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Protocol for a systematic review of telephone delivered psychosocial interventions on relapse prevention, adherence to psychiatric medication and health risk behaviours in adults with a psychotic disorder

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Abstract

Introduction The mental and physical health of individuals with a psychotic illness are typically poor. When adhered to, medication can reduce relapse. However, despite adherence, relapse remains common and functional outcomes often remain compromised. Compliance is also typically low. Cardiovascular-related morbidity and mortality is also elevated, along with several important modifiable health risk behaviours. Access to psychosocial interventions is therefore important, but currently limited. Telephone delivered interventions represent a promising solution, although further clarity is needed. Accordingly, we aim to provide an overview and critical analysis of the current state of evidence for telephone delivered psychosocial interventions targeting key health priorities in adults with a psychotic disorder, including (1) relapse, (2) adherence to psychiatric medication and/or (3) modifiable cardiovascular health risk behaviours.

Methods and analysis Our methods are informed by published guidelines. The review is registered and any protocol amendments will be tracked. Ten electronic peer-reviewed and four grey literature databases have been identified. Preliminary searches have been conducted for literature on psychosocial telephone interventions targeting relapse, medication adherence and/or health risk behaviours in adults with a psychotic disorder. Articles classified as 'evaluation' will be assessed against standardised criteria and checked by an independent assessor. The searches will be re-run just before final analyses and further studies retrieved for inclusion. A narrative synthesis will be reported, structured around intervention type and content, population characteristics and outcomes. Where possible, 'summary of findings' tables will be generated for each comparison. For the primary outcome of each trial, when data are available, we will calculate a risk ratio and its 95% CI (dichotomous outcomes) and/or effect size according to Cohen's formula (continuous outcomes).

Ethics and dissemination No ethical issues are foreseen. Findings will be disseminated widely to clinicians and researchers via journal publication and conference presentation(s).

Keywords
psychotic, risk, behaviours, protocol, systematic, review, telephone, delivered, adults, psychosocial, health, interventions, relapse, prevention, adherence, psychiatric, disorder, medication

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ABSTRACT

Introduction: The mental and physical health of individuals with a psychotic illness are typically poor. When adhered to, medication can reduce relapse. However, despite adherence, relapse remains common and functional outcomes often remain compromised. Compliance is also typically low. Cardiovascular-related morbidity and mortality is also elevated, along with several important modifiable health risk behaviours. Access to psychosocial interventions is therefore important, but currently limited. Telephone delivered interventions represent a promising solution, although further clarity is needed. Accordingly, we aim to provide an overview and critical analysis of the current state of evidence for telephone delivered psychosocial interventions targeting key health priorities in adults with a psychotic disorder, including (1) relapse, (2) adherence to psychiatric medication and/or (3) modifiable cardiovascular health risk behaviours.

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Trial registration number: PROSPERO CRD42015025402.

INTRODUCTION

Psychotic illnesses (eg, schizophrenia spectrum and bipolar disorder) are chronic, relapsing conditions characterised by distortions in thinking, perception and emotional response.1 These symptoms can have a profound impact on quality of life and functioning.2 Psychotic illnesses are also associated with a mortality rate double that of the general population3 4 and a shortening of life expectancy by up to 19 years.5 Cardiovascular disease (CVD) is the single largest cause of death among this group, accounting for more premature deaths than suicide.6 8 Rates of major health risk behaviours associated with CVD (smoking, physical inactivity, alcohol use and low fruit and vegetable intake) are all higher in people living with psychotic illnesses.9 12 Furthermore, second generation antipsychotics (SGA), which are commonly used in the treatment of psychotic illnesses, are also associated with a range of serious metabolic side effects, including changes in body weight, glucose utilisation and lipid status.13

The well-being of individuals with psychotic illnesses is further compromised by poor access to treatment. Although SGAs can reduce relapse,14 rates of non-compliance are as high as 50%.15 A large scale study has also found that almost three-quarters of...
participants diagnosed with schizophrenia chose to discontinue their medication within 18 months.\(^{16}\) Furthermore, for those individuals who are compliant and do benefit from medication, they often continue to experience difficulties within important psychosocial domains (eg, employment, social function) and continue to relapse.\(^{2,14}\) This points to the importance of psychosocial interventions as an adjunct to traditional medication management.

