[Working title] **Assessing the effectiveness of a clinical pharmacist intervention in improving diabetes outcome in high-risk individuals with diabetes**

Jeannine S. Skinner, PhD,1 Brett Poe, BS,1 Rebecca Hopper, PharmD, BCACP,2 Alaina Boyer, PhD,1 Consuelo Wilkins, MD, MSCI1

1 Meharry-Vanderbilt Alliance, Vanderbilt University Medical Center, Nashville, TN,

2 Saint Thomas Family Center, West, Nashville, TN

**\*Corresponding Author**

Consuelo H. Wilkins, MD, MSCI

Meharry-Vanderbilt Alliance

Vanderbilt University Medical Center

1005 Dr. D.B. Todd Jr. Blvd, Biomedical Building

Email: [consuelo.h.wilkins@meharry-vanderbilt.org](mailto:consuelo.h.wilkins@meharry-vanderbilt.org)

Phone: 615-963-2820; Fax: 615-320-9457

Funding

**Abstract**

Purpose:

Methods:

Results:

Conclusion:

**Introduction**

* T2DM is a major public health problem
* T2DM health outcomes in high-risk populations
  + Barriers in this population (medication adherence, self-care rituals)
* Effectiveness of educational interventions
  + Pharmacist interventions
* Specific Aims
  + 1-Compare adherence to medication between high-risk diabetic patients that received or did not receive clinical pharmacist MTM
  + 2- Compare patient clinical health outcomes (HbA1C, blood pressure, cholesterol, renal health )

**Methods**

Design

Sample- (source of sample, subject eligibility, inclusion/exclusion criteria)

Measures-(IV= MTM; DV= medication adherence, glycemic control (HbA1C), BP, lipids, renal function)

Analytic Plan-Mann-Whitney tests for nonparametric data 2-group comparisons were employed due to violations of normality in continuous dependent variables. For the first analysis, group differences in dependent variables were compared between the MTM group and non-MTM. Pearson chi-square test was used to determine group differences in categorical dependent variables.

**Results**

Descriptive

Major Outcomes

* Medication adherence (p<.0001)
  + MTM group - 64.6%
  + Standard care - 9.8**%**
* HbA1c levels (p<.0001)
  + MTM – 7.52
  + Standard care – 10.59
* Cholesterol management
  + Reduced LDL-Chol in MTM group (89.3 v 118.5 [p<.05])
  + Reduced triglycerides in MTM group (172.9 v. 252.5 [p<.05])

**Discussion/Conclusion**

* *Summary of key findings*
  + MTM group had a significantly higher rate of medication adherence than standard care group.
  + MTM group had a better health profile as demonstrated by clinical outcomes (lower HbA1C, LDL, triglycerides) than standard care group
* *Bridge findings to relevant work*
  + Briefly discuss prior work that reports similar and dissimilar findings
  + Significance of improved clinical measures (HbA1C and cholesterol levels) in T2DM populations
* *Emphasize ways current work enhances prior work*
  + Results set the stage for larger prospective studies and RCT educational interventions
  + Informs community health by helping to advance the scientific community’s understanding of diabetes self-management in high-risk populations
  + Provides information on multiple clinical health outcomes (HbA1C, BP, cholesterol, renal health) important in T2DM
* *Highlight limitations*
  + Small sample size
  + Retrospective case-control design- ( design is limited to associations, cannot demonstrate causation)
  + Lack of standardized MTM protocol and documentation

**Implications and/or Recommendations for Practice**

* Next step of study is to further examine improved clinical outcomes and develop a standardized data recording tool for MTM that can be used in clinical practice
* MTM data capturing tool can be used to manage a range of chronic conditions

**Acknowledgements**

**References**

**Tables**

**Table 1. Sample/ Demographic Characteristics According to Group Allocation**

|  |  |  |
| --- | --- | --- |
|  | MTM | Non-MTM |
|  | n=50 | n=50 |
| Age, years | 57 ± 9.8 | 50 ± 13.7 |
| Sex, male | 28% | 56% |
| Race/ Ethnicity (n[%]) |  |  |
| Caucasian | 29 [58%] | 20 [40%] |
| Black | 12 [24%] | 19 [38%] |
| Hispanic/Latino | 7 [14%] | 5 [10%] |
| Other | 9 [18%] | 9 [18%] |
| BMI, kg/m2 | 36.3 ± 9.2 | 32.8 ± 8.1 |

Note: Mean±SD; BMI=Body mass index

**Table 2: Medication Adherence and Clinical Health Outcomes by Group Allocation**

|  |  |  |
| --- | --- | --- |
|  | MTM | Non-MTM |
|  | n=50 | n=50 |
| Medication Adherence (%) | 64.6% | 9.8% |
| HbA1C (%) | 7.5 ± .42 | 10.6 ± 2.1 |
| Systolic Blood Pressure | 138.7 ± 22.1 | 139.3 ± 20.73 |
| Diastolic Blood Pressure | 73.3 ± 12.4 | 73.3 ± 13.7 |
| HDL | 47.7 ± 9.4 | 45.1 ± 13.1 |
| LDL | 89.3 ± 31.2 | 118.5 ± 82.6 |
| Triglycerides | 172.9 ± 75.1 | 252.5± 168.2 |
| Creatinine | 1.02 ± 0.7 | 1.05 ± 1.1 |

Note: Mean±SD; HbA1C= glycated hemoglobin; HDL=high density lipoprotein; LDL= low density lipoprotein

**Figures**

**Legends**