TECHNICAL COMMENTARY

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Home-based care

Introduction

For people with schizophrenia, there are many options for receiving treatment, following an acute episode or in the longer term. For patients in more chronic or stable phases of illness, some interventions and treatments can be provided in a home environment. These types of interventions are integrated as part of a comprehensive treatment program in conjunction with ongoing medication.

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 prioritised 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 rated as having 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 or if there is a dose dependent response. We have also taken into account sample size and whether results are 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 one systematic review that met our inclusion criteria[3].

- High quality evidence suggests home-based crisis intervention increased rates of study retention in the medium term (6-12 months) and reduced family disruption, particularly in the short term, compared to standard care.
- Moderate quality evidence suggests crisis intervention may reduce rates of unsociable behaviour, agitation and disorientation, and may be associated with greater patient and relative satisfaction and lower family burden, compared to standard care.

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Murphy S, Irving CB, Adams CE, Driver R.

Crisis intervention for people with severe mental illnesses.

Cochrane Database of Systematic Reviews, 2012(5): p. CD001087

View review abstract online

Comparison	**Home-based care plus crisis intervention (24-hour emergency care) vs. standard care (hospitalisation); treatment duration 1-2 years.** **Note – this review includes samples of severe mental illness, of which patients with schizophrenia make up around 50%. The sample also includes patients with other psychotic disorders, neuroses, and depression. This review includes both patients and their families.**
Summary of evidence	**High quality evidence (large samples, consistent, precise, direct) suggests home-based crisis intervention increased rates of study retention in the medium term (6-12 months) and reduced family disruption, particularly in the short term compared to standard care.** **Moderate quality evidence (medium-sized samples, direct, unable to assess precision) suggests crisis intervention may improve symptoms, reduce rates of unsociable behaviour, agitation and disorientation, and may be associated with greater patient and relative satisfaction and lower family burden compared to standard care.**

Global state

A significant, small effect of fewer people leaving the home care + crisis intervention group in the medium term (6-12 months), with no significant differences between groups in the short term (3 month) or long term (20 months);

3 months: 3 RCTs, N = 463, RR = 0.80, 95%CI 0.55 to 1.15, $p = 0.23$, Q = 0.33, $p = 0.85$, $I^2 = 0\%$

6 months: 5 RCTs, N = 718, RR = 0.73, 95%CI 0.55 to 0.97, $p = 0.031$, Q = 2.14, $p = 0.71$, $I^2 = 0\%$

12 months: 4 RCTs, N = 594, RR = 0.74, 95%CI 0.56 to 0.98, $p = 0.036$, Q = 0.55, $p = 0.91$, $I^2 = 0\%$

20 months: 3 RCTs, N = 475, RR = 0.78, 95%CI 0.57 to 1.06, $p = 0.11$, Q = 0.72, $p = 0.70$, $I^2 = 0\%$

A significant, large effect of increased likelihood of failing to adhere to protocol with home care + crisis intervention, resulting in more hospital admissions;

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12 months: 5 RCTs, N = 713, RR = 51.79, 95%CI 14.92 to 179.86, $p < 0.0001$, Q = 1.34, $p = 0.85$, $I^2 = 0\%$

20 months: 2 RCTs, N = 306, RR = 67.69, 95%CI 9.48 to 483.15, $p < 0.0001$, Q = 0.99, $p = 0.32$, $I^2 = 0\%$

A significant effect of improved global state in the long term but not the medium term (Social Adjustment Scale endpoint scores) with home care + crisis intervention;

6 months: 1 RCT, N = 130, WMD = -0.20, 95%CI -0.75 to 0.35, $p = 0.48$

12 months: 1 RCT, N = 120, WMD = -0.30, 95%CI -0.85 to 0.25, $p = 0.29$

20 months: 1 RCT, N = 139, WMD = -0.60, 95%CI -1.15 to -0.05, $p = 0.032$

No significant difference between groups on Social Adjustment Scale change from baseline scores;

1 RCT, N = 127, WMD = -0.09, 95%CI -0.31 to 0.13, $p = 0.42$

No significant difference between groups on Global Assessment Scale endpoint scores;

