TECHNICAL COMMENTARY

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Quality of care

Introduction

Quality of care refers to the standards of treatment provided to people with schizophrenia. This topic considers not only the availability of various types of treatment for people with a schizophrenia diagnosis, but also the factors influencing successful treatment outcomes in physical and mental health-care models.

Method

We have included only systematic reviews (systematic literature search, detailed methodology with inclusion/exclusion criteria) published in full text, in English, from the year 2000 that report results separately for people with a diagnosis of schizophrenia, schizoaffective disorder, schizophreniform disorder or first episode schizophrenia. Reviews were identified by searching the databases MEDLINE, EMBASE, CINAHL, Current Contents, PsycINFO and the Cochrane library. Hand searching reference lists of identified reviews was also conducted. When multiple copies of reviews were found, only the most recent version was included. Reviews with pooled data are given priority for inclusion.

Review reporting assessment was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist that describes a preferred way to present a meta-analysis[1]. Reviews with less than 50% of items checked have been excluded from the library. The PRISMA flow diagram is a suggested way of providing information about studies included and excluded with reasons for exclusion. Where no flow diagram has been presented by individual reviews, but identified studies have been described in the text, reviews have been checked for this item. Note that early reviews may have been guided by less stringent reporting checklists than the PRISMA, and that some reviews may have been limited by journal guidelines.

Evidence was graded using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) Working Group approach where high quality evidence such as that gained from randomised controlled trials (RCTs) may be downgraded to moderate or low if review and study quality is limited, if there is inconsistency in results, indirect comparisons, imprecise or sparse data and high probability of reporting bias. It may also be downgraded if risks associated with the intervention or other matter under review are high. Conversely, low quality evidence such as that gained from observational studies may be upgraded if effect sizes are large, there is a dose dependent response or if results are reasonably consistent, precise and direct with low associated risks (see end of table for an explanation of these terms)[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 low quality evidence suggests essential structural indicators for ensuring high quality health care delivery include the assessment of psychiatric and somatic comorbidity, length of hospitalisations, employment outcomes, and information exchange. Essential quality indicators for patient-related assessment of treatment outcomes include the frequency of access to psychiatric care, frequency of inpatient re-admission, frequency of antipsychotic polypharmacy, long-term monitoring of

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antipsychotic side effects, and frequency of involuntary admissions.

- Moderate to low quality evidence suggests inpatient education programs are helpful, particularly for learning about schizophrenia diagnosis and medication management. Programs that involve patients in the planning and detailing of information to make them more individualised are the most helpful.

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Kristiansen ST, Videbech P, Kragh M, Thisted CN, Bjerrum MB

Patients experiences of patient education on psychiatric inpatient wards; a systematic review

Patient Education and Counseling 2018; 101(3): 389-98

View review abstract online

Comparison	**Patient education given in psychiatric hospitals.** **The education consisted of 1 hour daily or less sessions, given over three to four weeks. The content covered diagnosis, prevalence, course of illness, treatment, medication management, psychosocial rehabilitation, self-management, well-being, daily activities, living in the society, community resources, stress management, and legal issues.**
Summary of evidence	**Moderate to low quality evidence (small to medium-sized sample, unable to assess consistency or precision, direct) suggests inpatient education programs are helpful, particularly for learning about schizophrenia diagnosis and medication management. Programs that involve patients in the planning and detailing of information to make them more individualised are the most helpful.**
Patient views on inpatient education	
1 study (N = 123) found 90% of patients experienced the education to be helpful. Learning about diagnosis and medication management was found most beneficial. Prevalence of schizophrenia, rehabilitation, and use of community resources were less important factors. Patients with low expectations towards participating in patient education reported higher dissatisfaction with the education experiences. 1 RCT (N = 311) assessed computer-based patient education, conventional patient education with leaflets, or patient education provided by nurses. The study found all programs were useful but could be improved by involving patients in the planning and detailing of information, making the programs more active and individualised. Patients were concerned about confidentiality with staff when using the computer-based program, but thought computers should be made available on the ward to seek information.	
Consistency in results‡	Unable to assess; no measure of consistency is reported.
Precision in results§	Unable to assess; no measure of precision is reported.
Directness of results‖	Direct

