Case Report

To Evaluate the Effectiveness of Physical Health Assessment Programmes for Mental Health Nurses and the Impact on Knowledge, Skills and Attitudes in Providing for the Physical Health Needs of Patients with Bipolar Disorder

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Abstract

Background & Purpose: People with bipolar disorder have poorer health outcomes compared to the general population. The research literature suggests that lower levels of physical health associated with mental illness are due to inadequate quality of care. Mental health nurses are well placed to provide for the physical health assessment and physical health needs of their patients. This systematic review sought to evaluate the effectiveness of physical health assessment programmes for mental health nurses and the impact on their knowledge, skills and attitudes in providing for the physical health needs of patients with bipolar disorder.

Methods: This systematic review was guided by methodological procedures according to the Cochrane Handbook for Systematic Reviews of Interventions.

Conclusion: None of the studies assessed met the inclusion criteria of this review. Consequently, we were unable to determine the effectiveness of physical health assessment programmes for mental health nurses and the impact on their knowledge, skills and attitudes in managing the physical health needs of patients with bipolar disorder.

Implications: Given the extent and impact of the problem and the absence of evidence, this review highlights the need for research in this area. We suggest the need for the development of physical health assessment programmes/tools for mental health nurses and suggest that the effectiveness of those programmes/tools are evaluated using a randomised controlled trial research design and outcomes measured should pertain to the level of the mental health nurse as well as participating patients.

Introduction

Bipolar disorder is a serious mental illness. Worldwide estimates of the prevalence of bipolar disorder vary but in 2017 an estimated 46 million people in the world had bipolar disorder [1]. It is a leading cause of premature death and although early mortality in bipolar disorder is often associated with suicide, it is also due to an increased prevalence of serious physical health co-morbidities such as metabolic and cardiovascular diseases [2]. People with serious mental illness, to include bipolar disorder, die, on average, 25 years earlier than the general population and 60% of this early mortality is attributed to medical conditions [3].

Despite evidence of higher physical health comorbidities and excessive mortality (Smith et al. 2013) there is also evidence of a dearth of management strategies to address and meet the physical health needs of people with bipolar disorder [4]. Service providers must have knowledge, skills and attitudes required to develop and implement prevention, detection and treatment strategies essential in improving physical health care provision and prognosis [3].

To that end, it is suggested that mental health nurses are well placed to assess and monitor the physical health needs of their service users [5,6], to include bipolar disorder patients but where is the evidence to support this view? To date, no systematic review

has been undertaken to evaluate the effectiveness of physical health assessment programmes for mental health nurses and the impact on knowledge, skills and attitude in providing for the physical health needs of patients with bipolar disorder.

Objective: To evaluate the effectiveness of physical health assessment programmes for mental health nurses and the impact on knowledge, skills and attitude in providing for the physical health needs of patients with bipolar disorder.

Research design: A systematic review guided by methodological procedures according to the Cochrane Handbook for Systematic Reviews of Interventions [Ref: Handbook].

Methods

Types of studies

We included Randomised Controlled Trials (RCTs).

Types of participants

Participants were mental health nurses caring for people with a clinical diagnosis of bipolar disorder. There was no restriction on gender, ethnicity or care setting. Participating nurses could be registered mental health nurses only or may have a dual qualification i.e., have trained and registered as a mental health and general nurse. Please note that in the context of this review, reflecting international literature, the terms, patient, service user, client, consumer or survivor may be used interchangeably.

Types of interventions

We included all physical health assessment programmes/ physical health assessment tools devised for or adapted for mental health nurses so that they could provide for the physical health needs of their patients with bipolar disorder. We included primary and secondary physical health assessment programmes. For the purpose of this review, we defined primary physical health assessment as the prevention of physical health co-morbidities in people with bipolar disorder and secondary prevention as the treatment of established physical health co-morbidities in people with bipolar disorder.

Comparator interventions

We planned to include the following comparators:

1. Treatment as usual also known as usual care;

2. No intervention.

Types of outcome measures

Outcomes measured in this review were aimed at the level of the mental health nurse:

Primary outcomes

1. Change in Knowledge pertaining to the physical health needs of people with bipolar disorder

2. Change in physical health monitoring skills. The physical health assessment domains outlined here were guided by the 2020 National Institute for Health and Care Excellence (NICE) [7] physical health monitoring guidelines for bipolar disorder and include the following:

- Weight or body mass index (BMI), diet, nutrition status and level of activity

- Cardiovascular status, including pulse and blood pressure

- Metabolic status inclusive of fasting blood glucose, glycosylated haemoglobin (HbA1c) and blood lipid profile

- Liver function

- Renal and thyroid function, and calcium levels for people taking long term lithium

3. Changes in attitude in terms of understanding the need to know and meet the physical health needs of people with bipolar disorder