Cognitive-behavioural therapy (CBT) is one of the most researched psychosocial interventions in psychosis. CBT is associated with small to moderate positive effects for a range of psychotic symptomatology and accompanying difficulties\(^{17,18}\) and also demonstrates promise as an option for improving adherence to antipsychotic medication.\(^{19}\) Furthermore, increasing evidence supports the role of CBT alone, or in combination with, other psychosocial approaches (eg, motivational interviewing) for modifying health risk behaviours among individuals with psychosis.\(^{20–22}\) However, despite psychosocial interventions like CBT being recommended by Australian,\(^{23}\) UK,\(^{24,25}\) and other international clinical guidelines\(^{26,27}\) for the treatment of schizophrenia and other psychotic disorders, of those likely to benefit, only 10% or less have access.\(^{28–30}\) Barriers to access include availability of trained clinicians, accessibility of support services, embarrassment and perceived stigma associated with seeking help.\(^{28–30}\) Given the limitations of medication management, improving access to psychosocial interventions represents an important priority for enhancing the well-being of individuals living with a psychotic illness.

**Why it is important to do this review**

Technology-based interventions represent a promising avenue for improving access to healthcare. Indeed, a recent systematic reviews points to the acceptability and feasibility of telephone delivered interventions (alone, or in combination with other remote access technology) within schizophrenia.\(^{31}\) However, this review was restricted to schizophrenia and did not focus on psychosocial interventions or summarising the evidence for key health priorities. Given that the problems seen in schizophrenia surrounding relapse, SGA compliance, CVD and treatment access are also shared by other psychotic disorders, in this systematic review we aim to provide an overview and critical analysis of the current state of evidence for psychosocial telephone delivered interventions targeting key health priorities in adults with a psychotic disorder, including (1) relapse, (2) adherence to psychiatric medication and/or (3) modifiable cardiovascular health risk behaviours.

**Objectives**

The following three questions will be addressed. For adults with a psychotic disorder:

1. Do telephone delivered psychosocial interventions targeting (1) relapse, (2) adherence to psychiatric medication and/or (3) modifiable cardiovascular health risk behaviours result in changes to:
   
   A. Indicators of relapse, including psychiatric symptomatology (positive and negative symptoms, depression, anxiety), the number and duration of hospitalisations, functioning and quality of life
   
   B. Medication adherence, including dose count (doses taken); dose days (days where correct number of doses taken); dose time (doses taken on schedule)
   
   C. Health behaviours (eg, smoking, substance use, physical activity, fruit and vegetable consumption)
   
   D. Severity of cardiovascular disease (CVD) risk, including CVD risk index; quantity, severity of CVD risk factors (eg, weight, body mass index (BMI), waist circumference, blood pressure, plasma lipids, insulin and glucose)

2. Is the effect of telephone delivered psychosocial interventions targeting (1) relapse, (2) adherence to psychiatric medication and/or (3) modifiable cardiovascular health risk behaviours on the above listed treatment outcomes influenced by:
   
   A. other intervention components (eg, individual and/or group face-to-face components; supplementary materials; other technology)
   
   B. implementation factors (staff training; intervention fidelity, treatment engagement/adherence)
   
   C. process measures/mediators/mechanisms (eg, cognitive (empowerment/self-efficacy/motivation); behavioural (eg, active coping, including managing urges); relational (eg, therapeutic alliance))

3. What is the evidence for the feasibility of telephone delivered psychosocial interventions for relapse prevention, adherence to psychiatric medication and/or health risk behaviours, including commentary on economic outcomes and service user and/or provider satisfaction.

**METHODS AND ANALYSIS**

This systematic review will be informed by published guidelines\(^{32}\) and reported according to the Preferred Reporting Items for Systematic Review and Meta-analysis (PRISMA).\(^{33}\)

**Eligibility criteria**

Eligibility of papers for inclusion in the review will be informed by inclusion and exclusion criteria applied to each of the following domains: types of studies, types of participants, types of interventions and comparison conditions, and the outcome measures assessed. Inclusion and any exclusion criteria within each of these domains is described in turn below:

**Types of studies**

In accordance with the objective of providing an overview of the current evidence for telephone delivered
interventions in adults with a psychotic disorder, liberal design criteria will be adopted. The following designs will be included—randomised controlled trials (cluster and parallel design); cross-over trial; case series or case-controls; one-arm trial; non-randomised trials; cross-sectional or cohort studies and case reports. As broad inclusion criteria may increase risk of bias, this will be assessed using the Collaboration’s Risk of Bias tool, as described in the Cochrane Handbook for Systematic Review of Interventions (32 detailed under risk of bias assessment below). Qualitative only designs will not be included.

