ELSEVIER

Alzheimer's & Dementia ■ (2016) 1-16

Alzheimer's & Dementia

Review Article

Systematic review of dementia prevalence and incidence in US race/ethnic populations

Kala M. Mehta[a,b,*], Gwen W. Yeo[a,**]

[a]*Department of Epidemiology and Biostatistics, University of California, San Francisco, San Francisco, CA, USA*
[b]*Stanford Geriatric Education Center, Stanford University School of Medicine, Stanford, CA, USA*

Abstract

Objective: To identify incidence and prevalence of dementia in racial and ethnic populations in the United States.

Methods: A systematic review of literature.

Results: A total of 1215 studies were reviewed; 114 were included. Dementia prevalence rates reported for age 65+ years from a low of 6.3% in Japanese Americans, 12.9% in Caribbean Hispanic Americans, 12.2% in Guamanian Chamorro and ranged widely in African Americans from 7.2% to 20.9%. Dementia annual incidence for African American (mean = 2.6%; SD = 1%; range, 1.4%–5.5%) and Caribbean Hispanic populations were significantly higher (mean, 3.6%; SD, 1.2%; range, 2.3%–5.3%) than Mexican American and Japanese Americans and non-Latino white populations (0.8%–2.7%), $P < .001$.

Conclusions: Data are needed for American Indian, most Asian, and Pacific Islander populations. Disaggregation of large race/ethnic classifications is warranted due to within-population heterogeneity in incidence and prevalence. African American and Caribbean Hispanic studies showed higher incidence of dementia. A nationwide approach is needed to identify communities at high risk and to tailor culturally appropriate services accordingly.

Keywords: ■■■

1. Introduction

Two impending trends are poised to make major changes in older adult health care in the United States by midcentury: (1) The number of individuals with Alzheimer's Disease (AD) and other types of dementia are expected to almost triple from the current 5 million to 13.7 million [1], and (2) ethnic and racial diversity of older Americans will increase dramatically resulting in an ethnogeriatric imperative for health care providers. Elders from the five ethnic minority populations (Latino/Hispanic, African American, Asian, American Indian and Pacific Islander) are projected to grow to 40% of all adults aged 65 years and more, which drastically underrepresents the actual diversity clinicians will face because of the vast heterogeneity within both minority and non-minority populations [2,3].

At the intersection of these two major changes are clinicians, policy makers, and racially and ethnically diverse elders and their families attempting to deal with severe cognitive loss. The rationale for this review is that basic information regarding the rates of severe cognitive loss for each separate ethnic/racial subpopulation is needed on a national scale for health planning and research by policy makers and clinicians. Prior published reports on dementia rates released frequently presented one rate for a large category of individuals; which obscures important differences [1]. The objective of this systematic review, according to the PICOS criteria (participants, interventions,

---

The authors report no disclosures.

*Corresponding author. Tel.: +1-(415)-205-8780; Fax: +1-(415)-514-8150.

**Corresponding author. Tel.: +1-(831)-688-5149; Fax: +1-(831)-662-3626.

E-mail address: kala.mehta@ucsf.edu (K.M.M.), gwenyeo@stanford.edu (G.W.Y.)

http://dx.doi.org/10.1016/j.jalz.2016.06.2360
1552-5260/

comparisons, outcomes, and study design) are to compare the dementia research on prevalence and incidence among diverse race/ethnic participants. No specific interventions were studied.

The purpose of this review is to synthesize what is currently known about the specific race/ethnic diverse groups regarding dementia prevalence and incidence, to inform the scientific community of relevant gaps in the literature, and make information available to a wide audience of clinicians, educators, and policy makers so they can make evidence-based decisions about care for diverse patients.

2. Methods

In this study, a systematic review of the literature was undertaken after the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) criteria [4]. Because the review did not include intervention studies, the protocol was not registered. In January, 2013, potential articles were identified through a search of PubMed, PsychLit, and CINAHL using the search terms listed in Appendix A. This search was guided by an information specialist at Stanford's Lane Medical Library. Titles that were not relevant were deleted, and both authors individually reviewed the resulting abstracts. Eligibility criteria for inclusion in the review included: having a representative sample of one or more racial/ethnic population in the United States (except those with only or primarily non-Latino white populations) with separate data reported by subgroup; use of criteria-based diagnostic measures for dementia and publication in English. Additional articles were found through citations and an updated PubMed, PsychLit, and CINAHL search in February, 2014. Full copies of relevant articles were read by the authors and coded into a MS Excel spreadsheet. Eligible articles were assessed based on select outcome measures recommended by the MOOSE group [5], and each study was evaluated on study quality defined as the representativeness of the sample, the appropriateness of the measures used, and completeness of the reporting.

The following data items were collected on each article: authors, title, year, journal, race/ethnic population, ethnicity, geographic area covered, age range, population recruited (e.g., whether nursing home residents were included), prevalence, incidence, whether these were age-adjusted and further whether these were stratified by gender or educational level.

Prevalence and incidence information are presented for each race/ethnic group from the accepted studies. As prevalence is heavily influenced by duration of illness, which varies by race/ethnic group, incidence data were used for synthesis. Annual incidence data were either reported directly from the manuscripts or calculated by dividing overall incidence by the number of years on study. To compare incidence rates by race/ethnic population we calculated the summary mean of annual incidence for the studies in each population, and compared them using a student's t test with Boniferroni adjustment. A *P*-value of $<.001$ was considered significant. To our knowledge, the only risk of bias of the cumulative evidence would be publication bias, that is, that researchers with data on incidence or prevalence in diverse race/ethnic groups did not publish their data and therefore were unavailable for review. Other risks of bias, such as selective reporting of race/ethnic incidence and prevalence within studies, did not occur as far as we know.

3. Results

In the initial search, 1215 potential articles were identified by title. One author (G.Y.) and a research assistant eliminated 1020 abstracts that were clearly not relevant. Additional articles were found through citations and an updated search. Both authors read 195 abstracts and conducted full reviews of 158 full texts; 114 articles deemed to fit the eligibility criteria by consensus were coded into a MS Excel spreadsheet (See Fig. 1 for details.). Based on the authors' judgments on the risk of bias/quality of the studies, 72 were evaluated as high quality, 17 medium, and 15 low, with 10 missing ratings.

Almost all the studies reported self-identification as the basis for the ethnic racial identification. Most of the included studies were cross sectional, population-based studies for prevalence and longitudinal cohort studies for incidence.

Table 1 summarizes prevalence studies; Fig. 2 charts incidence studies. In each instance, rates for non-Latino whites are also shown from those studies which included them.

3.1. African American

3.1.1. Prevalence

As Table 1 illustrates, articles reporting the prevalence of dementia among African Americans outnumber those for all the other populations combined. The ten studies reporting prevalence vary in dates of the studies (1985 to 2012), in age of the samples ($\geq$40 to $\geq$100), methods of recruitment, whether nursing home residents were included, assessment instruments and procedures used, and how results were reported, as well as geographic areas where subjects were recruited. Prevalence ranges from $<0.01\%$ in 40–50-year-old women in Copiah County, MS [6] to 68.1% in adults 100 years and older in Georgia [7].

One of the most referenced prevalence studies including African Americans is that among Medicare enrollees in certain census tracts in North Manhattan [8]. Their prevalence rates reported by age cohorts were much higher than in any of the other studies of African Americans. For example, 59% of those aged $\geq$85 years were found to have dementia, compared to the four other reports of the same age, which ranged from 12% to 32% [9–12].