

Quality of Life in Older and Younger People with HIV and Diabetes

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Background

- People with HIV (PWH) are living longer with more age-related comorbidities such as diabetes mellitus (DM). DM and increasing age are both associated with lower quality of life (QOL) and increased symptom burden (i.e. nausea, cough, pain) among PWH.
- As DM complications increase with age, age may be an effect modifier of the relationship between DM and patient-reported QOL and symptom burden outcomes.¹

Objective



Determine whether age is an effect modifier of the relationship between DM (Type 1 or Type 2) and QOL/symptom burden among PWH.

Methods

DC Cohort

- Longitudinal HIV Study of 11,000 people in HIV care in Washington D.C. from 2011 – Present Day
- Data extracted from electronic health records at 14 sites
- DM defined through ICD9/10 codes

PROs

- Cross-Sectional Survey of Patient Reported Outcomes (PROs) among DC Cohort participants started in May 2021
- Surveys completed from May 2021 to May 2022 were included
- Instruments: EuroQOL 5D-3L and Memorial Symptom Assessment Scale (Short Form)

Data Analysis

- Compared two strata: ≥ 65 and < 65 years old
- QOL assessed in 5 QOL categories²
- Symptom burden measured on 3 continuous scales³
- Within each age strata, compare the crude association between (1) QOL and DM, (2) Symptom Burden and DM using logistic regression and linear regression

Results

Table 1. Overview of Demographics

Demographic	DM (N = 34)	No DM (N = 184)	Total (N = 218)
Age ≥ 65 (n (%))	6 (17.7)	48 (26.1)	54 (24.8)
Gender (n (%))			
Male	24 (70.6)	141 (76.6)	165 (75.6)
Female	10 (29.4)	40 (21.7)	50 (22.9)
Transgender	0 (0.0)	3 (1.6)	3 (1.4)
Race (n (%))			
Non-Hispanic Black	31 (91.2)	133 (72.3)	164 (75.2)
Non-Hispanic White	1 (2.9)	34 (18.5)	35 (16.1)
Hispanic	1 (2.9)	9 (4.9)	10 (4.6)
Other	1 (2.9)	4 (2.2)	5 (2.3)
Unknown	0 (0.0)	4 (2.2)	4 (1.8)

Quality of Life (QOL)

Table 2. Overview of QOL among people with HIV with and without DM

	DM (N = 34)	No DM (N = 184)	Total (N = 218)
Mobility Problems (n (%))	8 (23.5)	40 (21.9)*	48 (22.1)
Self-Care Problems (n (%))	3 (8.8)	12 (6.6)*	15 (6.9)
Usual Activity Problems (n (%))	8 (23.5)	42 (22.8)	50 (22.9)
Pain/Discomfort (n (%))	15 (44.1)	83 (45.4)*	98 (45.2)
Anxiety/Depression (n (%))	12 (47.1)	76 (41.3)	92 (42.2)
Self-Reported Health (Median (IQR))	7 (5, 8)*	8 (5, 9)**	7 (5, 8.5)

Table 3. Unadjusted association between DM and QOL among people with HIV by age strata

	Overall	≥ 65 years	< 65 years
Mobility Problems (OR (95% CI))	1.1 (0.5, 2.6)	1.9 (0.3, 11.9)	1.0 (0.4, 2.6)
Self-Care Problems (OR (95% CI))	1.4 (0.4, 5.2)	+	0.8 (0.2, 3.7)
Usual Activity Problems (OR (95% CI))	1.0 (0.4, 2.5)	2.2 (0.3, 13.7)	0.9 (0.3, 2.3)
Pain/Discomfort (OR (95% CI))	1.0 (0.5, 2.0)	1.6 (0.3, 9.3)	0.9 (0.4, 2.1)
Anxiety/Depression (OR (95% CI))	1.3 (0.6, 2.6)	2.5 (0.4, 16.1)	1.0 (0.4, 2.3)
Self-Reported Health (Mean Diff. (95% CI))	-0.2 (-1.2, 0.8)	0.8 (-1.5, 3.1)	-0.3 (-1.4, 0.8)