Types of participants

Studies that include adults (>18) with a psychotic disorder, as defined by any criteria will be included. Diagnosis of study participants may be self-reported or confirmed via clinical interview. Study participants may be residing in the community, rehabilitation, treatment and/or correctional facility. We will include studies with populations involving adults with non-psychotic disorders only if more than 50% had a psychotic disorder, or if data limited to those with psychotic disorders are available.

In order to better inform research and clinical care, we intend to describe the clinical state (acute vs postacute vs partial remission vs remission), stage (eg, first episode vs early illness vs persistent) and whether the studies target particular clinical presentations (eg, negative symptoms, positive symptoms, treatment-resistant illnesses).

Types of interventions

The intervention of interest is telephone support targeting (1) relapse prevention, (2) adherence to psychiatric medication and/or (3) modifiable health risk behaviours.

‘Relapse prevention’ will be defined as telephone support designed to recognise and act on early warning signs of episode recurrence and/or enhance coping strategies (including medication compliance), the number and duration of hospitalisations and/or the impact of the illness on functioning and/or quality of life.

‘Adherence to psychiatric medication’ will be defined as telephone support intended to affect adherence with prescribed, self-administered medication for mental disorders. Ethical standards for adherence research dictate that attempts to increase adherence must be judged by their clinical benefits, not simply their effects on adherence rates. Accordingly, adherence studies will only be included if both adherence and treatment effects are measured.

‘Modifiable health risk behaviours’ will be defined as telephone support that targets health behaviours (nutrition, physical activity, smoking and substance use) associated with modifiable cardiovascular risk factors (weight, cholesterol, blood glucose and blood pressure).

To be included, the telephone support must:

1. Be administered over the telephone using person delivered (professional or layperson) spoken word (ie, text, web-based and/or automated systems collecting or transmitting data will not be included)
2. Utilise one or more psychological strategies to modify relapse risk, adherence to psychiatric medication and/or health risk behaviours. Psychological strategies will be defined as supportive counselling, psychoeducation (including brief advice), cognitive behavioural (including problem solving, dialectical behavioural therapy, acceptance and commitment therapy), mindfulness and/or motivational interviewing
3. Comprise at least one telephone session, of at least 10 min, delivered by a healthcare professional and/or non-professional/layperson/peer/consumer who has been trained in delivering the intervention

The telephone support may be a standalone intervention and/or delivered in combination with other treatment components, including pharmacological. However, studies with multiple components will only be included if the telephone is the predominant method of intervention delivery. This is defined as studies in which at least 50% of the total number of participant contacts are conducted by telephone. Interventions delivered in any setting (eg, community, hospital, rehabilitation or residential treatment centre, etc) will be included.

Types of comparison conditions

The telephone support may be compared to inactive (eg, standard care, waiting list control) and/or active controls (eg, pharmacological and/or psychological) whereby telephone is not the predominant method of intervention delivery (eg, individual, group or internet).

Types of outcome measures

1. Indicators of relapse, including psychiatric symptomatology (positive and negative symptoms, depression, anxiety), the number and duration of hospitalisations, functioning and quality of life
2. Medication adherence, including dose count (doses taken); dose days (days where correct number of doses taken); dose time (doses taken on schedule)
3. Health behaviours (eg, smoking, substance use, physical activity, fruit and vegetable consumption)
4. Severity of cardiovascular risk, including CVD risk index; quantity, severity of CVD risk factors (eg, weight, BMI, waist circumference, blood pressure, plasma lipids, insulin, glucose)
5. Treatment engagement (eg, quantity/frequency/duration of telephone support attendance)
6. Process measures/mediators/mechanisms (eg, cognitive (empowerment/self-efficacy/motivation); behavioural (eg, active coping, including managing urges); process (eg, therapeutic alliance))
7. Feasibility, including economic outcomes (eg, cost, resource use, cost-effectiveness) and/or satisfaction/
publications will be organised in reference manager
ally searched to identify any additional publications. All
tion year. Publications must be available in English.
terms are included. No limits will be placed on publica-
subject headings will be exploded so that narrower
Steps:

Step 1: identification of studies for exclusion
AKB will review the titles and/or abstracts and exclude articles if they: (1) are duplicates, (2) do not focus on
defined as an evaluation of a telephone
delivered intervention as per the PICO criteria outlined
above; (2) Reviews, including summaries, descriptive, crit-
cal and/or systematic reviews; Discussion, defined as
general discussion of telephone delivered interventions,
including development, principles, methods and imple-
menation. References that are not evaluation, review or
discussion papers (eg, treatment manuals) will classified
as ‘Other’.

