Journal of Psychosomatic Research 73 (2012) 104–107

Contents lists available at SciVerse ScienceDirect

Journal of Psychosomatic Research

Life expectancy at birth and all-cause mortality among people with personality disorder

Marcella Lei-Yee Fok, Richard D. Hayes, Chin-Kuo Chang, Robert Stewart, Felicity J. Callard, Paul Moran *

King's College London, King's Health Partners, Dept of Health Service and Population Research, Institute of Psychiatry, London, UK

ARTICLE INFO

Article history:
Received 27 January 2012
received in revised form 3 May 2012
accepted 3 May 2012

Keywords:
Epidemiology
Life expectancy
Mental health services
Mortality
Personality disorders

ABSTRACT

Objective: It is well established that serious mental illness is associated with raised mortality, yet few studies have looked at the life expectancy of people with personality disorder (PD). This study aims to examine the life expectancy and relative mortality in people with PD within secondary mental health care.
Methods: We set out to examine this using a large psychiatric case register in southeast London, UK. Mortality was obtained through national mortality tracing procedures. In a cohort of patients with a primary diagnosis of PD ($n = 1836$), standardised mortality ratios (SMRs) and life expectancies at birth were calculated, using general population mortality statistics as the comparator.
Results: Life expectancy at birth was 63.3 years for women and 59.1 years for men with PD—18.7 years and 17.7 years shorter than females and males respectively in the general population in England and Wales. The SMR was 4.2 (95% CI: 3.03–5.64) overall; 5.0 (95% CI: 3.15–7.45) for females and 3.5 (95% CI: 2.17–5.47) for males. The highest SMRs were found in the younger age groups for both genders.
Conclusion: People with PD using mental health services have a substantially reduced life expectancy, highlighting the significant public health burden of the disorder.

Introduction

Mental disorder is an established risk factor for increased mortality [1,2]. People with mental disorders die prematurely for a variety of reasons, including poor physical health [3–5], adverse physiological consequences of long term psychotropic medication, unhealthy lifestyle [5], as well as increased death rates as a result of suicide, accidents and homicide [6–8]. The risk of increased mortality has been shown to vary according to type of mental disorder, with substance use disorders conferring a particularly high risk of early death [1,9,10]. Personality disorder is a global health problem [11]. It is one of the hardest psychiatric conditions to treat and has a considerable economic impact on general medical and mental health services. People with personality disorder (PD) are known to be at particularly high risk of increased mortality as a result of both natural and unnatural causes [12–16]. However, no study has comprehensively examined life expectancy at birth of the full range of secondary care service users with PD. Life expectancy is a vital public health statistic which serves as a readily identifiable indicator of general mortality in a specified population followed up for a certain period of time.

Methods

In the current study, we used a large psychiatric case register to conduct a retrospective cohort study, the purpose of which was to ascertain life expectancy at birth and age- and gender-standardised mortality of personality-disordered patients compared to the general England and Wales population. We also calculated standardised mortality ratios stratified by gender and age group, in order to investigate differences among subgroups.

Setting and participants

Our sample was drawn from the electronic case register of the South London and Maudsley NHS Foundation Trust (SLAM), Europe's largest secondary mental health care provider serving an aggregate population of 1.2 million people living in four London boroughs (Lambeth, Southwark, Lewisham and Croydon). The SLAM Biomedical Research Centre (BRC) Case Register provides anonymised in-depth information derived from an electronic clinical record system. The development and protocol of this case register has been described in detail in a previous open access publication [17]. SLAM incorporates inpatient and outpatient care, and a broad array of community care teams, as well as psychiatric liaison services to general hospitals, and forensic, old age, child and adolescent, and learning disability mental health teams.

Electronic clinical records have been used comprehensively across all SLAM services since 2006 and the BRC Case Register Interactive Search (CRIS) system was developed in 2008 to allow searching and retrieval

* Corresponding author at: Institute of Psychiatry, Box PO28, De Crespigny Park, London SE5 8AF, UK. Tel.: +44 20 7848 0568; fax: +44 20 7848 5056.
E-mail address: paul.moran@kcl.ac.uk (P. Moran).

0022-3999/$ – see front matter © 2012 Elsevier Inc. All rights reserved.
doi:10.1016/j.jpsychores.2012.05.001

of anonymised information from full clinical records with over 182,000 cases currently represented on the system. CRIS was approved as a data resource for secondary analysis by the Oxfordshire Research Ethics Committee (reference 08/H0606/71).

All cases within the case register that had been given a primary PD diagnosis by International Classification of Diseases, 10th Edition (ICD-10) within the four-year period from 1 January 2007 to 31 December 2010, and were over 15 years of age, were recruited into the study as a cohort ($n = 1836$). All-cause mortality in patients with PD over this four-year period was used for analyses. The beginning of 2007 was chosen as a starting point for the observation because this corresponded to the most complete recording of clinical data on the Case Register.