Secondary outcomes

1. Integration of physical health assessment / physical health tools into clinical practice and care planning

Search methods for identification of studies

Search methods

We searched the below electronic databases on the date shown (6 dates: 06/11/20-10/12/20): Embase; Cochrane database; PubMed; Proquest; Scopus; Cinahl; Ovid MEDLINE; DART; Lenus. We did not place any restrictions on date published, language, or publication status. No start dates were defined, allowing the search to cover all years up to Nov/Dec 2020. Grey literature identified through these sources included theses identified through the DART-Europe E-theses portal and Lenus (Irish thesis portal). These grey sources were downloaded for screening as usual. The reference lists of identified papers and systematic reviews were examined, to identify further screening options. All identified papers were downloaded (either from the database or Google Scholar as needed) and titles were uploaded to Covidence. Details of the search undertaken for this review are presented in Table 1.

Database	Results	Notes
TOTAL EXTRACTED	**101**	**96 titles were added to Covidence (5 excluded: thesis or public health document (no citation found)**
Embase (06/11/20)		
('bipolar disorder'/exp OR 'bipolar disorder') AND health AND screening AND tools	1706	
('bipolar disorder'/exp OR 'bipolar disorder') AND physical AND health	-	
(mental health nurses or psychiatric nurses or psych nurses) AND (physical health or physical wellbeing or physical illness or physical health problems) AND (standard care or usual care)	1287	* 24 results (once bipolar is specified) * 20 excluded (2 duplicates; 12 not related to bipolar; 1 not related to physical health; 1 review protocol; 4 focused on nurse attitudes not practices)
mental health nurses AND (physical health) AND standard care	199	* 5 results (once bipolar is specified) * All 5 excluded (1 not related to bipolar; 2 not reporting screening methods; 1 review protocol; 1 opinion piece/lit review)
bipolar AND primary care AND (physical health screening)	46	
'bipolar + mhn + physical health' OR (bipolar AND mhn AND + AND physical AND ('health'/exp OR health))	36	
('bipolar disorder'/exp OR 'bipolar affective disorder' OR 'bipolar and related disorders' OR 'bipolar disorder' OR 'bipolar illness' OR 'bipolar psychosis' OR 'depression, manic' OR 'manic depression' OR 'manic depression psychosis' OR 'manic depressive' OR 'manic depressive disease' OR 'manic depressive disorder' OR 'manic depressive illness' OR 'manic depressive psychosis' OR 'manic depressive reaction' OR 'manic depressive syndrome' OR 'maniodepressive psychosis' OR 'mano depressive syndrome' OR 'psychosis, manic depressive' OR 'adult'/exp OR 'child'/exp) AND ('non pharmacological' OR 'physical health score'/exp) AND ('usual care'/exp OR 'standard care') AND ('bmi'/exp OR 'body mass'/exp OR 'quality of life'/exp OR 'hrql' OR 'health related quality of life' OR 'life quality' OR 'quality of life')	16	16 excluded (not studying bipolar disorder)
Cochrane Issue 11, Nov 2020 (12/11/20)		
bipolar disorder	2669 results	(23 reviews; 2646 trials)
bipolar disorder + nursing	9 results	* 2 extracted into folder
bipolar disorder + physical assessment	0 results	
bipolar disorder + Physical Component Summary of the Short Form-36 Health Survey	0 results	
bipolar (adult; child) + non-pharmacological interventions + usual care + BMI	0 results	
bipolar (adult; child) + non-pharmacological interventions + usual care + quality of life	0 results	

bipolar (adult; child) + non-pharmacological interventions	2 results	* 1 excluded (pharmacological maintenance only); 1 is previous review by your group
PubMed (19/11/20)		
(bipolar disorder) AND (physical health intervention)	908 results	
(bipolar disorder) AND (physical health assessment)	608 results	
Proquest (26/11/20)		
bipolar AND primary care AND (physical health screening)	42957 results	
bipolar AND (physical health) AND screening	8170 results	(re-searched with only "journal articles" selected)
bipolar disorder AND physical assessment AND BMI	9 results	* 9 excluded (not bipolar disorder; not intervention-led)
Scopus (26/12/20)		
(bipolar disorder) AND (physical health intervention)	15099 results	
(bipolar disorder) AND (physical health assessment)	20594 results	
(bipolar disorder) AND (physical health assessment) AND (BMI)	299 results	
bipolar AND primary care AND (physical health screening)	4005 results	
(physical AND health AND assessment AND bipolar AND disorder)	540 results	
(physical AND health AND assessment AND bipolar AND disorder AND IPAQ)	13 results	* 2 extracted (rest: not bipolar; not intervention-led; duplicates)
mental health nurses AND (physical health) AND standard care AND bipolar	776 results	
Cinahl (03/12/20)		
bipolar disorder AND physical health AND (screening or assessment or test or diagnosis)	127 results	
bipolar disorder AND physical health AND nurse	18 results	* 1 extracted (rest: not related to SMI; not intervention-led; pharmacological treatment only; duplicates)
bipolar AND primary care AND (physical health screening)	1 result	* 1 extracted to folder
mental health nurses AND (physical health) AND standard care	4 results	* 4 excluded (not physical health-focused; not bipolar; only focuses on nurse attitudes, not practices)
(physical AND health) AND (bipolar) AND (intervention)	104 results	
(mental health nurses or psychiatric nurses or psych nurses) AND (physical health or physical wellbeing or physical illness or physical health problems) AND (standard care or usual care)	7 results	* 6 excluded (not bipolar disorder; not intervention-led; only focuses on nurse attitudes, not practices)
OVID Medline (10/12/20)		

