

Background

- Type 2 diabetes mellitus (T2DM) is a major risk factor for cardiovascular disease (CVD), which is the leading cause of all adult deaths in the U.S. CVD is implicated in 11% of non-AIDS related deaths among people living with HIV (PLWH). Several observational studies suggest a higher risk of developing diabetes among PLWH, but evidence is mixed. Using population-based representative data, of PLWH, the present study examines the prevalence and risk factors associated with DM among PLWH receiving medical care in Texas.

Methods

- The Medical Monitoring Project (MMP) is an ongoing surveillance system that assesses behaviors and clinical characteristics of HIV-infected persons who are receiving outpatient medical care.
- The MMP used a three stage cluster sampling method to randomly select 23 city/state project areas, healthcare facilities within those areas, and patients within facilities. Behavioral and clinical data were collected using interviews and medical record abstractions.
- From the Texas and Houston MMP facilities, 957 of 1600 sampled persons participated in the cross-sectional survey during the 2013-2014 cycle.
- T2DM was identified by formal diagnosis in the medical chart, prescription of insulin or oral hypoglycemic medications, or most recent fasting blood glucose of >126 mg/dL.
- Differences in sociodemographic characteristics among participants with and without DM were assessed using Rao-Scott chi-square tests with significance level threshold of $p < 0.05$. All percentages are weighted.

Results

- Participants were mostly male (75%), ≥ 40 years (70%), overweight (BMI 25-30)/obese (BMI 30+) (65%), virally suppressed (70%), and had a mean CD4 count of ≥ 500 (54%). T2DM prevalence was 13% with no significant variations associated with race/ethnicity, gender and years of ART use.

