

Ophthalmic Problems among Homeless Individuals in Los Angeles County, California

Wyatt L. Smith^{1,2}, Daniel W. Cordova^{1,2}, Laura A. Syniuta², Fei Yu², Matthew C. Daly², Anne L. Coleman², Gary N. Holland² From Charles R. Drew University School of Medicine and Science, Los Angeles, CA¹; Center for Community Outreach and Policy, UCLA Stein Eye Institute, Department of Ophthalmology, David Geffen School of Medicine at UCLA, Los Angeles, CA²

Introduction

The city of Los Angeles has the second largest homeless population of any city in the United States.¹ In fact, the total homeless population in the Los Angeles area is estimated to be 58,936 individuals as of 2019, rising 12% from the previous year alone.¹ It has been well documented that individuals experiencing homelessness experience a higher prevalence of chronic health conditions², all-cause mortality³, and barriers to access to care⁴. Prevalence of vision problems and common ophthalmic disorders can have a marked impact not only on risk of experiencing homelessness but also risk of entering a chronic pattern of homelessness.

While this population continues to increase, the impact of vision problems and common eye diseases on exacerbating the problem of homelessness has not been adequately explored. In particular, data on the prevalence of visual impairment and common ophthalmic disorders among adult homeless populations is confined to other countries, specific sub-groups, or studies taking place over 20 years ago.⁵

In this study we describe the prevalence of vision loss and common ophthalmic disorders among patients experiencing homelessness in the West Hollywood area of the city of Los Angeles focusing on three major problems: glaucoma, diabetic retinopathy, and cataract(s). With a diverse population in terms of age, race/ethnicity, and socioeconomic factors, Los Angeles serves as a model for understanding homelessness in general. These investigations may provide a better understanding of the most common ocular problems impacting rates of homelessness and inform community outreach methods towards improved strategies.

Methods

In this study we reviewed medical records for 272 individuals age 18 and older at the UCLA Mobile Eye Clinic Project site at the Salvation Army in West Hollywood from August 2015 – January 2020. The UCLA Mobile Eye Clinic Project through the Center for Community Engagement at the UCLA Stein Eye Institute provides free vision screenings and eye examinations to underserved communities across Los Angeles County. At this clinic site specifically, the Salvation Army offers free meals on Wednesday evenings while individuals waiting in line for food are invited to receive care from two concurrent clinics on a first come, first serve basis: The Mobile Clinic Project at UCLA provides free primary medical care on a weekly basis while the UCLA Mobile Eye Clinic Project provides free eye examinations on a monthly basis.

Data, including demographics and medical history, had been recorded on a standard form and was reviewed after the conclusion of each clinic. Visual acuity and intraocular pressure were measured by trained ophthalmic technicians and recorded in a free response format. Refraction, slit lamp biomicroscopy and dilated fundoscopy were conducted by board-certified ophthalmologists. Refraction and visual acuity were recorded in a free response format. Findings from slit lamp biomicroscopy and dilated fundoscopy were recorded as "normal" or "abnormal" based on pre-selected categories (lids/lashes, conjunctiva, cornea, anterior chamber, iris, lens, disc, vessels, macula).

Ophthalmologist assessment and plan was recorded through pre-selected categories (normal, refractive error requiring eyeglasses, cataract(s), glaucoma suspect, diabetes with diabetic retinopathy, diabetes without diabetic retinopathy, dry eyes, allergic conjunctivitis, blepharitis, pingueculum, pterygium, and other). Ophthalmologists were invited to select all that apply. All data collection forms were bilingual, including both the English and Spanish language.











Table 1. Ophthalmic Examination Findings for 272 Individuals Examined in a Clinic for Homeless Individuals in West Hollywood, Los Angeles County.