bipolar disorder AND physical health AND (screening or assessment or test or diagnosis)	114 results	
bipolar AND (physical health) AND screening	12 results	* 9 excluded (not bipolar disorder; pharmacological treatment only) NOTE: 1 not in English)
(bipolar disorder) AND (physical health assessment)	1 result	* 1 excluded (pharmacological treatment only)
DART (10/12/20)		
bipolar AND (physical health) AND screening	2 results	* 2 excluded (1 not in English; 1 not related to bipolar disorder)
bipolar AND BMI	5 results	* 1 extracted; 4 excluded (1 not bipolar disorder; 2 pharmacological treatment only) NOTE: 1 not in English
bipolar AND obesity	8 results	* 8 excluded (1 not bipolar; 2 pharmacological treatment only; 1 not human population) NOTE: 4 not in English
Lenus Irish Health Repository (10/12/20)		
bipolar AND (physical health) AND screening	246 results	* 239 excluded (not bipolar disorder) *7 screened: 3 extracted to folder. Remaining 4 excluded (not bipolar disorder)
bipolar AND mental health nurses	392 results	* 392 excluded (7 duplicates; 385 excluded: not bipolar disorder)
bipolar AND obesity	71 results	* 71 excluded (1 duplicate; 70 not bipolar disorder)
bipolar AND BMI	25 results	* 25 excluded (1 duplicate; 24 not bipolar disorder)

Table 1: Search Strategy.

Data collection and analysis

Selection of studies

Two review authors, Fionnuala Jordan (FJ) and Siobhan Smyth (SS), independently screened all titles and abstracts identified through the literature searches to identify those that met the inclusion criteria. Full texts of studies identified as potentially relevant by at least one review author were retrieved. Two other review authors (FJ) and Brendan Power (BP) independently screened the full‑text studies for inclusion or exclusion. Disagreements were resolved by discussion, or, when necessary, we consulted a third review author (SS). Studies excluded at the full‑text stage were listed as excluded studies. Reasons for exclusion are presented in the 'Characteristics of excluded studies' table. The screening and selection processes are presented in the adapted PRISMA flowchart [8].

Data extraction and management

The review team designed a data extraction form, and had we included studies, we had planned that two members of the review team (FJ and SS), working independently, would extract data from eligible studies. Any disagreements would have been resolved by discussion, or, if necessary, a third review author (BP) was consulted. We had planned for one review author (FJ) to enter extracted data into Review Manager Software 5.4 [9], and for a second review author (SS) to check for accuracy and consistency against the data extraction sheets.

Assessment of risk of bias in included studies

Had we included studies we planned to assess risk of bias of the included studies using Cochrane's tool for assessing risk of bias, as detailed in the Cochrane Handbook for Systematic Reviews of Interventions [10] and contained in RevMan 5.4 [9].

Two review authors (SS and FJ) planned to assess risk of bias independently for each study. We planned to resolve any disagreements through consultation with a third review author (BP). For all included study designs, the review team had planned to base our assessment of risk of bias on the following seven domains [10].

- Random sequence generation

- Allocation concealment

- Blinding of participants and personnel

- Blinding of outcome assessment

- Incomplete outcome data

- Selective outcome reporting

- Other bias

The review team had planned to judge each potential source of bias as having low, high or unclear risk, and to provide a supporting quotation from the study report together with a justification for our judgement in the 'Risk of bias' table. We planned to summarise risk of bias judgements across different studies for each of the domains listed. If information on risk of bias related to unpublished data or correspondence with a study author, we would have noted this in the 'Risk of bias' table. We planned to judge each additional source of bias as having high, low, or unclear risk, and to provide a supporting quotation from the study report together with a justification for our judgement in the 'Risk of bias' table.

Measures of treatment effect

Dichotomous data

We planned to express results for dichotomous outcome measures using risk ratios (RRs) and associated 95% confidence intervals (CIs) in reflecting the uncertainty of the point estimate of effects [10].

