Assessing Patient-Provider Collaboration in Subjects with Type 2 Diabetes in Jamaica and Effects on Glycemic Control

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BACKGROUND AND PURPOSE

- Type 2 diabetes mellitus is a growing health problem worldwide.
- Primary pathophysiology of this disease stems from impaired glucose uptake via insulin resistance that results in symptomology ranging from polydipsia and polyphagia to potentially life threatening hyperglycemic episodes.
- Major effects on health and healthcare costs are from microvascular complications.
- Timely screening and outpatient referrals, as well as good glycemic control, have been shown to slow the progression of complications.
- Recent trend in the United States for management of chronic conditions focuses on patient-centeredness which advocates for increased collaboration between caregivers such as nurses and physicians with patients to produce a management plan that is feasible for the patient.
- In Jamaica, the incidence of type 2 diabetes has been steadily increasing since 1960, with current estimates of a diabetic population exceeding 300,000. Some research suggests poor glycemic control in sample populations and high rates of complications such as retinopathy.
- As a counter measure, organizations such as the Diabetes Association of Jamaica have implemented educational workshops to make the general population more aware of this disease and its complications.
- Beyond the education of the public and management by physicians, it would be interesting to assess the perception of patient-centeredness in Jamaicans suffering from type 2 diabetes and determine if there any implications for management of their condition.

PURPOSE

To compare Patient Assessment of Care of Chronic Conditions (PACIC) scores to hemoglobin A1C values in subjects with type 2 diabetes and to determine the correlation between patient-physician collaboration and glycemic control.

STUDY DESIGN AND RECRUITMENT

- A cross-sectional observational study examining patient-to-provider collaboration in type 2 diabetes in a sample population in Jamaica.
- Subjects were excluded based on the following criteria: 1. Males and females without a documented history of type 2 diabetes (as described in inclusion criteria), 2. Patients without hemoglobin A1C testing within 3 months of participation, 3. Pregnant women.
- The study population was predominantly female (78.9%; 15 women/4 men), with a majority (42.1%; 8 participants) receiving a combination of insulin and an oral hypoglycemic agent as a treatment modality. (See Figure 7)

STUDY POPULATION & DATA

- Study population was predominantly female (78.9%; 15 women/4 men), had an age range of 33-78 years (mean 55), years diagnosed with diabetes 0.03 – 32 years (mean 14). Hemoglobin A1C values from 5.40% – 15.5% (mean 10.8%), and with a majority (42.1%; 8 participants) receiving a combination of insulin and an oral hypoglycemic agent as a treatment modality. (See Figure 7)

METHODS

STUDY POPULATION & DATA

- The Patient Assessment of Care of Chronic Conditions (PACIC) questionnaire was our measure of patient-to-physician collaboration. The PACIC is a validated instrument that was used to assess the level of collaboration patients with chronic disease feel they have with their healthcare providers.
- The PACIC measures five subjective categories: 1) Patient activation; 2) Delivery system design and decision support; 3) Goal setting; 4) Problem solving/contextual counseling; and 5) Follow-up/coordination. The overall PACIC score measures patient-to-physician collaboration with a range from a low of 1.0 to a high of 5.0.
- Hemoglobin A1C (HbA1c%), which measures the amount of glycosylated hemoglobin (as a percentage) for the past 3 months, was our measure of glycemic control.

STUDY PROCEDURES

- Subjects were consented, assigned a study number, and self-administered the PACIC in a private exam room.
- The investigator (PD) collected additional study data as described above.

RESULTS

- Data analysis revealed a range of 1.85 – 4.80 (mean 3.15).
- Main variables of PACIC scores and HbA1c were subject to analysis via the Pearson correlation, but no statistically significant correlation was found (r=.184).
- Additionally, HbA1c did not correlate significantly with the other variables of patient age (-.408), and years diagnosed with diabetes (r=.184).
- These data were also re-computed using non-parametric correlation coefficients to take small sample sizes into account. However, no statistically significant correlations were found.
- Likely the study is underpowered to find statistically significant correlation between PACIC scores and other key study variables. A larger sample would be needed to explore this further.

CONCLUSIONS

- Implementation, data collection and administration of the questionnaire was straightforward and did not interfere or prolong patient appointments. Thus, testing patient-to-provider collaboration could potentially be a component of visits for patients with chronic illness. However, further studies are needed to evaluate efficiency and cost-effectiveness.
- Recruitment was suboptimal with the limiting factor being that most subjects could not afford Hemoglobin a1c testing as part of their diabetic management.
- No statistically significant associations between our main variables of patient and provider collaboration (PACIC score) and glycemic control (HbA1c) were found. Analysis of potential confounders also failed to illicit any correlations.
- The major limitation in our study stems from our small sample size. An important next step would be to repeat this study with a larger sample and currently, the process of gathering additional subjects is underway.
- In summary, it is unclear what impact patient-physician collaboration will have on glycemic control in type 2 diabetes. However, if results are favorable, as suggested by past research, and demonstrate a clinical benefit, the PACIC could potentially be an additional tool for physicians treating type 2 diabetes in this controlling disease and limiting complications.

ACKNOWLEDGEMENTS

University of Massachusetts Medical School Office of Undergraduate Medical Education

My mentors on this Senior Scholars project: Dr. Michael Godkin and Judith Savageau from the University of Massachusetts Medical School’s Department of Family Medicine and Community Health

Dr. Rosemarie Wright-Pascoe and Professor Michael Lee of the University of the West Indies Faculty of Medicine

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