Migraine headache among underserved African American older adults

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Background

Migraine headache is a common chronic condition that ranks among one of the top ten causes of disability worldwide.[1] Among underrepresented individuals, it remains underdiagnosed and associated with worse outcomes.[2] Little data exist on migraine among underserved minorities, with literature primarily focused on White adults. This study examines correlates of migraine among a sample of underserved urban African American older adults.

Methodology

Our sample included 740 older African American adults from senior centers, senior housing centers, faith-based organizations, and apartment complexes in South Los Angeles aged 55 years or older, recruited through convenience and snowball sampling. All participants provided signed informed consent. CDU's IRB approved study protocol. In addition to demographic variables, our survey included validated instruments, such as:

- Short-Form McGill Pain Questionnaire
- Geriatric Depression Scale
- Self-rated Health Status
- Health-Related Quality of Life Survey

Migraine headache incidence was based on self-reported data. Participants were asked "Have you ever been diagnosed with migraines by a health care provider?". Responses were yes or no.

Analysis

Controlling for relevant variables (age, gender, education, living arrangement, insurance type, satisfaction with and access to medical care, and number of major chronic conditions), the association between migraine headache and

1. healthcare utilization
2. Health-Related Quality of Life (HRQoL)and self-rated of health
3. physical and mental health outcomes and migraine headache

were examined. Data analysis includes bivariate and 12 independent multivariate models.

Table 1: Characteristic of sample and bivariate association between Migraine Headache and other related outcomes (n = 740)

Sample Characteristics	Total Sample	Migraine Headache: No	Migraine Headache: Yes	Sig
	N (%) Mean ± SD	N (%) Mean ± SD	N (%) Mean ± SD	
Gender				
Male	266 (36)	226 (85)	40 (15)	0.021
Female	474 (64)	371 (79)	303 (21)	
Age				
55 – 64	120 (16)	80 (67)	40 (33)	0.002
65 – 74	359 (49)	302 (84)	57 (16)	
75 and older	260 (35)	214 (83)	44 (17)	
Education				
No High School Diploma	183 (25)	143 (79)	39 (21)	
High School Diploma	265 (36)	207 (78)	58 (22)	0.084
Some college/graduate	292 (39)	247 (85)	44 (15)	
Married/Partner				
No	627 (85)	505 (81)	121 (19)	0.113
Yes	113 (15)	92 (82)	20 (18)	
Disability Status				
No	473 (64)	406 (86)	65 (14)	0.087
Yes	267 (36)	191 (71)	76 (29)	
Sleep Disorder				
No	541 (73)	462 (85)	79 (15)	0.000
Yes	197 (27)	135 (69)	62 (70)	
	Mean ± SD	Mean ± SD	Mean ± SD	Sig.
Financial Strains (Alway:1 – Rarely: 5)	4.16 ± 1.23	4.26 ± 1.07	3.76 ± 1.28	0.000
Physical Health Quality of Life	40.26 ± 12.23	41.60 ± 12.06	34.51 ± 11.34	0.000
Mental Health Quality of Life	52.28 ± 10.92	53.22 ± 10.13	48.37 ± 13.16	0.000
Self-rated Health	3.13 ± 1.02	3.05 ± 1.00	3.48 ± 1.01	0.000
Severity of Pain	2.05 ± 2.25	1.72 ± 2.02	3.47 ± 2.62	0.000
Major Chronic Conditions (0 - 6)	2.11 ± 1.10	2.07 ± 1.08	2.31 ± 1.15	0.019
Depressive Symptoms	2.47 ± 2.77	2.10 ± 2.46	4.06 ± 3.44	0.000
Number of Office-based Provider Visits	5.51 ± 3.27	5.48 ± 3.29	5.67 ± 3.20	0.543
Number of ED Admissions	0.79 ± 1.58	0.69 ± 1.39	1.22 ± 2.18	0.000
Number of Hospital Admissions	0.54 ± 1.33	0.54 ± 1.40	0.54 ± 0.99	0.984
Number of Rx Used	5.87 ± 3.24	5.68 ± 3.22	6.67 ± 3.23	0.002
Number of OTC Used	1.18 ± 1.93	1.19 ± 1.86	1.14 ± 2.19	0.797

Results & Discussion

Of the African American older adults (55 years and older) who participated in this study, 21% of males and 15% of females reported migraine headache. Having migraine was associated with three categories of outcomes:

1) **higher level of healthcare utilization** measured by i) **emergency department admissions** and ii) **number of medications used**
2) **lower level of HRQoL and health status** measured by i) **physical QoL**, ii) **mental QoL**, and iii) **lower self-rated health**
3) **worse physical and mental health outcomes** measured by i) **higher number of depressive symptoms**, ii) **higher level of pain**, iii) **sleep disorder**, and iv) **level of disability**

These findings are consistent with our current knowledge of migraine in underserved patients; lack of physician access, prohibitive costs, and substandard migraine therapy, result in increased ED migraine care.[3,4] Prescription drug use was higher in migraineurs (6) than non-migraineurs (5), while the number of over-the-counter medications was not significant. We anticipate that this is reflective of over-the-counter medications being primarily used for abortive measures and use may be limited by contraindications (kidney disease, liver disease).[5,6] Additionally, a migraineur in need of abortive treatment may elect to utilize Emergency Department services, especially if a consistent patient-provider relationship has not been established. While there was scarce literature evaluating migraine's impact on QOL and health status in older adults specifically, it is well known that migraine causes significant disability resulting in loss of function, absenteeism, healthcare costs, and negative impact on social activities.[7] Strong associations were found with migraine and chronic pain, depression, and sleep disorders.

Table 2: Multivariate Analysis of Association between Chronic Migraine Headache and Outcome Variables among Underserved African American Older Adults (N = 740)

Dependent/Outcome Variable	Independent Variable: Migraine Headache (No vs Yes) adjusting for age, gender, education, living arraignment, financial strains, type of insurance, access and satisfaction with care, and number of chronic conditions: Exp. (B) OR	95% CI Exp. (B) OR	Sig.
Health Care Utilization			
Physician Visits	-	-	.714
ED Admissions	1.429	1.182 – 1.728	.000
Hospital Admissions	.839	.647 – 1.088	.185
Number of Rx Used			.016
Number of OTC Used	1.062	.886 – 1.274	.516
QoL and Perceived Health			
Physical Health Quality of Life	-	-	.000
Mental Health Quality of Life	-	-	.002
Self-rated Health	-	-	.007
Health Outcomes			
Depressive Symptoms	-	-	.000
Severity of Pain	-	-	.000
Sleep Disorder			
No	1.00	Ref	.001
Yes	2.021	1.336 – 3.057	
Disability Status			
No	1.00	Ref	.003
Yes	1.895	1.241 – 2.893	

Conclusion

Migraine headache significantly impacts quality of life, health care utilization, and many health outcomes of underserved African American older adults. Our findings show a much higher prevalence of migraine in African American older adults compared with the NHANES data for the same age group.[8] Studies have found migraine to be severe, frequent, and more likely to be undertreated in African American patients.[9] Management of migraine among this group requires multi-faceted interventions and coordinated efforts with EM clinicians, primary care clinicians, and neurologists/neurology PAs when referral is necessary. By providing accurate diagnoses, addressing comorbidities, especially those associated with migraine, identifying social determinants of health that may worsen migraine, and providing appropriate treatment, **PAs are well poised to address the current gaps that may result in migraineurs seeking treatment in overcrowded EDs and to reduce race-related disparities associated with migraine identification and treatment in African American patients.**

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