

Visual Impairment and the Prevalence of Ocular Pathology in Homeless Children and Adults Globally: A Systematic Review

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INTRODUCTION:

- Homeless individuals experience a higher prevalence of ocular morbidity and poor visual acuity compared to the general population
- Poor visual acuity and ocular morbidity are associated with a lower quality of life and reduced income which adds to the difficulties homeless individuals experience
- The objectives of this study were 3-fold:
 - To summarize the available evidence regarding the prevalence of visual impairment and ocular pathology in homeless individuals globally
 - To comment on the limitations of this evidence
 - To propose improvements regarding how the collection of future data can be improved

METHODS:

- A systematic literature search was conducted on OVID MEDLINE (1946-July 2020), EMBASE (1947-July 2020) and Cochrane CENTRAL (up to July 2020)
- Peer-reviewed English-language studies with a focus on homeless children or adults that reported on ocular outcomes were included
- Primary outcomes (any outcome related to ocular health) and secondary endpoints (baseline demographics and health access data) were reported via weighted averages if more than one paper reported on an outcome
- Primary outcomes between homeless children and adults were compared using the Fisher exact test

Primary Outcome	Total Homeless Population (weighted average)	Homeless Children (weighted average)	Homeless Adults (weighted average)	p-value
Ocular History				
Previously diagnosed eye problem:	26.8%	N/A	37.2%	-
Previously had an eye surgery or procedure:	9.2%	N/A	13.8%	-
Visual Impairment				
Functional rate of visual impairment	25.6%	16.2%	32.2%	p<0.001
Non-refractive visual impairment	4.0%	N/A	7.20%	-
Uncorrected refractive error	26.3%	11.9%	28.7%	p<0.001
Subjective dissatisfaction with vision/visual impairment	36.8%	N/A	40.8%	-
Ocular Pathology				
Presence of ocular pathology	25.1%	19.9%	35.1%	p<0.001
Ocular motility disorders	4.7%	3.6%	5.2%	p=0.447
Glaucoma	7.4%	N/A	6.5%	-
Cataracts	6.3%	0.8%	12.2%	p<0.001
Trauma	2.3%	N/A	3.2%	-
Retinal diseases	5.3%	0.4%	6.4% ¹	p<0.001
Cornea & external diseases	13.4%	N/A	10.8%	-
Oculoplastic conditions	0.70%	0.5%	1.2%	p=0.460
Neuro-ophthalmological conditions	1.7%	0.3%	7.7%	p<0.001

Table 1: Primary outcomes

RESULTS:

- There were 5774 homeless individuals across 23- full text articles included in the review. Of the sample, 71.1% were male, 28.9% were female and the mean age was 37.4 years old . There were 11 studies from USA, 6 from Canada, 2 from UK, 1 from Germany, 1 from Nepal, 1 from Nigeria and 1 from Australia
- Primary outcomes are listed in 'Table 1'. Homeless adults had significantly higher rates of visual impairment and ocular pathology than homeless children
- Regarding some of the key secondary outcomes, 32.9% of homeless individuals did not graduate high school, 59.5% were single, 40.9% earned less than \$500 a month, and 55.2% were homeless for longer than 1 year

CONCLUSIONS & NEXT STEPS:

- Visual impairment in individuals experiencing homelessness is higher than the general population. Uncorrected refractive error is the leading cause of visual impairment in this population
- Future studies should include more data from under-represented groups, reduce selection bias, work to develop standardized data collection tools and add comparator groups for more robust conclusions



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