TECHNICAL COMMENTARY

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SCHIZOPHRENIA LIBRARY

Prevalence in elderly people

Introduction

Prevalence represents the overall proportion of individuals in a population who have the disorder of interest. It is different from incidence, which represents only the new cases that have developed over a particular time-period. Point prevalence is the proportion of individuals in a population who have the disorder at a given point in time, while period prevalence is the proportion of individuals in a population who have the disorder over specific time periods. Lifetime prevalence is the proportion of individuals in a population who have ever had the disorder and lifetime morbid risk also includes those who had the disorder but were deceased at the time of the survey. This summary table presents the evidence on prevalence rates of schizophrenia in elderly people.

Method

We have included only systematic reviews with detailed literature search, methodology, and inclusion/exclusion criteria that were published in full text, in English, from the year 2000. Reviews were identified by searching the databases MEDLINE, EMBASE, and PsycINFO. Reviews with pooled data are prioritized for inclusion. Reviews reporting fewer than 50% of items on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA[1]) checklist have been excluded from the library. The evidence was graded guided by the Grading of Recommendations Assessment, Development and Evaluation (GRADE) Working Group approach[2]. The resulting table represents an objective summary of the available evidence, although the conclusions are solely the opinion of staff of NeuRA (Neuroscience Research Australia).

Results

We found two systematic reviews that met our inclusion criteria[3, 4].

- Moderate to high quality evidence finds the overall prevalence of schizophrenia/psychotic disorders in older prisoners is around 5.5%.
- Moderate quality evidence suggests the prevalence of schizophrenia in elderly men who attempted suicide is around 5%, which is substantially lower than the prevalence of mood disorders (42%) or substance use disorders (41%) in this population.

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Prevalence in elderly people

Di Lorito C, Vollm B, Dening T

Psychiatric disorders among older prisoners: A systematic review and comparison study against older people in the community

Aging & Mental Health 2018; 22: 1-10

View review abstract online

Comparison	**Prevalence of schizophrenia or other psychotic disorders in older prisoners (>50 years).** **4 studies were conducted in the USA, 3 in the UK, and 1 in France.**
Summary of evidence	**Moderate to high quality evidence (large sample, unable to assess consistency, appears precise, direct) finds the overall prevalence of schizophrenia/psychotic disorders in older prisoners is around 5.5%.**
Prevalence of schizophrenia/psychotic disorders	
Schizophrenia/psychoses: 8 studies, N = 2,326, prevalence = 5.5%, 95%CI 5.3% to 5.7% Older prisoners were found to have a higher risk of schizophrenia/psychosis than people in the community, but this increase was not significantly different (RR = 6.0, $p > 0.05$).	
Consistency in results	Unable to assess; no measure of consistency is reported.
Precision in results	Appears precise for prevalence; unable to assess RR (no CIs reported)
Directness of results	Direct

Ribeiro GCA, Vieira WA, Herval AM, Rodrigues RPCB, Agostini BA, Flores-Mir C, Repeke CEP, Paranhos LR

Prevalence of mental disorders among elderly men: A systematic review and meta-analysis

Sao Paulo Medical Journal 2020; 138(3): 190-200

View review abstract online

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Comparison	**Prevalence of schizophrenia in elderly men who attempted suicide.**
Summary of evidence	**Moderate quality evidence (large sample, inconsistent, imprecise, direct) suggests the prevalence of schizophrenia in elderly men who attempted suicide is around 5%, which is substantially lower than the prevalence of mood disorders (42%) or substance use disorders (41%) in this population.**
Prevalence of schizophrenia	
2 studies, N = 38,251, prevalence = 5.0%, 95%CI 0.0% to 14.0%, I^2 = 80% This rate was lower than mood disorders (42%) or substance use disorders (41%).	
Consistency in results	Inconsistent
Precision in results	Appears imprecise
Directness of results	Direct

Explanation of acronyms

CI = confidence interval, N = number of participants, I^2 = the percentage of the variability in effect estimates that is due to heterogeneity rather than sampling error (chance), RR = risk ratio

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Explanation of technical terms

* Bias has the potential to affect reviews of both RCT and observational studies. Forms of bias include; reporting bias – selective reporting of results, publication bias - trials that are not formally published tend to show less effect than published trials, further if there are statistically significant differences between groups in a trial, these trial results tend to get published before those of trials without significant differences; language bias – only including English language reports; funding bias - source of funding for the primary research with selective reporting of results within primary studies; outcome variable selection bias; database bias - including reports from some databases and not others; citation bias - preferential citation of authors. Trials can also be subject to bias when evaluators are not blind to treatment condition and selection bias of participants if trial samples are small[5].

