Continuous Glucose Monitoring in Low-Income Patients

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ABSTRACT

This research will examine diabetic patients at the Broad Street Clinic perception, barriers, and receptiveness towards continuous glucose monitoring. Following this quality improvement research, it can then be determined if further research is needed to investigate if this treatment approach will be feasible and effective in a free clinic setting.

INTRODUCTION

•Diabetes mellitus is the eighth leading cause of death in Carteret County.

•Diabetes prevalence is substantially higher in rural populations compared to urban.

•Living in a poor neighborhood increases the odds of having diabetes for poor blacks and whites.

•Real-Time Continuous Glucose Monitoring (CGM) should be used as a prevention tool and can be involved with lifestyle changes, weight reduction, and potential medicinal decrease.

•Using CGM requires adherence to the use of the device for it to be effective and has only been achieved in a small minority of type 1 diabetic patients.

MATERIALS & METHODS

•A cross-sectional study designed was used by implementing a telephone and in-person survey.

•Participants were gathered using a medical report with diabetic patients and by scheduled in-person doctor's visits.

•Adults aged 18-65, any race or gender, able to read and comprehend English language (or with translator), and type 1 or 2 patients were eligible.

• A total of 28 questionnaires were administered.

•The questionnaire measured demographics, satisfaction of current monitor, perception of CGM, barriers to CGM, and receptiveness to CGM.

RESULTS

•Of the 28 individuals who were given the survey, 26 fully completed it.

•Women represented 64.3% of sample, while men represented 35.7%

•Majority of individuals (53.6%) were in 55-64 age range group.

•Almost all participants (92.9%) used a blood glucose meter to check their glucose on everyday basis.

•Of the 26 people who use a blood glucose meter:

- 78.6% agree their monitor helps them feel more satisfied with how things are going with their diabetes
- 75.0% agree their monitor helps them understand how food and activity affect them
- 67.9% disagree their monitor is a hassle to use and causes too many skin irritations
- 82.1% disagree their monitor takes too much time to use
- 71.4% disagree their monitor is too painful to use

•Of all 28 people:

- 82.1% had heard of CGM before
- 96.4% of people have never used one before

•Of the 26 people who completed perception questions:

- 46.4% would feel very comfortable, 35.7% would feel somewhat comfortable, and 10.7% would feel not at all comfortable controlling their sugar levels
- 60.7% feel that using a CGM would help lower their A1c more than what they are currently using
- 64.3% think a CGM has the chance for them to change their current diet and exercise

•Of the 26 people who completed barrier questions:

- 60.7% reported the monitor being uncomfortable to wear and painful application/wear would prevent them from using
- 64.3% reporting cost as a barrier to using
- 57.1% said the device being attached to their body and skin irritation from the adhesive would prevent them from using

•Of the 27 people who were asked if in the future they would agree to wear a CGM in the future if provided at no cost:

- 67.9% said yes
- 17.9% said no
- 10.7% said maybe

COMPETENCIES

1. Assess population needs, assets and capacities that affect communities' health.
2. Select quantitative and qualitative data collection methods appropriate for a given public health context.
3. Interpret results of data analysis for public health research, policy, or practice Public Health & Health Care Systems.
4. Critically evaluate epidemiologic literature by applying methods of epidemiology to interpret research results and findings.
5. Identify and implement appropriate study design, recruitment, data collection and analysis methods to address an identified public health problem.
6. Communicate audience-appropriate public health content, both in writing and through oral presentation.

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