Results

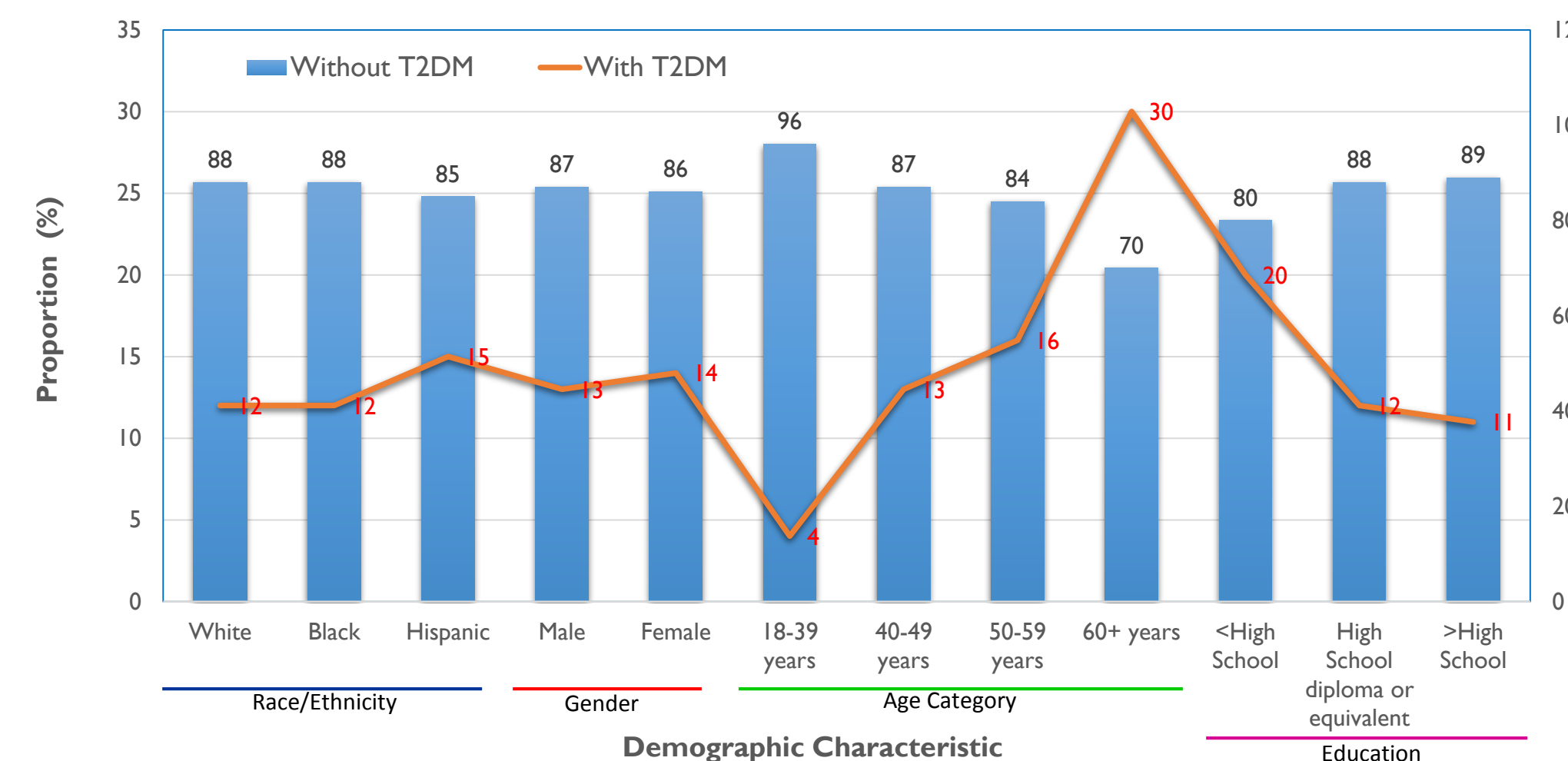


Figure 1: Associations between demographic characteristics of sampled persons with T2DM and those without T2DM

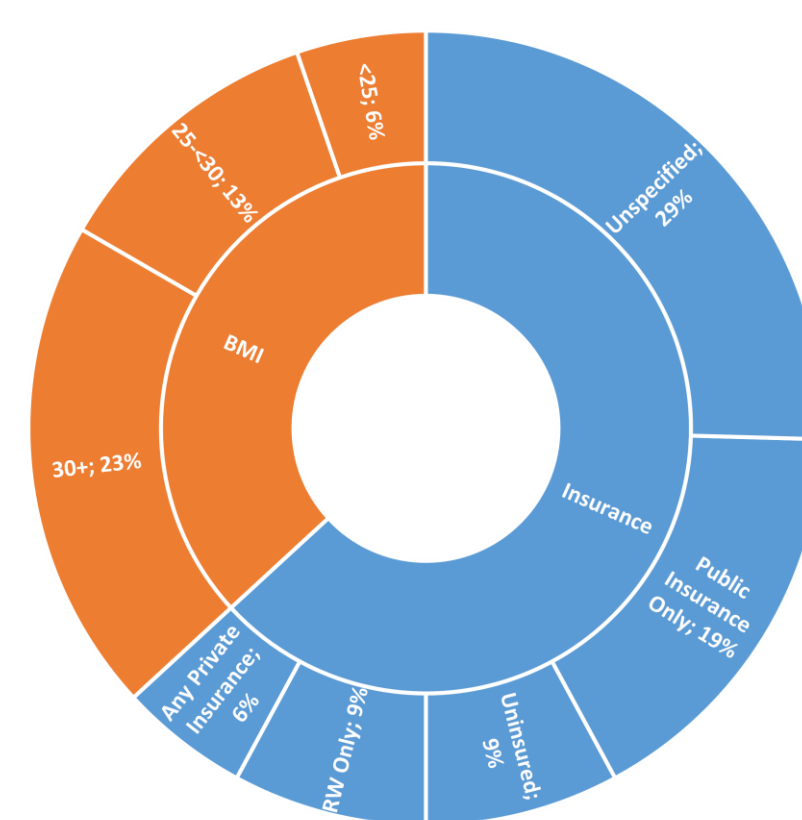


Figure 2: Sunburst chart showing the insurance types and BMI for sampled persons with T2DM