3 months: 1 RCT, N = 27, WMD = 0.0, 95%CI -12.82 to 12.82, $p = 1.0$

6 months: 1 RCT, N = 129, WMD = 5.10, 95%CI -0.86 to 11.06, $p = 0.094$

12 months: 1 RCT, N = 131, WMD = 3.50, 95%CI -3.15 to 10.15, $p = 0.30$

20 months: 1 RCT, N = 142, WMD = 5.70, 95%CI -0.26 to 11.66, $p = 0.061$

No significant difference between groups on Global Assessment Scale change from baseline scores;

2 RCTs, N = 156, WMD = 4.17, 95%CI -1.56 to 9.89, $p = 0.15$, Q = 0.51, $p = 0.48$, $I^2 = 0\%$

No significant difference between groups for quality of life;

MANSA scale: 1 RCT, N = 226, WMD = -1.50, 95%CI -5.15 to 2.15, $p = 0.42$

EQ-5D scale: 1 RCT, N = 26, WMD = 0.01, 95%CI -0.32 to 0.34, $p = 0.95$

No significant difference between groups for avoiding repeat hospital admissions;

Including the index admission at 12 months: 3 RCTs, N = 465, RR = 0.71, 95%CI 0.31 to 1.61, $p = 0.41$, Q = 1.34, $p = 0.85$, $I^2 = 0\%$

Including the index admission at 20 months: 1 RCT, N = 188, RR = 1.10, 95%CI 0.75 to 1.60, $p = 0.63$

Excluding the index admission at 3 months: 1 RCT, N = 260, RR = 0.53, 95%CI 0.41 to 0.68, $p <$

0.001 Excluding the index admission at 6 months: 2 RCTs, N = 369, RR = 0.75, 95%CI 0.50 to 1.13, *p* = 0.17, Q = 4.99, *p* = 0.03, I^2 = 80% *No significant difference between groups for repeat hospital admissions due to involuntary admission (Mental Health Act);* 3 months: 1 RCT, N = 260, RR = 0.62, 95%CI 0.34 to 1.11, *p* = 0.11 6 months: 1 RCT, N = 258, RR = 0.69, 95%CI 0.43 to 1.11, *p* = 0.13
Mental state
A significant effect of improved symptoms (BPRS endpoint scores) in the long-term with home care + crisis intervention, with no differences between groups in the medium term; 3 months: 2 RCTs, N = 248, WMD = -4.03, 95%CI -8.18 to 0.12, *p* = 0.057, Q = 1.44, *p* = 0.23, I^2 = 31% 6 months: 1 RCT, N = 129, WMD = -2.10, 95%CI -6.40 to 2.20, *p* = 0.34 12 months: 1 RCT, N = 131, WMD = -2.00, 95%CI -6.03 to 2.03, *p* = 0.33 20 months: 1 RCT, N = 142, WMD = -4.50, 95%CI -8.68 to -0.32, *p* = 0.035 *No significant difference between groups on the Psychiatric Evaluation Form endpoint scores;* 3 months: 1 RCT, N = 118, WMD = 0.20, 95%CI -0.22 to 0.62, *p* = 0.35 6 months: 1 RCT, N = 111, WMD = 0.10, 95%CI -0.42 to 0.62, *p* = 0.71 12 months: 1 RCT, N = 97, WMD = -0.40, 95%CI -0.84 to 0.04, *p* = 0.074 20 months: 1 RCT, N = 100, WMD = 0.10, 95%CI -0.47 to 0.67, *p* = 0.73 *No significant difference between groups for depression:* 1 RCT, N = 120, RR = 0.80, 95%CI 0.57 to 1.13, *p* = 0.20 *No significant difference between groups for psychotic behaviour;* 1 RCT, N = 120, RR = 0.58, 95%CI 0.30 to 1.11, *p* = 0.10
Behaviour
A significant medium-sized effect of less unsociable behavior with home care + crisis intervention by 6 months, with no significant differences between groups at 3 months; 3 months: 1 RCT, N = 120, RR = 0.86, 95%CI 0.66 to 1.12, *p* = 0.25

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6 months: 1 RCT, N = 120, RR = 0.43, 95%CI 0.30 to 0.64, *p* = 0.000021