Findings	Prevalence (n [%])
Visual acuity in the better seeing eye at presentation (n=261)	
20/20	42 (16.1%)
20/25-20/40	102 (39.1%)
20/50->20/200	83 (31.8%)
20/200 or worse	34 (13.0%)
Best corrected visual acuity in the better seeing eye (n=258)	
20/20	194 (75.2%)
20/25-20/40	50 (19.4%)
20/50->20/200	11 (4.3%)
20/200 or worse	3 (1.2%)
Intraocular pressure (n=257)	
≥21 mm Hg in at least one eye	19 (7.4%)
≥24 mm Hg in at least one eye	8 (3.1%)
Slit lamp biomicroscopy	
Abnormal lens	
RE (n=263)	69 (26.2%)
LE (n=262)	69 (26.3%)
Abnormal disc (n=255)	
RE	17 (6.7%)
LE	17 (6.7%)
Abnormal macula (n=253)	
RE	10 (4.0%)
LE	12 (4.7%)

Table 2. Final Assessments and Related Factors after Screening Examinations for 272 Individuals Examined in a Clinic for Homeless Individuals in West Hollywood, Los Angeles County.



Assessment	Prevalence (n [%])
mal examination	
uncorrected refractive error 261)	144 (55.2%)
/20 after refraction with no ner problems (n=258)	105 (40.7%)
ucoma	
f-reported history of	
ucoma (n=157)	3 (1.9%)
vated IOP (n=257)	
21 mm Hg	19 (7.4%)
24 mm Hg	8 (3.1%)
normal optic disc, either eye :255)	20 (7.8%)
ntified as a glaucoma	
pect, based on any factor 267)	14 (5.2%)
betes mellitus	
f-reported history of	16 (10 2%)
betes mellitus (n=157)	10 (10.270)
ing medications for diabetes ellitus (n=159)	13 (8.2%)
al number of individuals diabetes mellitus (n=269)	25 (9.3%)
undus examination finding or 25 patients with diabetes	
No diabetic retinopathy	18 (72.0%)
Diabetic retinopathy	7 (28.0%) ^c
aracts	
normal lens, either eye, on	74 (30 10/)
amination (n=263)	/4 (20.1%)
al individuals assessed as	
ving cataracts, either eye 267)	43 (16.1%)
er conditions that were	
entially vision-limiting or	
uired follow-up evaluations	
ne or both eyes.	
rneal scars	5 (1.8%)
abismus and motility	4 (1.5%)
orders	
tinal or choroidal disorders	
ier than diabetic	11 (4.0%)
inopathy or macular lesions,	
aro-ophthalmic	3 (1.1%)
fractive error not	
rectable	3 (1.1%)
ner	3 (1.1%)

Table 1 Demographic Information for Common Onbthalmic Disorders after Screening Examinations for 272						
Individuals Seen in a Clinic for Homeless Individuals in Los Angeles County.						
Demographics	Ophthalmic Disorder					
	Glaucoma	Diabetes without retinopathy	Diabetes with retinopathy	Cataract(s)	Macular problems	
	n=42	n=18	n=7	n=81	n=14	
Age (years)	n=41			n=79		
Mean (± SD)	51.8 ± 15.8	59.9 ± 10.6	62.8 ± 11.7	60.4 ± 10.9	55.7 ± 16.7	
Median (range)	54.9 (22.6 – 74.4)	61.5 (33.6 – 85.4)	58.0 (49.3 – 81.4)	61.7 (29.1 – 90.3)	62.9 (25.5 – 81.4)	
Race/ethnicity	n=38	n=17	n=6	n=70	n=12	
Asian	4 (10.5%)	1 (5.9%)	1 (16.7%)	3 (4.3%)	0 (0%)	
Black/African American	10 (26.3%)	8 (47.1%)	0 (0%)	19 (27.1%)	3 (25.0%)	
Hispanic/Latino	9 (23.7%)	4 (23.5%)	3 (50.0%)	26 (37.1%)	3 (25.0%)	
White	11 (29.0%)	2 (11.8%)	1 (16.7%)	21 (30.0%)	3 (25.0%)	
Other	4 (10.5%)	2 (11.8%)	1 (16.7%)	1 (1.4%)	3 (25.0%)	

Discussion

Visual impairment is an unaddressed problem within homeless communities despite increased prevalence among individuals experiencing homelessness.⁶ It has been well documented that visual impairment has a great impact on quality of life, including increased risk of unintentional injuries, social withdrawal, depression, chronic health conditions, and mortality.⁷ Common ophthalmic disorders also greatly impact quality of life in other ways, including ability to perform vision-related activities such as reading, cooking, driving, and leaving the home.⁸ With decreased ability to perform such functional tasks, individuals experiencing homelessness face substantial barriers to achieving not only improved health and quality of life but also economic stability to transition out of homelessness.

