Integration of Patient-Reported Depression Screening within a Pediatric Diabetes Clinic: Initial Implementation Results

RACHEL B. CARROLL, MS; CINDY LYBARGER, MSN, APRN, CDE; WILLIAM E. RUSSELL, MD; DOUGLAS CONWAY, MA; ERICA A. BOWTON, PHD; SHELagh A. MULVANEY, PHD

**VANDERBILT UNIVERSITY SCHOOL OF NURSING**

AIMS

- Incorporating patient-reported data into diabetes patient care is important and necessary for patient-centered care and development of precision medicine.
- Depression screening is recommended by the American Diabetes Association in routine adolescent diabetes care.
- Behavioral phenotyping has become increasingly important for identifying personalized treatment options and plans. Behavioral phenotyping includes characterizing individual patterns of symptoms and important subgroups and identifying modifiable and non-modifiable social and behavioral correlates.
- The need for patient-reported data and personalized treatment provided the impetus to build the initial infrastructure and design clinic workflow for the Vanderbilt Eskind Pediatric Diabetes Clinic Patient-Reported Data System.
- Initial results of the implementation process and rates of depressive symptoms are reported.

METHODS

The Vanderbilt Eskind Pediatric Diabetes Clinic

1. Piloted iterative implementation cycles that took place between July 2015 and February 2016 and involved protocol development, community resource development, clinical informatics design and testing, and clinic workflow pilot testing; the system reported here was fully implemented in April 2016.
2. Uses iPads for self-reported data with patients with Type 1 and Type 2 diabetes and maturity-onset diabetes of the young (MODY) aged 13 years and older.
3. Uses REDCap for patient appointment schedules and identification, administration interface, survey administration, reporting, and data storage.

- The PHQ-9 depression screening is administered to patients twice per week. The customized system scores the PHQ-9 and labels the score as low, moderate, or high.
- Four nurse practitioners (NPs) review scores with families, take appropriate actions based on score level, and document the score in the Vanderbilt electronic health record (EHR).
- Project staff in the School of Nursing monitor high depression scores indicating patient risk, create screening reports, document ongoing clinic flow issues and opportunities, problem solve missing data issues, and provide feedback to the Clinic to inform next steps.

RESULTS

- **Figure 1** shows current clinic workflow and associated administrative and data processes.
- **Table 1** shows current prevalence rates of low, moderate, and high depressive symptoms using the PHQ-9.
- Of the 29 (6%) high PHQ-9 scores, 1 was transported to the emergency department.
- 28 spoke with social worker, received counseling resources, and/or discuss a plan for continuing to see their existing mental health professional or making an appointment.
- 2 had missing data in the EHR.
- All patients were appropriately provided support.
- Subjectively, families have reported that they are happy to complete the screening and parents have expressed relief in having their children screened for depression.

CONCLUSIONS

- This quality improvement project indicated that screening for depression in a pediatric specialty clinic is feasible and provides actionable data.
- Integration of the system with NPs has been successful. An engaged social worker greatly influenced ability of the Clinic to carry out appropriate next steps for moderate and high scoring adolescents.
- Rates of possible depression were lower than in studies using alternate self-report measures with this population [2, 3]. The PHQ-9 includes assessment of suicidality and/or harm to self which may influence prevalence estimates.
- Possible next steps include the following:
  1. Expansion to satellite clinics
  2. Inclusion of relevant patient-reported data such as health literacy and adherence
  3. Translation of measures into other languages
  4. Integration of depression screening and automated data capture within the new Vanderbilt EHR in 2017

Table 1. Current Prevalence Rates of Depressive Symptoms Using the PHQ-9.

<table>
<thead>
<tr>
<th>Depression Score Level</th>
<th>Rates of Each Score Level First Year</th>
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<tbody>
<tr>
<td>Low</td>
<td>88%</td>
</tr>
<tr>
<td>Moderate</td>
<td>5%</td>
</tr>
<tr>
<td>High</td>
<td>7%</td>
</tr>
<tr>
<td>Total Screens</td>
<td>N = 1110</td>
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</tbody>
</table>

References


Funded by Vanderbilt University Medical Center Precision Medicine Initiative