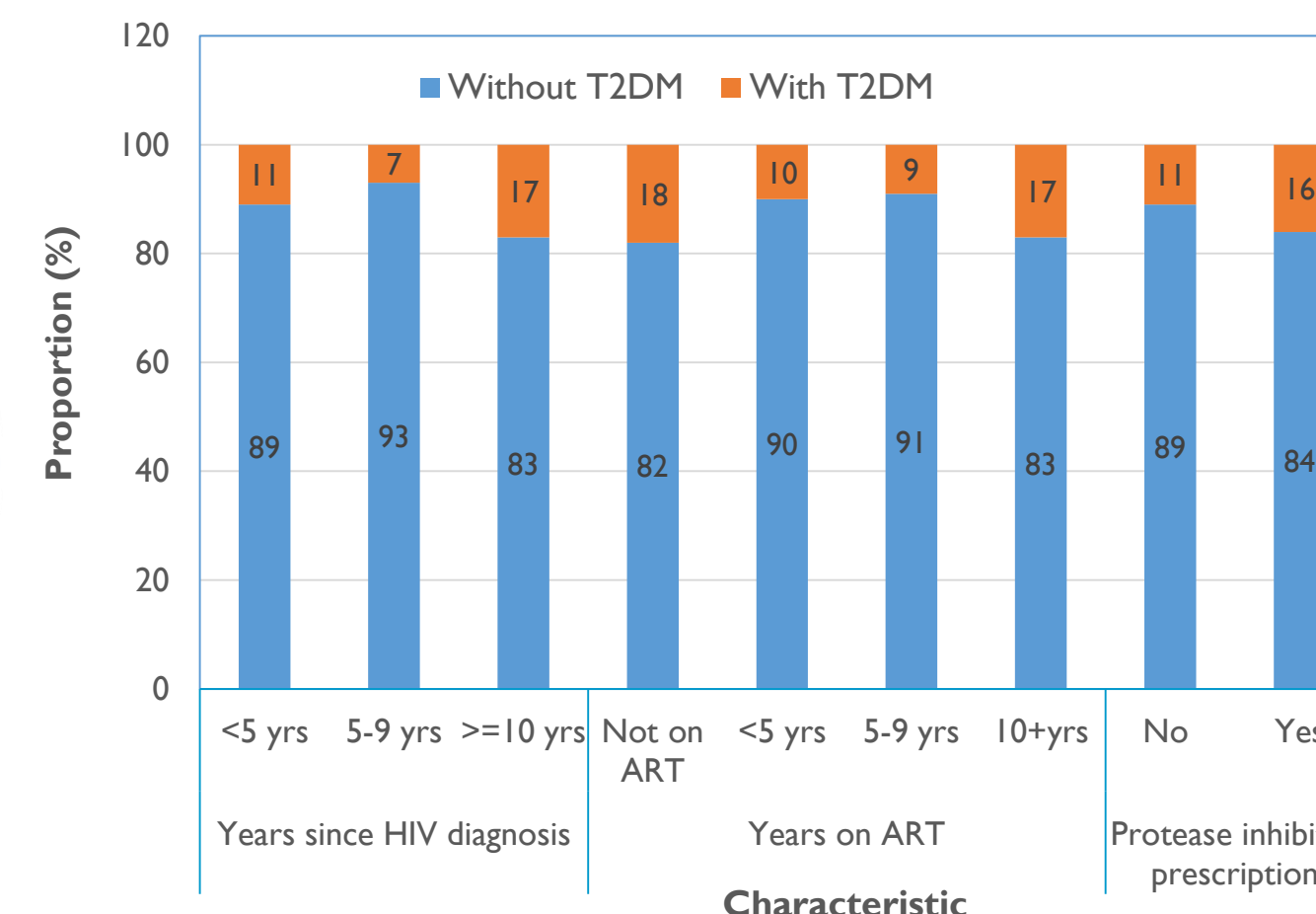


Figure 3: Associations between years since HIV diagnosis, years on ART and protease inhibitor prescription for sampled persons with T2DM and those without T2DM



Results (Cont'd)

- A higher proportion of those aged 60+ years (30%) were found to have T2DM compared to younger participants (i.e. 18-39 years (4%), 40-49 (13%), and 50-59 (16%); $p < 0.0001$). Of participants with a BMI of 30+ a higher proportion were also found to have T2DM (23%), than those with BMI's of <25 to <30, ($p < 0.0001$).
- Of participants with less than a high school education, a higher proportion were found to have T2DM (20%) than those with a higher levels of education, ($p = 0.0363$). A higher proportion of those with unspecified (29%) and public (19%) health insurance were found to have T2DM, compared to all other insurance types, ($p = 0.0001$).
- A higher proportion of participants with an HIV diagnosis of <5 years (11%) and ≥ 10 years (17%) were found to have T2DM than those diagnosed for 5-9 years, (7%) ($p = 0.0125$). Participants with a Protease Inhibitor (PI) prescription (16%) were found to have T2DM compared to those without a PI prescription (11%), ($p = 0.0495$).

Conclusions

- T2DM prevalence among PLWH was higher (13%) in our study than among the general population of adults in the United States (9.1%). T2DM prevalence was significantly associated with: age, BMI, education, health insurance type, years since HIV diagnosis, and PI prescription. Since T2DM is a risk factor for CVD, and PLWH are living longer, increased education and lifestyle modification interventions are warranted to prevent development of T2DM among PLWH. Longitudinal data are warranted to assess long-term T2DM risk and how it may impact mortality among PLWH. Since HIV care providers may not be the primary care physician of PLWH, our study shows a need of HIV care providers to obtain the full medical picture of their patients to better monitor other chronic diseases such as T2DM and their associated risk factors. This requires care coordination between patient's primary care provider and their HIV providers.

Acknowledgement

- Texas and Houston MMP Participants and Collaborating Healthcare Providers, Staff, and Management
- Clinical Outcomes Team, Behavioral and Clinical Surveillance Branch, Behavioral and Clinical Surveillance Branch, Division of HIV/AIDS Prevention, Centers for Disease Control and Prevention.