IRB protocol.

Overall Team Clinic Structure

For each patient, Team Clinic consisted of: 1) one-on-one meeting with a diabetes medical provider – nurse practitioner, physician assistant, or medical doctor, 2) group session including 4–6 teens facilitated by a diabetes educator, and 3) appointment with the medical provider including patient’s parent(s). Four to six patients were scheduled for each clinic. All patients participating in Team Clinic arrived at the same time and completed check-in with medical assistants. Once check-in was completed, all families gathered in the Team Clinic room for orientation. Patients also completed a form ensuring group confidentiality. Appointments lasted approximately 2 hours.

One-On-One Adolescent–Provider Visit

After orientation to Team Clinic, adolescents individually met with their provider. During this meeting, a physical exam was completed, a discussion about high-risk activities with the youth alone occurred, and adolescents were able to discuss concerns without their parents. Two providers staffed every Team Clinic and were scheduled to see 2–3 patients each.

Team Clinic Group

Once all individual physical exams were completed, adolescents gathered for their group visit. The facilitators began the group with an icebreaker activity to encourage interaction and increase comfort. Facilitators used active listening strategies to guide discussion around adolescent and diabetes-specific challenges. The facilitator also provided diabetes education when requested or necessary. Facilitators guided peer discussion around five different areas, based on the adolescents' interests, including 1) diabetes myths and facts; 2) diabetes in school and social situations; 3) high-risk issues such as drugs, alcohol, and driving; 4) diabetes management during exercise; and 5) balancing diabetes responsibilities with the desire for independence. Prior to the conclusion of the group portion, teens were asked to complete a strengths and goal worksheet based on constructs from positive psychology¹³. The discussion lasted 45–60 minutes.

Medical Provider, Adolescent, and Parent Appointment

The Team Clinic visit concluded with each patient and parent having an individual appointment with the provider. During this time, the provider reviewed lab results and the patient's device downloads with the family, discussed patient-identified goal(s), reviewed diabetes management and barriers to optimal glycemic control, and provided individualized recommendations. Additionally, the patient and parent had the opportunity to discuss any concerns with the provider. At the end of the visit, the clinician provided a written summary of the goals, a plan of care established by the parent, teen, and provider, and personalized recommendations.

Measures

Satisfaction Surveys – Patients—The patient satisfaction survey consisted of six statements comparing patient experiences in standard clinic versus Team Clinic and specifically focusing upon support, information learned, comfort with the format, recommendation to others, and desire to attend again. Participants rated their level of agreement or disagreement to each statement on a five-point Likert scale ranging from 1=strongly disagree to 5=strongly agree.

Satisfaction Surveys – Providers—The providers satisfaction survey consisted of eight statements comparing experiences in standard clinic versus Team Clinic and specifically focusing upon quality of care, value of the model, delivery of education, desire to participate again, and overall assessment of the clinic. Team members rated their level of agreement or disagreement to each statement on a five-point Likert scale ranging from 1=strongly disagree to 5=strongly agree.

Follow-up Survey of Team Clinic Participants—At the end of the 10-month study period, a follow-up survey was completed by a convenience sample of 51 Team Clinic patients. The survey consisted of open-ended questions about their experience in Team Clinic.

RESULTS

Between January and October 2013, 91 adolescents participated in Team Clinic; mean age 15.36 ± 1.19 years, 57.3% male, 59.8% non-Hispanic white, and 80.4% private insurance. The average age at diagnosis for participants was 8.64 ± 3.95 years. At baseline, the average HbA1C was $9.56 \pm 2.00\%$ and average blood glucose tests per day were 3.12 ± 1.84 . The demographics, baseline HbA1C, and baseline frequency of blood glucose monitoring of the 85 youth in the control group were not different from the Team Clinic participants. At baseline, the control cohort had a greater proportion of patients who completed the ADA recommended >4 visits during the 12 months' prior (52%), when compared to those who attended Team Clinic appointments (27%) ($p=0.001$).

Satisfaction with Team Clinic

Satisfaction surveys completed by teens attending Team Clinic compared their Team Clinic visit to standard clinic. Data indicated 96% of Team Clinic attendees felt more supported, 78% learned new information, and 78% felt more comfortable asking questions in Team Clinic compared to prior standard clinic appointments. Additionally, 90% would recommend Team Clinic to others and 86% desired to participate in another Team Clinic.

Multidisciplinary Team Satisfaction

Satisfaction surveys completed by participating providers, including diabetes nurse educators, dietitians, social workers, nurse practitioners, physician assistants, and a physician (total $n=15$), revealed positive professional experiences. The large majority of providers (80%) reported that the quality of care delivered during Team Clinic was higher than care provided during standard clinic visits. The additional 20% reported an equivalent quality, with no providers reporting a decrease in quality of care with Team Clinic. Furthermore, providers universally (100%) enjoyed the group format, felt it allowed for more creativity in education, and provided a beneficial setting for assisting adolescent patients with diabetes management during routine appointments.

Patient Feedback from Team Clinic Participants

Qualitative analysis of responses to open-ended questions resulted in eight response categories: 1) patients' desire to connect with and learn from peers, 2) receiving a recommendation from family or providers to try Team Clinic, 3) an interest in trying a new type of clinic, 4) Team Clinic is a positive environment where they can talk openly, 5) benefits from connecting with peers such as strategies for diabetes management and validation of their feelings, 6) challenges around scheduling and concerns about lack of follow up with previous diabetes provider, 7) discomfort in a group setting, and 8) importance of patients being in groups matched on age and experience level.

DISCUSSION AND CONCLUSIONS

While a significant amount of data exists emphasizing the need for additional support and education in adolescents with T1DM¹⁴, there are relatively few models for how to do this efficiently and effectively. Team Clinic may be an option to address the educational,

developmental, and interpersonal needs of this challenging population. The model was instituted in a busy clinic with high patient and provider satisfaction. The multi-disciplinary team members were able to take full advantage of their clinical time by providing diabetes education to 4–6 patients simultaneously in a social format appreciated by teens. Patients completed group visits in approximately 2 hours, which is comparable to their time spent in traditional appointments, and providers saw 2–3 patients during each clinic, which is also comparable to the number of patients typically seen in standard clinic. Additionally, patients who self-selected to participate were completing fewer standard clinic visits at baseline indicating Team Clinic may be a model to target the already disengaged adolescent population.

Limitations of the study include those of a pilot study: teens were not randomly assigned to groups and teens were permitted to attend Team Clinic as they desired. This resulted in difficulty assessing Team Clinic's impact on outcomes and adherence. For more definitive data on Team Clinic's impact on metabolic control and psychological outcomes, a randomized controlled trial is needed.

Team Clinic was perceived positively by adolescents and could be a promising avenue to deliver on-going diabetes support and education for adolescents during routine visits. The high acceptability of Team Clinic by adolescents suggests group appointments may be a format for efficiently incorporating evidence-based strategies into clinical care (e.g. coping skills training, problem solving) in an efficient format for providers, staff, and patients. Additionally, teens' satisfaction and willingness to attend an interactive model, like Team Clinic, could facilitate more positive exchanges with their diabetes team during this vulnerable time.

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HIGHLIGHTS

- Management of diabetes during adolescence is a major medical challenge
- Group visits provide an efficient avenue for on-going diabetes support and education
- Team Clinic, a group visit model, provides an opportunity for adolescent peer support during routine clinic appointments.
- Team Clinic resulted in high patient and staff satisfaction