Step 3: cross checking
Publications from step two will be reclassified by AB, for
cross-checking. In case of disagreement, the final classifi-
cation will be made by consensus, with the involvement
of GH, PK, KB and/or SB. The articles excluded in step
two will be retained for further examination.

Data extraction from evaluation studies
Data extraction will be performed by AB and checked
by AT. Extraction forms will be piloted on several papers
and modified as needed before use. When multiple
reports of the same study are identified (eg, related
journal articles, conference proceedings which are then
published), data from each report will be extracted sep-
ately and then combined across multiple data collec-
tion forms. Methodological critique and assessment of
risk of bias will be performed independently by AB and
AT. In the event of disagreement, final ratings will be
made via consensus, following discussion with GH, PJK,
KB and/or SB. In the event that inadequate trial details
are reported, study authors will be contacted no more
than twice to obtain further information.

To enable methodological critique of both observa-
tional research and RCTs, criteria for data extraction will
be adapted from the Downs and Black Scale39 and the
Cochrane Handbook for Systematic Reviews and
include
1. Participant information, including n-values at each
stage of the study (and reasons for non-
participation), treatment setting, eligibility criteria,
descriptive data including age, gender, ethnicity,
socioeconomic status, diagnostic criteria and treat-
ment history
2. Methods, including study design, country, setting(s),
methodological limitations reported, methodological
limitations observed (eg, recruitment allocation and
data collection methods; blinding; comparability of
groups at baseline; appropriateness of analysis
methods)
3. Interventions, including number of groups, duration
of treatment (number, frequency and duration of
phone and non-phone components), delivery
method(s), description of control intervention(s)
4. Primary and secondary outcomes, including data col-
collection sources/methods, percentage of treatment
sessions attended, other process measures/

Information sources
Search strategy
Consistent with methods detailed in Cochrane
Guidelines for systematic reviews,32 the search strategy
will be conducted as follows. First, in May 2015 we identi-
fi ed 10 relevant scientific electronic databases
(MEDLINE, PubMed, EMBASE, CINAHL, Science
Direct, Wiley, PsychInfo, Central, Amed, Scopus) and
four electronic non-scientific databases (Translating
Research into Practice; Virginia Commonwealth
University; Project Cork; Prevention, Information and
Evidence Library) to search. Search terms related to
telephone will be combined with psychosis-related
search terms and then outcome-related search terms
(see online supplementary appendix 1 for the full
MEDLINE search strategy).

Abstract, title, key words and subject headings specific
to each of the identified database will be searched. All
subject headings will be exploded so that narrower
terms are included. No limits will be placed on publica-
tion year. Publications must be available in English.
Reference lists of identified publications will be manu-
ally searched to identify any additional publications. All
publications will be organised in reference manager
Endnote. The searches will be re-run just before final
analyses and further studies retrieved for inclusion.

Classification of studies
The titles and abstracts of identified references will be
classified in a three-step process.

Step 1: identification of studies for exclusion
AKB will review the titles and/or abstracts and exclude articles if they: (1) are duplicates, (2) do not focus on
adults with a psychotic disorder, (3) do not focus on
telephone delivered support, or (4) if the outcomes,
process and/or predictor variables do not include or
specifically relate to relapse, medication adherence
and/or health behaviours, (5) are not journal articles,
reports, book chapters or newsletter articles. If eligibility
is unclear from the title and/or abstract, the full text
article will be accessed and assessed.

Step 2: classification of studies
The abstracts and/or full text of the remaining studies
will be examined by AKB to identify studies that are: (1)
Evaluation, defined as an evaluation of a telephone


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mediators/mechanisms, economic outcomes, satisfaction-related qualitative outcomes, follow-up period

5. Results, including indicators of relapse, medication adherence, health behaviours, severity of cardiovascular risk, treatment engagement, process measures/mediators/mechanisms, economic outcomes and patient satisfaction collected at all available follow-up time points.