A significant, small effect of less agitation with home care + crisis intervention;

1 RCT, N = 120, RR = 0.59, 95%CI 0.36 to 0.95, *p* = 0.029

A significant, medium-sized effect of less disorientation with home care + crisis intervention;

1 RCT, N = 120, RR = 0.47, 95%CI 0.28 to 0.79, *p* = 0.0043

No significant difference between groups for aggression;

3 months: 1 RCT, N = 120, RR = 0.97, 95%CI 0.72 to 1.31, *p* = 0.85

6 months: 1 RCT, N = 120, RR = 0.70, 95%CI 0.39 to 1.25, *p* = 0.23

No significant difference between groups for substance abuse;

1 RCT, N = 120, RR = 0.67, 95%CI 0.33 to 1.36, *p* = 0.27

No significant difference between groups for withdrawal;

1 RCT, N = 120, RR = 0.72, 95%CI 0.48 to 1.07, *p* = 0.10

No significant difference between groups for social problems at 6 months (HoNOS scale);

1 RCT, N = 255, WMD = -0.60, 95%CI -2.07 to 0.87, *p* = 0.42

Family impact

A significant, medium-sized effect of less family burden with home care + crisis intervention;

3 months: 1 RCT, N = 120, RR = 0.57, 95%CI 0.41 to 0.80, *p* = 0.00098

6 months: 1 RCT, N = 120, RR = 0.34, 95%CI 0.20 to 0.59, *p* = 0.00013

A significant, small effect of less family disruption with home care + crisis intervention in the short term, but not in the medium term;

3 months: 2 RCTs, N = 220, RR = 0.76, 95%CI 0.59 to 0.97, *p* = 0.031, Q = 0.76, *p* = 0.38, I^2 = 0%

6 months: 2 RCTs, N = 220, RR = 0.67, 95%CI 0.37 to 1.21, *p* = 0.19, Q = 3.28, *p* = 0.07, I^2 = 69%

A significant, small effect of less social disruption with home care + crisis intervention in the short term, but not in the medium term;

3 months: 2 RCTs, N = 220, RR = 0.69, 95%CI 0.53 to 0.91, *p* = 0.0083, Q = 1.12, *p* = 0.29, I^2 = 10% 6 months: 2 RCTs, N = 220, RR = 0.72, 95%CI 0.43 to 1.22, *p* = 0.23, Q = 3.88, *p* = 0.05, I^2 = 74% *A significant, small effect of less physical illness due to the patient's illness with home care + crisis intervention in the short term and medium term;* 3 months: 1 RCT, N = 100, RR = 0.78, 95%CI 0.65 to 0.95, *p* = 0.012 6 months: 1 RCT, N = 100, RR = 0.71, 95%CI 0.55 to 0.92, *p* = 0.010 *No significant difference between groups for financial strain;* 3 months: 1 RCT, N = 120, RR = 0.76, 95%CI 0.52 to 1.10, *p* = 0.15 6 months: 1 RCT, N = 120, RR = 0.84, 95%CI 0.53 to 1.33, *p* = 0.45 *No significant difference between groups for employment by 20 months;* 1 RCT, N = 189, RR = 0.97, 95%CI 0.85 to 1.12, *p* = 0.72 *No significant difference between groups for homelessness;* 1 RCT, N = 113, RR = 1,23, 95%CI 0.59 to 2.57, *p* = 0.58 *No significant difference between groups for arrests;* 6 months 1 RCT, N = 111, RR = 5.36, 95%CI 0.28 to 101.35, *p* = 0.26 12 months: 1 RCT, N = 120, RR = 0.71, 95%CI 0.46 to 1.12, *p* = 0.14 *No significant difference between groups for use of emergency services;* 12 months: 1 RCT, N = 120, RR = 0.81, 95%CI 0.43 to 1.54, *p* = 0.52
Treatment satisfaction
A significant effect of greater patient satisfaction with home care + crisis intervention; Perceived improvement: 1 RCT, N = 119, RR = 0.48, 95%CI 0.31 to 0.74, *p* = 0.00086 Treatment satisfaction: 1 RCT, N = 119, RR = 0.66, 95%CI 0.50 to 0.88, *p* = 0.0040 Treatment preference: 1 RCT, N = 119, RR = 0.46, 95%CI 0.27 to 0.77, *p* = 0.0035 Perceived ability to cope: 1 RCT, N = 119, RR = 0.36, 95%CI 0.21 to 0.62, *p* = 0.00028 Satisfaction Scale, 3 months: 1 RCT, N = 226, WMD = 1.60, 95%CI -0.22 to 3.42, *p* = 0.085

