Sex-specific standardized mortality ratios for homeless youth: A meta-analysis

A.M. Parriott, [1] J.S. Lin,[2] and C.L. Auerswald [2,3]

[1] Department of Health Policy and Management, UCLA Fielding School of Public Health
[2] Department of Community Health and Human Development, University of California, Berkeley, School of Public Health
[3] Division of Adolescent Medicine, School of Medicine, University of California, San Francisco

INTRODUCTION

- Homeless youth are known to bear a disproportionate burden of mortality.

- Several studies have compared sex-specific mortality rates in homeless youth to the general youth population. Due to low numbers of observed events, confidence intervals have been wide.

- We combined sex-specific standardized mortality ratios (SMRs) across studies to produce more precise estimates.

METHODS

Literature search
- PubMed and Google Scholar search using MeSH terms "mortality" and "homeless persons" or "homeless youth"
- Inclusion criteria:
  – Publication between 1980 and 2012
  – Original research article
  – Sex-specific standardized mortality ratios and confidence intervals (or observed and expected deaths) reported for homeless youth under the age of 30
- 7 studies in 4 Western, industrialized countries identified
- Data from our own, unpublished study (collected 2004-2005) also included

Analyses
- Summary SMRs calculated using inverse variance weighting
- Cochrane's Q statistic used to test the assumption of fixed effects

RESULTS

- Summary SMRs were 8.4 (95% confidence interval: 6.4 to 11.0) for males and 13.5 (95% CI: 7.4 to 24.7) for females. The p-value for the null hypothesis of equality of the gender specific SMRs was 0.16.

- Both male and female youth are at excess risk for mortality relative to the general youth population. While the difference between male and female SMRs was not significant at the $\alpha = 0.05$ level, female point estimates were higher for the summary SMR measure and in all studies that examined both genders except one (where there were 0 deaths and only 179 person years of follow-up for females).

Study	Location	Ages	SMR (CI)
Hwang, Orav, et al. (1997)	Boston	18-24	Males: 5.9 (2.1-17.0)[a] Females: 11.8 (4.2-33.1)[a]
Shaw & Dorling (1998)	London	16-29	Males: 37.32 (20.38-62.63)
Barrow, Herman, et al. (1999)	New York	20-24	Males: 4.2 (0.4-11.9) Females: no deaths
Hwang (2000)	Toronto	18-24	Males: 8.3 (4.4-15.6)
Nordentoft & Wandall-Holm (2003)	Copenhagen	15-24	Males: 13.3 (5.4-27.7) Females: 28.5 (1.4 – 140.6)
Roy, Haley, et al. (2004)	Montreal	14-25	Males: 11.1 (6.9-16.8)[b] Females: 13.5 (3.6-34.5)[b]
Babidge, Buhrich, & Butler (2008)	Sydney	20-29	Males: 3.51 (1.29-7.64) Females: 16.67 (0.42-92.02)
Parriott, Lin, & Auerswald (Unpublished)	San Francisco	15-24	Males: 7.6 (3.7-13.9)[a, b] Females: 12.7 (3.2-34.5)[a, b]
Pooled	-	-	Males: 8.4 (6.4 – 11.0) Females: 13.5 (7.4 – 24.7)

[a] Race-adjusted
[b] Age-adjusted

DISCUSSION

- Data suggest that homeless females may be at particularly high risk of mortality relative to their housed female counterparts

- The summary estimate for female youth remains imprecise. Additional data are needed to improve estimation of relative mortality in females.

- Interventions to reduce premature death among street youth are needed

- Further research may help to inform development of appropriate, sub-group specific services for street youth