*Missing n = 1; **Missing n = 5; ***Missing n = 6; +: Model did not converge

Symptom Burden

Table 4. Overview of Symptom Burden among people with and without DM

	DM (N = 34)	No DM (N = 184)	Total (N = 218)
# Symptoms (Median (IQR))	3 (1, 6)*	2 (1,6)***	2 (1, 6)
Global Distress Index Score (Mean (STD))	0.4 (0.5)	0.3 (0.3)	0.3 (0.3)
Physical Symptom Score (Mean (STD))	0.3 (0.4)	0.2 (0.2)	0.2 (0.2)
Psychological Symptom Score (Mean (STD))	0.5 (0.6)	0.4 (0.4)	0.4 (0.4)

Note: GDI Score (Range: 0 – 10); Physical Score (Range: 0-12); Psychological Score (Range: 0-6)

Table 5. Unadjusted association between DM and symptom Burden among people with HIV by age strata

	Overall	≥ 65 years	< 65 years
# Symptoms (Mean Difference (95% CI))	-0.04 (-1.2, 1.1)	0.9 (-1.2, 3.0)	-0.4 (-1.7, 1.0)
Global Distress Index Score (Mean Difference (95% CI))	0.1 (-0.01, 0.2)	0.1 (-0.1, 0.3)	0.1 (-0.1, 0.2)
Physical Symptom Score (Mean Difference (95% CI))	0.1 (0.01, 0.2)	0.1 (-0.03, 0.3)	0.08 (-0.02, 0.2)
Psychological Symptom Score (Mean Difference (95% CI))	0.1 (-0.1, 0.3)	0.1 (-0.1, 0.3)	0.1 (-0.1, 0.3)

Conclusions

- Our data suggest that among PWH, age is an effect modifier of the association between DM and QOL but is not a modifier for the relationship between DM and symptom burden.
- Older PWH may be at an increased risk for the QOL burden of DM and should be the focus of future QOL studies.

Acknowledgements

Data in this analysis were collected by the DC Cohort Study Group with investigators and research staff located at: Children's National Hospital Pediatric Clinic (Natella Rakhmanina); the Senior Deputy Director of the DC Department of Health HHSSTA (Clover Barnes); Family and Medical Counseling Service (Angela Woods); Georgetown University (Princy Kumar); The George Washington University Biostatistics Center (Marinella Temprosa, Vinay Bhandaru, Tsedenis Bezaabeh, Nisha Grover, Lisa Mele, Susan Reamer, Alla Sapozhnikova, Greg Strzykiewicz, Asare Buaiah); The George Washington University Department of Epidemiology (Shannon Barth, Morgan Byrne, Amanda Castel, Alan Greenberg, Shannon Hamnerlund, Paige Kullie, Anne Monroe, James Peterson, Bianca Stewart, Lauren O'Connor, Elisabeth Andersen, Olivia Kirby, Mark Storey) and Department of Biostatistics and Bioinformatics (Yan Ma); The George Washington University Medical Faculty Associates (Jose Lucari); Howard University Adult Infectious Disease Clinic (Hansli, Gajjala) and Pediatric Clinic (Sohail Rana); Kaiser Permanente Mid-Atlantic States (Michael Horberg); La Clinica Del Pueblo (Ricardo Fernandez); MetroHealth (Duane Taylor); Washington Health Institute (Jose Bordon); Unify Health Care (Gebeyeu Teferi); Veterans Affairs Medical Center (Debra Benator, Rachel Denyer); Washington Hospital Center (Glenn Wortmann); and Whitman-Walker Institute (Stephen Abbott). Funding: The DC Cohort is funded by the National Institutes of Allergy and Infectious Diseases, 1R24AI152598-01.

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