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Satisfaction Scale, 6 months: 1 RCT, N = 115, WMD = 5.10, 95%CI 3.16 to 7.04, $p < 0.00001$ Satisfaction Scale, 12 months: 1 RCT, N = 121, WMD = 4.80, 95%CI 3.11 to 6.49, $p < 0.00001$ Satisfaction Scale, 20 months: 1 RCT, N = 137, WMD = 5.40, 95%CI 3.91 to 6.89, $p < 0.00001$ *A significant effect of greater relative satisfaction with home care + crisis intervention;* 3 months: 1 RCT, N = 120, RR = 0.63, 95%CI 0.44 to 0.89, $p = 0.0083$ 6 months: 1 RCT, N = 120, RR = 0.57, 95%CI 0.42 to 0.78, $p = 0.00045$ 12 months: 1 RCT, N = 120, RR = 0.46, 95%CI 0.29 to 0.72, $p = 0.00069$ *No significant difference between groups for out-of-hours assistance;* 1 RCT, N = 119, RR = 1.48, 95%CI 0.88 to 2.48, $p = 0.14$
Death and homicide
No significant difference between groups; Any cause: 6 RCTs, N = 980, RR = 0.88, 95%CI 0.37 to 2.07, $p = 0.76$, $I^2 = 0\%$ Natural cause: 6 RCTs, N = 980, RR = 0.63, 95%CI 0.18 to 2.24, $p = 0.48$, $I^2 = 0\%$ Suicide/suspicious death: 6 RCTs, N = 980, RR = 1.06, 95%CI 0.36 to 3.11, $p = 0.92$, $I^2 = 0\%$ Attempted suicide: 3 RCTs, N = 369, RR = 2.62, 95%CI 0.21 to 32.02, $p = 0.45$, $I^2 = 70\%$ Homicide: 3 RCTs, N = 568, RR = 2.96, 95%CI 0.31 to 28.28, $p = 0.35$

Consistency in results‡	Consistent where applicable (>1 RCT).
Precision in results§	Precise for study attrition, social function, overall burden and treatment satisfaction; all other outcomes are imprecise or not assessable (WMD are not standardised).
Directness of results‖	Direct

Explanation of acronyms

BPRS = Brief Psychiatric Rating Scale, CI = Confidence Interval, I^2 = the percentage of the variability in effect estimates that is due to heterogeneity rather than sampling error (chance), N = number of participants, p = statistical probability of obtaining that result ($p < 0.05$ generally regarded as significant), Q = Q statistic for the test of heterogeneity, RCT = randomised controlled trial, RR = risk ratio, vs = versus, WMD = weighted mean difference

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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[4].

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† 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) which 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. Less than 0.4 represents a small effect, around 0.5 a medium effect, and over 0.8 represents a large effect[4].

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[5]. 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[4];

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

§ 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[6].

‖ 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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References

1. Moher D, Liberati A, Tetzlaff J, Altman DG, PRISMAGroup. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *British Medical Journal* 2009;151(4):264-269.
2. GRADEWorkingGroup. Grading quality of evidence and strength of recommendations. *British Medical Journal* 2004;328:1490.
3. Murphy S, Irving CB, Adams CE, Driver R. Crisis intervention for people with severe mental illnesses. *Cochrane Database of Systematic Reviews* 010712 2012(5).
4. CochraneCollaboration. Cochrane Handbook for Systematic Reviews of Interventions. 2008: Accessed 24/06/2011.
5. Rosenthal JA. Qualitative Descriptors of Strength of Association and Effect Size. *Journal of Social Service Research* 1996/10/11 1996;21(4):37-59.
6. GRADEpro. [Computer program]. Jan Brozek, Andrew Oxman, Holger Schünemann. *Version 32 for Windows* 2008.