Methodological critique of evaluation research
To provide a thorough overview of the literature we will implement procedures to evaluate the quality of both observational studies and RCTs. A narrative synthesis of the findings from the included studies will be reported, structured around intervention type and content, population characteristics, and outcomes. This qualitative review will be supplemented with the following quantitative measures.

For observational studies, methodological quality will be assessed against the Downs and Black Scale. Criteria will be assigned a yes (1 point); no (0 points); or unclear (0 points) rating. All criteria will have the same weight, and a quality score ranging from 0 to 8 points will be calculated for each study.

For RCTs, methodological quality will be assessed against the 11-item Physiotherapy Evidence Database (PEDro) scale. Consistent with published reviews of psychological interventions, two items regarding blinding of participants and therapists will not be scored in the present review, as these criteria are not appropriate for the studies under review. The remaining nine criteria will be assigned a assigned a yes (1 point) or no (0 points) rating, and a quality score ranging from 0 to 8 points will be calculated for each study (as item one is not included in the quality score).

Risk of bias will also be assessed using the Collaboration’s Risk of Bias tool, as described in the Cochrane Handbook for Systematic Review of Interventions.

We will judge each item as being high, low or unclear risk, as per the criteria provided by Higgins and Green and provide a quote from the study report and a justification for our judgement for each item in the risk of bias table. Given that growing empirical evidence suggests that sequence generation and allocation concealment are particularly important potential sources of bias, studies will be deemed to be at the highest risk of bias if either item is scored as ‘high’ or ‘unclear’.

Measures of treatment effect
Where possible, ‘summary of findings’ (SOF) tables will be generated for each comparison (phone vs multicomponent phone; phone vs other active control; phone vs other inactive control). SOF tables will provide key information regarding evidence quality, the magnitude of effect of the interventions examined, and a summary of available data on the outcome variables defined under ‘Outcome Measures’ above.

Scale-derived data
We intend to include continuous data from rating scales only if:
A. The psychometric properties of the instrument have been described in a peer-review journal
B. The instrument was not written or modified by one of the authors for that particular trial
C. The instrument was self-report or completed by an independent assessor (in the event that this is not clearly reported, a note will be made in ‘Description of Studies’)

Data presented in graphs and figures
Where possible, we intend to extract data that is only represented in graphs and figures, but only if the same result(s) are independently derived by AB and AT.

Dichotomous outcome measures
When data are available, a risk ratio (RR) and its 95% CI will be provided for the primary outcome of each trial. RR has been selected in preference to ORs as evidence suggests that RR is more intuitive and clinicians tend to misinterpret ORs as RR.

Continuous outcome measures
When data are available, effect sizes will be calculated according to Cohen’s formula, to allow for comparison across studies. Effect sizes will be interpreted according to published guidelines, where 0.2–0.49 is defined as a small effect size, 0.5–0.79 is moderate and greater than 0.8 is large.

A study will be considered to have a positive outcome if at least 50% of reported outcomes demonstrate a between-group difference in favour of the telephone support group at the end of the intervention. Positive maintenance outcome(s) will be evidenced when this effect is also evident at short and/or medium and/or long-term follow-up (defined as 1–6; 7–12 and >12 months after intervention completion, respectively). We anticipate there will be limited scope for meta-analysis due to the range of different outcome measures.

ETHICS AND DISSEMINATION
As no primary data collection will be undertaken, no formal ethical assessment is required.

We plan to present the findings of this systematic review for peer-review in an appropriate journal. We also intend to present to clinicians and researchers at appropriate conferences.

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Contributors AB is the guarantor of the review protocol and wrote the draft protocol for the systematic review. All authors made substantial contributions to the conception and design of this protocol, revising it critically for important intellectual content and gave final approval of the version to be published. All authors agree to be accountable for all aspects of the work to ensure that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Competing interests AKB, AB, AT and PJ&amp;C have no competing interests to declare. SB, KB and GH are current grant holders for a mobile application delivered CBT intervention for early psychosis (Medical Research Council: R116900).

Patient consent Not obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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REFERENCES

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References
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