

UNIVERSITY OF CALIFORNIA

Los Angeles

The Validity of Proportionate Mortality Ratio Analysis
in Homogeneous and Non-Homogeneous Populations,
with Special Reference to Cancer Deaths
in California in an Intercensal Period

A thesis submitted in partial satisfaction
of the requirement for the degree
Master of Science in Public Health

by

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1979

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I have stated following pages:
page 2
page 14
page 76
page 81

P.S. This was a lot of work
& you've done a nice job!
Junc

**THE VALIDITY OF PROPORTIONATE MORTALITY RATIO
ANALYSIS IN HOMOGENEOUS AND NON-HOMOGENEOUS
POPULATIONS, WITH SPECIAL REFERENCE TO CANCER
DEATHS IN CALIFORNIA IN AN INTERCENSAL PERIOD**

Thesis for MSPH degree
Liz Stewart

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ABSTRACT OF THE THESIS

The Validity of Proportionate Mortality Ratio Analysis
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Professor Rolando Armijo, Chair

In the absence of denominator data, population-based rates cannot be computed and used to estimate secular trends in cause-specific mortality. In an attempt to develop a new, denominator-free statistic for estimating mortality, crude death rates (CDR's) were compared to proportionate mortality ratios (PMR's) for 12 broad cause-of-death categories in three populations, over periods ranging from 19 to 60 years. Preliminary analysis showed that changes in PMR's could be used to approximate changes in CDR's over the same time interval. Direct comparison of CDR's indicated that the two statistics tended to be highly correlated, particularly in the older age groups. Application of PMR techniques to site-specific cancer deaths in a U.S. population (California, 1960-1970) demonstrated a very close correspondence between PMR's and CDR's for this data set. These results imply that, under certain conditions, PMR's may be used to estimate CDR's in the absence of denominator data. Recommendations for further work in this area include 1) Comparisons of CDR's to PMR's in other populations to establish the validity of their relationship, 2) Development of a summary statistic for age-specific PMR's, and 3) Development of confidence intervals for PMR estimation of CDR's.