A widening longevity gap between people with schizophrenia and general population: A literature review and call for action

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ABSTRACT

Individuals with schizophrenia have higher mortality rates than the population at large. General mortality rates have declined in developed countries since the early 1970s, extending average lifespan by nearly a decade. This review of eight longitudinal studies of mortality in schizophrenia found that the mean standardized mortality ratio (SMR, a measure of mortality rate in schizophrenia compared to the general population) increased 37%, from 2.2 in the pre-1970s studies to 3.0 in the post-1970s reports. Major changes in societal stigma, healthcare, and economic policy are urgently warranted to ensure that this vulnerable segment of the population participates in the longevity revolution.

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1. Introduction

Decades of research have demonstrated markedly elevated physical comorbidity and premature mortality in persons with schizophrenia, with a 15–20 year shorter life expectancy compared to the general population (Brook, 1985; Laursen et al., 2014). Much of this longevity gap has been attributed to natural causes of death, in particular, cardiovascular disease (Olfson et al., 2015; Brown et al., 2010; Saugstad and Odegard, 1985). Unhealthy lifestyles (e.g., smoking, poor diet, sedentary habits), suboptimal healthcare perpetuated by social stigma against mental illnesses, and biological factors (e.g., accelerated aging) contribute to increased mortality (Brown et al., 2010; Hennekens et al., 2005; Kirkpatrick et al., 2008; Jeste et al., 2011; Hoang et al., 2011; Giel et al., 1978). Recent individual studies have suggested an increasing mortality gap between persons with schizophrenia and the general population during the last 20–30 years (Brown et al., 2010; Hoang et al., 2011; Hoye et al., 2011; Haugland et al., 1983; Saha et al., 2007; Laursen et al., 2012; Capasso et al., 2008; Nielsen et al., 2013). However, in contrast to regular epidemiologic examinations of changing mortality trends in serious physical illnesses such as cancer (Jakobsen et al., 2016; Abdoli et al., 2015; Aizer et al., 2014), there has been no systematic review of longitudinal trends in mortality among persons with schizophrenia.

Average life expectancy in developed countries (including Western Europe) increased from 72 years in 1970–1975 to 80 years in 2005–2010 (UN, 2012). This increase is attributed mainly to medical advances and improved healthcare, turning illnesses that used to be almost inevitably fatal (e.g., myocardial infarctions and strokes) into chronic diseases. However, these benefits have not been universal, and have not had much impact on population subgroups such as ethnic/racial minorities and lower socioeconomic classes (UN, 2012), likely due to discrimination, disparate use of healthcare services, race-specific risks for certain diseases, and lifestyle differences between low- and high-income areas. In the case of schizophrenia, the main changes in the mental healthcare system in the Western world during the last century were the discovery and widespread use of antipsychotic medications in the 1950s and the subsequent community psychiatry movement that led to deinstitutionalization of persons with serious mental illnesses (SMI) from psychiatric hospitals. Psychiatric care was restructured from primary inpatient services to outpatient clinics, as most psychiatric hospitals closed in the 1960s and early 1970s throughout western European countries (Lesage et al., 1990; Osby et al., 2000; Lamb and Bachrach, 2001). In the United Kingdom, for instance, the number of psychiatric beds decreased from 150,000 in the 1950s to 27,000 in 2010, following sharp declines in the 1970s and 1980s (Olson, 2006). This change might have helped protect persons with SMI from the abuses of mental institutions, offered effective treatment of the symptoms for the first

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time, and promoted recovery within a community setting (Saugstad and Odegard, 1985; Haugland et al., 1983). Initially, most people with SMI moved from institutions to live with their families; however, at least in the US, the proportion of SMI patients living with families has declined significantly over the past three decades, from 73% to 46% (Craig and Lin, 1981; Tsai et al., 2011; Goldman, 1982). At the same time, the mental health system has lacked adequate infrastructure for the necessary social support and healthcare for people with SMI, resulting in new challenges of homelessness and incarceration (Lamb and Bachrach, 2001). In order to highlight an important area of policy reform and improved clinical practice, we sought to determine if the excess mortality rates in schizophrenia changed during the recent decades, explicitly focusing on the pre-1970 and post-1970 studies to assess possible associations of deinstitutionalization and changing mental healthcare system.

2. Methods

Using the Meta-analysis Of Observational Studies in Epidemiology (MOOSE) guidelines (Stroup et al., 2000), we conducted a systematic literature search for longitudinal studies of mortality in schizophrenia, as outlined in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) diagram (Fig. 1). Inclusion criteria were: (a) English-language reports published since 1950 as identified through a systematic search of two electronic databases (MEDLINE and PsychINFO) in March 2017 using the search terms/phrases for MEDLINE ("Mortality"[Mesh]) AND ("Schizophrenia Spectrum and Other Psychotic Disorders"[Mesh]) and PsychINFO, (b) reported mortality in patients with schizophrenia, schizoaffective disorder, and other psychotic disorders, (c) reported standardized mortality ratio (SMR) data or sufficient information to allow calculation of the SMR, (d) reported more than one time-point, and (e) reported mortality from all-cause, natural cause, or cardiovascular-related causes. SMR is a commonly used metric of the excess mortality in schizophrenia relative to the general population. SMR data convey the rate of mortality in persons with schizophrenia compared to the general population, adjusted for age and gender. Review papers were excluded from this study; however, all original empirical reports identified through the above search terms were examined for possible inclusion.