Weinmann S, Roick C, Martin L, Willich S, Becker T

Development of a set of schizophrenia quality indicators for integrated care

Epidemiologia e Psychiatria Sociale 2010; 1(19): 52-62

View review abstract online

Comparison	**Indicators for the quality of integrated health care for people with schizophrenia.** **This review assesses the factors influencing successful treatment outcomes and is ranked according to a panel of stakeholders and an external expert.**
Summary of evidence	**Moderate to low quality evidence (unclear sample sizes, unable to assess consistency or precision) suggests essential structural indicators for ensuring high quality health care delivery include: the assessment of psychiatric and somatic comorbidity; length of hospitalisations; employment outcomes; and information exchange.** **Essential quality indicators for patient-related assessment of treatment outcomes include: the frequency of access to psychiatric care; frequency of inpatient re-admission; frequency of antipsychotic polypharmacy; long-term monitoring of antipsychotic side effects; frequency of involuntary admissions.**

Structural indicators

Measured by mental health care "system indicators" and "patient case-mix indicators", describe important aspects of the care system and the framework of an integrated care delivery system

From 42 publications, 12 structural indicators were identified that enable efficient mental health care delivery;

Assessment of priority 1 indicators was deemed to be indispensible for ensuring efficient care models. Quantification of priority 2 indicators was deemed valuable, and Priority 3 indicators may be a useful addition.

Priority 1

Psychiatric comorbidity: indicator of the need for mental health care

Somatic comorbidity: indicator of the need for somatic health care

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Cumulative length-of-stay in psychiatric care, per year: indicator of illness severity Work in competitive setting: indicator of illness severity and the quality of vocational rehabilitation system Inpatient/outpatient information exchange: indicator of preexisting problems of information exchange, and inpatient-outpatient interface **Priority 2** Type of psychosis diagnosis and total inscription rate: voluntary inscription may indicate attractiveness of health care model Primary mental care provider: indicator of system success to offer specialist treatment Quality circles: indicator of presence of platform for quality management Uniform and consented criteria for admission and referral: indicate structured approach toward care Advance directives: explicit criteria to address patient preferences Self-help group: proxy for peer information exchange **Priority 3** Community psychiatric network: facilitating cooperation within psychiatric community
Quality indicators **"Patient-related", dealing with treatment processes and outcomes**
From 42 publications, 22 quality indicators were identified that deal with patient-level treatment processes; Assessment of priority 1 indicators was deemed to be indispensible for improving treatment outcomes. Quantifying priority 2 indicators was deemed valuable, and Priority 3 indicators may be a useful addition. Priority 1 indicators: Frequency of access to psychiatric care; frequency of inpatient re-admission; frequency of antipsychotic polypharmacy; long-term monitoring of antipsychotic side effects; frequency of involuntary admissions. Priority 2 indicators: Monitoring and treatment of somatic comorbidity; frequency of inadvertent loss to follow-up; maintenance of treatment following discharge; administration of problem-oriented psychotherapy and psychosocial treatments; case management; receipt of family therapy or psychoeducation; distribution of individual patient treatment plan to all therapists; patient involvement in treatment plan; receipt of self-management training; assessment of patient satisfaction and global function; monitoring of suicide attempts. Priority 3 indicators: Frequency of first-episode patients lost to follow-up; participation in vocational rehabilitation; frequency of prescription for second-generation antipsychotics.

Consistency in results	Unable to assess; no measure of consistency is reported.
Precision in results	Unable to assess; no measure of precision is reported.

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Directness of results	Not applicable

Explanation of acronyms

N = number of participants, RCT = randomised controlled trial

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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].

† Different effect measures are reported by different reviews.

Prevalence refers to how many existing cases there are at a particular point in time. Incidence refers to how many new cases there are per population in a specified time period. Incidence is usually reported as the number of new cases per 100,000 people per year. Alternatively some studies present the number of new cases that have accumulated over several years against a person-years denominator. This denominator is the sum of individual units of time that the persons in the population are at risk of becoming a case. It takes into account the size of the underlying population sample and its age structure over the duration of observation.

Reliability and validity refers to how accurate the instrument is. Sensitivity is the proportion of actual positives that are correctly identified (100% sensitivity = correct identification of all actual positives) and specificity is the proportion of negatives that are correctly identified (100% specificity = not identifying anyone as positive 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 moderate 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

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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 can provide an indirect indication of 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 effect across studies (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 represent 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[5];

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

§ 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, these 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 and is therefore 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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