Measures

Death identification

NHS number is a\ unique identifier for UK NHS records. All death certifications are linked to this identifier at national level, and health service providers are required by law to keep records up to date with respect to this. Every death in the UK, after the issuing of a formal death certificate, must be reported to the Office for National Statistics General Records Office and conveyed to the NHS Care Records Service, which holds these death notifications and makes them available to all NHS organisations. In accordance, on a weekly basis, SLAM downloads a list of deceased patients from the NHS Care Records Service and updates their dates of death onto the patients' records, whether that person is active to services or has been discharged. In the present study, deaths determined by a date of death within the 4-year period were enrolled for analyses.

Personality disorder

This was based on the patient's primary ICD-10 diagnosis of PD (categories F60 and F61) dated from 1 January 2007 to 31 December 2010 in the Case Register.

Demographics

Date of birth, gender, ethnicity and marital status of all patients are routinely recorded on the Case Register. Age was calculated at the date of primary diagnosis of PD that occurred in the observation period. All those who were under the age of 15 at this date were excluded from the analyses.

Statistical analysis

Life expectancy at birth

Life expectancy at birth is an index derived from age-specific mortality that highlights the impact of mortality in younger age groups. A life table is constructed using the age-specific mortality of an observed population over a given period of time; life expectancy at birth is calculated from the accumulated total person-years contributed by the entire concurrent cohort divided by the size of the population at the beginning of follow up. We used Chiang's method of abridged life tables with five-year age bands to calculate life expectancy [18]. For each individual, the period of time from the date of PD diagnosis until death or the end of the observation period (whichever occurred first), was taken as the 'at-risk period'. In each 5-year age band, the total person-years at risk is the sum of all the at-risk periods of the individuals in the age band. The number of people who had a recorded death during this period was used as the numerator to calculate the annual mortality rate for the age band. In some instances, individuals moved from one age band to the next during the four-year observation period. In such cases, the specific time at risk contributed by those individuals to each age band was then assigned to the respective age bands. Given that those below the age of 15 years were excluded from our cohort, we filled in the three cells in the life table corresponding to death rates for 0–5 years, 5–10 years and 10–15 years of age with the respective comparative death rates for these age groups in the England and Wales general population in 2008 [19]. These tables were inserted into a Microsoft Excel spreadsheet and values for gender-specific life expectancy were calculated with 95% confidence intervals. These life expectancy estimates were compared with gender-specific life expectancy at birth for the England and Wales population in 2006–2008 [20], and the arithmetic differences between the two were then calculated.

Standardised mortality ratios

The estimation of all SMRs was carried out using Stata version 10 [21]. As with life expectancy, the at-risk period was defined as the period of time from the date of PD diagnosis in the observation period until date of death or the end of the observation period (whichever occurred first). SMRs were calculated for the four-year follow-up period, using the number of deaths observed in the cohort in these four years as the numerator. SMRs were gender- and age-standardised using five-year age bands (i.e., 15–19, 20–24, 25–29, …, 85–89, 90 or over). The denominator was derived by calculating the total person-years at risk in each age group of the sample, then multiplying this by the corresponding age- and gender-specific mortality rate in the England and Wales population [19]. The time period at risk contributed by individuals who moved from one age band to the next during the observation period was assigned to the respective age bands.

Results

A total of 1836 cases formed the analysed cohort. The characteristics of the cases are displayed in Table 1. In summary, the majority were female (60%), 73% were white British and 74% were in the 15–44 years age group. Regarding marital status, 66% were single, 10% were either married, cohabiting or in a civil partnership, and 12% were divorced, separated or widowed.

Estimates of life expectancy at birth of people with PD, stratified by gender, are displayed in Table 2 along with the differences compared to general population estimates. Compared to the England and Wales general population, the life expectancy of men and women with PD in this sample was lower by 17.7 and 18.7 years respectively.

Table 3 displays age- and gender-standardised SMRs for the entire cohort and then stratified by gender and age groups. The SMR for all patients with PD in this cohort was 4.2 (95% CI: 3.03–5.64) and the SMRs for male and female personality-disordered patients were of a similar magnitude. Stratification by age bands revealed that the youngest age group (15–44 years old) carried the highest excess mortality, compared to the general population, and that the youngest age group had higher excess mortality compared to the oldest age group.

Table 1
Characteristics and 4-year mortality of patients with personality disorder

Characteristics	Number of PD cases (number of deaths, %)
Total cohort	1836 (43, 2.34%)
Gender	
Female	1103 (23)
Male	733 (20)
Ethnicity	
White British	1340 (39)
Mixed	29 (0)
Asian or Asian British	41 (3)
Black or Black British	226 (1)
Other	84 (0)
Not stated/unknown	116 (0)
Age group	
15–44 years	1354 (20)
45–64 years	419 (11)
65+ years	63 (12)
Personality disorder	
Any personality disorder (F60–F61)	1836 (43)
Cluster A (F60.0, F60.1)	109 (2)
Cluster B (F60.2, F60.3, F60.31, F60.4)	924 (18)
Cluster C (F60.5, F60.6, F60.7)	62 (1)
Other	741 (22)