3. Statistical analyses

We calculated the annual rate of change in SMR within each study (difference in SMR divided by the original SMR and then by the number of years between the two SMR time-points) as well as the overall mean SMRs before and after the early 1970s. As the study populations varied from one another in several ways (Table 1) and our focus was on changes in SMR over time, we could not use formal statistical methods of meta-analysis such as a forest plot.
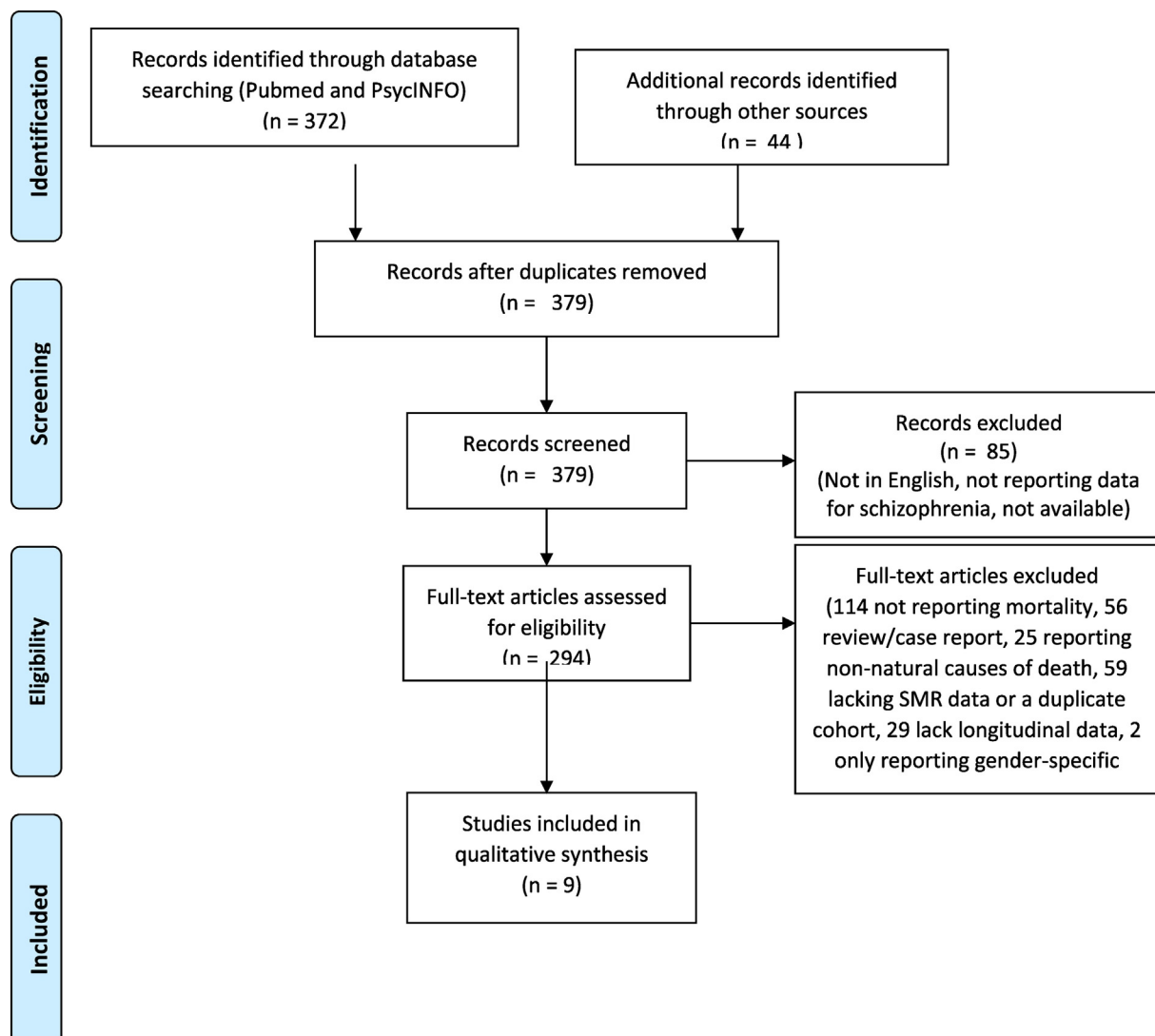

Fig. 1. PRISMA flow diagram.