Barriers and Successes Related to Type 2 Diabetic Screening Referrals in Texas School Children

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Background: Approximately one-third of American children are overweight and at increased risk for developing type 2 diabetes (Centers for Disease Control and Prevention [CDC], 2017). Unfortunately, where type 2 diabetes was rarely diagnosed in children before 1990, the rate of type 2 diagnoses in children now parallels the rising rate of childhood obesity (Bernal & Aguilar, 2017; Maahs, et al., 2014; Xue, Goa, & Gao, 2016). With the rising number of children from Hispanic and African American heritage growing in the state of Texas, it is projected that 17,700 Texas children under the age of 20 will be diagnosed with type 2 diabetes by the year 2025 (Texas Pediatric Diabetes Research Advisory Committee, 2004). Texas school nurses use the *Texas Risk Assessment for Type 2 Diabetes in Children* (The University of Texas Rio Grande Valley [UTRVG], 2017) annual screening to assess school-aged children between 1st and 9th grade for the presence of Acanthosis Nigricans (AN), a skin condition linked to hyperinsulinemia and insulin resistance in children (Scott, 2013). If the AN marker is present, the school nurse collects the child's blood pressure and body mass index before contacting the parents with a referral letter. The letter provides the child's assessment findings, information on the child's increased risk of developing diabetes, and emphasizes the need to seek further evaluation of the child from a medical professional. Unfortunately, referral letters with screening results that are sent to parents have a very low response rate. In fact, of the 60,455 children identified to be at risk during the 2015-2016 assessment period, 75% (45,673) of the referral letters sent to parents were not returned (UTRVG, 2017). It is unclear what factors may be influencing the return of these screening referral letters and what type of additional follow-up or tracking of the identified "at-risk" children is occurring.
Purpose: This study addresses a gap in knowledge surrounding family, social, and professional attitudes within the sociocultural context of school-aged children found to be at risk for type 2 diabetes and factors that influence the barriers and successes of screening referrals that emphasize additional medical follow-up .The knowledge obtained in this study has been used to develop a state wide survey of Texas school nurses aimed at providing an understanding of barriers and successes that influence the efficacy of the TRAT2DC referral process.
Method: This is a descriptive qualitative study using a focus group and semi-structured interviews to collect data from Texas school nurses related to their experiences surrounding the distribution and follow-up of the TRAT2DC referral letters. An initial focus group with Texas school nurse leaders and representatives was followed by semi structured interviews with 12 school nurses from a variety of school districts and variety of grade levels served. The semi structured telephone interviews were recorded, transcribed, coded, and analyzed for common themes and patterns of concern (Saldana, 2013). In addition, general demographic information was collected relating to the participants experience in nursing, school nursing, grade level of students cared for, geographic location, and general socioeconomic factors within the student population.

Results: Six general themes evolved from analysis of the data collected. These include (1) informing parents prior to the screening, (2) methods used when notifying the parents of the assessment findings, (3) type and amount of information provided to the parents about health risks associated with type 2 diabetes, (4) reaction of parents to the assessment findings and referral letter, (5) the nature of collaboration between the school nurse and other health care providers concerning the assessment findings, and (6) school nurse recommendations related to the referral process and school health programs. Notably, the relationship the school nurse developed with the child's family members, ethnicity of community, and relationship with community health care resources/providers were prominent factors that influenced responses to assessment findings of the child and reaction to the referral.

Conclusion: Although the state of Texas has developed a screening program aimed at identifying children at risk for type 2 diabetes, the poor response rate to referral letters distributed to at risk children indicates a need for further investigation of factors that impede the success of the referral, and screening program. School nurses are on the front line of this initiative and have the ability to provide data on factors that enhance or impede the success of this program. This initial qualitative study provided data and knowledge used to design a more extensive statewide study aimed at providing an understanding of barriers and successes that influence the efficacy of the referral process for children found to be at risk for type 2 diabetes.

Title:
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Abstract Summary:

Approximately one-third of American children are overweight and at increased risk for developing type 2 diabetes. This qualitative study of Texas school nurses identifies predominant themes related to barriers and successes of a statewide program aimed at referring "at-risk" children for additional follow-up diabetic screening and care.

Content Outline:
I. Introduction
A. Diabetes Epidemic in School Aged Children:
- Statistical review of epidemiological changes in obesity and type 2 diabetes in school aged children
- Populations at greatest risk and social determinants of health that influence type 2 diabetes in school aged children
B. Initiative for screening and diabetes prevention program in Texas:
- Texas Risk Assessment for Type 2 Diabetes in Children (TRAT2DC)
- Texas school nurses
II. Study
A. Identifying the Problem:
- Poor referral response rates and data collection problems with TRAT2DC
- Overlap of data collected
- How to measure success of screening/referral program?
B. Study Design:
- Need for qualitative data to identify predominant points of concern with referral process
- The frontline....Engaging Texas school nurse leaders
C. Data Collection:
- Focused discussion with Texas school nurse leaders
- Sampling of school nurses
- The semi structured interviews
- Transcribing the interview transcripts
D. Coding and analysis:
- Independent researcher coding
- Comparative analysis of coding
E. Results of analysis:
- Informing parents prior to the screening,
- Methods used when notifying the parents of the assessment findings,

- Type and amount of information provided to the parents about health risks associated with type 2 diabetes,
- Reaction of parents to the assessment findings and referral letter,
- The nature of collaboration between the school nurse and other health care providers concerning the assessment findings, and
- School nurse recommendations related to the referral process and school health programs

III. Conclusion

A. Implications for nursing practice and population health:

- Collaboration with University of Texas Rio Grande Valley
- Targeted prevention programs and collaboration with Texas school nurses
- Increase state funding for expansion of program

B. Nursing science application:

- Texas school nurse survey, n=6300
- Expanded studies on collaborative relationship with community health providers
- Etc...

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