The majority of individuals experiencing homelessness are male and communities of color are overrepresented among homeless communities across the country and in our study. The large burden of decreased vision impacting homeless communities is correctable with refraction and distribution of glasses.

Our findings suggest that homeless communities experience glaucoma earlier and at higher rates. individuals identifying as Black/African American and Asian were overrepresented, a finding consistent with national estimates indicating increased prevalence among Black/African Americans and Asian Americans.⁹

Unlike individuals diagnosed with glaucoma, the vast majority of these diabetics had been previously diagnosed with diabetes mellitus and were taking diabetes medication prior to examination. Individuals identifying as Hispanic/Latino were overrepresented among participants diagnosed with diabetic retinopathy. Studies demonstrate that Hispanic/Latino individuals are more likely to present with vision limiting complications of diabetic retinopathy compared to other groups, specifically macular edema, possibly due to lack of screening and early detection.¹⁰

References

- www.lahsa.org/documents?id=3437-2019-greater-los-angeles-homeless-count-presentation.pdf.
- implications for service delivery. BMC Public Health. 2007:7:320.
- 2019;30(3):940-950. doi:10.1353/hpu.2019.0066
- 2011;118(6):1031-1037. doi:10.1016/j.ophtha.2010.10.024 doi:10.17352/ijcem.000027



Funding

Supported by the David Geffen Medical Scholarship, David Geffen School of Medicine at UCLA, Los Angeles, CA; UCLA Stein Eye Institute, Los Angeles, CA; the Skirball Foundation, New York, New York (Dr. Holland), and an unrestricted grant from Research to Prevent Blindness, Inc., New York, NY, to the Department of Ophthalmology, David Geffen School of Medicine at UCLA





David Geffen School of Medicine

2019 Greater Los Angeles Homeless Count Presentation." Go to Main LAHSA Website, Los Angeles Homeless Services Authority, 5 Aug. 2019, Goering P, Tolomiczenko G, Sheldon T, Boydell K, Wasylenki D. Characteristics of persons who are homeless for the first time. Psychiatr Serv. 2002;53:1472-1474 Barrow SM, Herman DB, Cordova P, Struening EL. Mortality among homeless shelterresidents in New York City. Am J Public Health. 1999;89:529-534. Moore G, Gerdtz M, Manias E, Hepworth G, Dent A. Socio-demographic and clinical characteristics of re-presentation to an Australian inner-city emergency department: Rebecca T. Brown, Kaveh Hemati, Elise D. Riley, Christopher T. Lee, Claudia Ponath, Lina Tieu, David Guzman, Margot B. Kushel, Geriatric Conditions in a Population-Based Sample of Older Homeless Adults, The Gerontologist, Volume 57, Issue 4, August 2017, Pages 757–766, https://doi.org/10.1093/geront/gnw012 Henstenburg J, Thau A, Markovitz M, Plumb J, Markovitz B. Visual Impairment and Ocular Pathology Among the Urban American Homeless. J Health Care Poor Underserved Li Y. Crews JE. Elam-evans LD. et al. Visual impairment and health-related quality of life among elderly adults with age-related eve diseases. Qual Life Res. 2011:20(6):845-Gupta P, Liang gan AT, Kidd man RE, et al. Impact of Incidence and Progression of Diabetic Retinopathy on Vision-Specific Functioning. Ophthalmology. 2018;125(9):1401-Stein JD, Kim DS, Niziol LM, et al. Differences in rates of glaucoma among Asian Americans and other racial groups, and among various Asian ethnic groups. Ophthalmology. Barsegian A, Kotlyar B, Lee J, Salifu MO, McFarlane SI. Diabetic Retinopathy: Focus on Minority Populations. Int J Clin Endocrinol Metab. 2017;3(1):034-45.

SUPPORTED BY **RPB Research to Prevent Blindness**