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† Different effect measures are reported by different reviews.

Prevalence; how many people have a particular disorder or event at a particular point in time. Incidence; how many new cases of a disorder or event per population in a specified time period.

Median rate ratio refers to the ratio between prevalence or incidence rates of two groups, based on the median rather than the mean. The median is often used as a better measure of central tendency than the mean when data are skewed. Harmonic means are also used when data are skewed and are appropriate for rate data.

Reliability and validity refers to how accurate the instrument is. Sensitivity is the proportion of actual positives that are correctly identified - 100% sensitivity = predict all people who are at high risk as developing psychosis and specificity is the proportion of negatives that are correctly identified - 100% specificity = not predicting anyone as being at high risk if they are truly not.

Weighted mean difference scores refer to mean differences between treatment and comparison groups after treatment (or occasionally pre to post treatment) and in a randomised trial there is an assumption that both groups are comparable on this measure prior to treatment. Standardised mean differences are divided by the pooled standard deviation (or the standard deviation of one group when groups are homogenous) that allows results from different scales to be combined and compared. Each study's mean difference is then given a weighting depending on the size of the sample and the variability in the data. 0.2 represents a small effect, 0.5 a medium effect, and 0.8 and over represents a large effect[5].

Odds ratio (OR) or relative risk (RR) refers to the probability of a reduction (< 1) or an increase (> 1) in a particular outcome in a treatment group, or a group exposed to a risk factor, relative to the comparison group. For example, a RR of 0.75 translates to a reduction in risk of an outcome of 25% relative to those not receiving the treatment or not exposed to the risk factor. Conversely, a RR of 1.25 translates to an increased risk of 25% relative to those not receiving treatment or not having been exposed to a risk factor. A RR or OR of 1.00 means there is no difference between groups. A medium effect is considered if RR > 2 or < 0.5 and a large effect if RR > 5 or < 0.2[6]. lnOR stands for logarithmic OR where a lnOR of 0 shows no difference between groups. Hazard ratios measure the effect of an explanatory variable on the hazard or risk of an event.

Correlation coefficients (eg, r) indicate the strength of association or relationship between variables. They are an indication of

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prediction, but do not confirm causality due to possible and often unforseen confounding variables. An r of 0.10 represents a weak association, 0.25 a medium association and 0.40 and over represents a strong association. Unstandardised (*b*) regression coefficients indicate the average change in the dependent variable associated with a 1 unit change in the independent variable, statistically controlling for the other independent variables. Standardised regression coefficients represent the change being in units of standard deviations to allow comparison across different scales.

‡ Inconsistency refers to differing estimates of treatment effect across trials (i.e. heterogeneity or variability in results) that is not explained by subgroup analyses and therefore reduces confidence in the effect estimate. I^2 is the percentage of the variability in effect estimates that is due to heterogeneity rather than sampling error (chance) - 0% to 40%: heterogeneity might not be important, 30% to 60%: may represent moderate heterogeneity, 50% to 90%: may be considerable heterogeneity and over this is considerable heterogeneity.. I^2 can be calculated from Q (chi-square) for the test of heterogeneity with the following formula;

$$I^2 = \left(\frac{Q - df}{Q}\right) \times 100\%$$

§ Imprecision refers to wide confidence intervals indicating a lack of confidence in the effect estimate. Based on GRADE recommendations, a result for continuous data (standardised mean differences, not weighted mean differences) is considered imprecise if the upper or lower confidence limit crosses an effect size of 0.5 in either direction, and for binary and correlation data, an effect size of 0.25. GRADE also recommends downgrading the evidence when sample size is smaller than 300 (for binary data) and 400 (for continuous data), although for some topics, this criteria should be relaxed[7].

‖ Indirectness of comparison occurs when a comparison of intervention A versus B is not available but A was compared with C and B was compared with C that allows indirect comparisons of the magnitude of effect of A versus B. Indirectness of population, comparator and or outcome can also occur when the available evidence regarding a particular population, intervention, comparator, or outcome is not available so is inferred from available evidence. These inferred treatment effect sizes are of lower quality than those gained from head-to-head comparisons of A and B.

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