Continuous data

For continuous outcome measures, we had planned to calculate mean differences (MDs) and standard deviations (SDs) with corresponding 95% CIs. We planned to use standardised mean differences (SMDs) with 95% CIs to combine outcomes from trials that measure the same outcome using different scales [10].

Dealing with missing data

For studies with missing data, we planned to contact the corresponding study authors to try to obtain additional information. We planned to record missing and unclear data for each included study. We also aimed to perform all analyses using an intention-to-treat approach, that is, we planned to analyse all participants and their outcomes within the groups to which they were allocated, regardless of whether they received the intervention or not [10].

Assessment of heterogeneity

We planned to evaluate heterogeneity by visually inspecting point effect estimates and confidence intervals in forest plots, and by using Tau², the Chi² test, and the I² statistic as outlined in the Cochrane Handbook for Systematic Reviews of Interventions [11]. We planned to interpret the I² statistic as follows: 0% to 40% might not be important; 30% to 60% may represent moderate heterogeneity; 50% to 90% may represent substantial heterogeneity; 75% to 100% represents considerable heterogeneity [10].

Assessment of reporting biases

Had we 10 or more studies included in the review, we had planned to produce a funnel plot to investigate publication bias through visual inspection of asymmetry [10]. If asymmetry was evident, we planned to perform a statistical test for funnel plot asymmetry as proposed by Egger and Rücker [12].

Data synthesis

We planned to use RevMan 5.4 to conduct statistical analysis [9]. When reasonable to assume that studies were homogeneous, that is, examining the same intervention in similar populations using the same methods, we planned to use a fixed-effect meta-analysis to combine data. If there was clinical heterogeneity (due to variations in participants, interventions, comparators or outcomes), we planned to use random effects meta-analysis to produce an overall summary if it were reasonable to assume that an average treatment effect across the included studies was clinically meaningful. If we did not perform a meta-analysis, alternatively we planned to present a narrative synthesis.

Subgroup analysis and investigation of heterogeneity

Had we included studies, planned subgroup analysis was as follows: Mental health nurses with no general nurse training versus nurses with a dual qualification. i.e., nurses with both a mental health nurse and a concurrent general nurse qualification.

Sensitivity analysis

Had we included studies, we planned to repeat the analyses to include only high quality studies. For the purpose of this review, we would have classified studies judged as 'low risk of bias' for sequence generation and allocation concealment as high quality studies.

Results

Description of studies

Results of the search

After the removal of duplicates (n=4), we assessed the titles and abstracts of 96 studies. We excluded 92 studies at the title and abstract stage. We reviewed the full text of four studies. None of the full text studies assessed met the inclusion criteria. All of the full text studies were excluded for the same reason i.e., the outcomes measured were patient outcomes only. See Figure 1, PRISMA flowchart and the 'Characteristics of excluded studies' table in Table 2 [13-16].
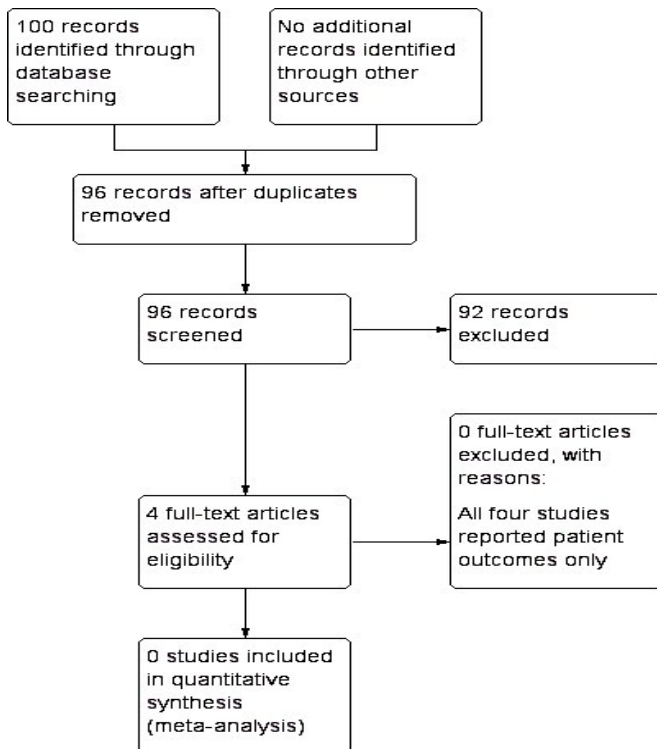
Figure 1: PRISMA Flowchart.

As none of the studies screened met the inclusion criteria for the review it was not necessary to undertake a risk of bias assessment nor was it possible to evaluate the effectiveness of physical health assessment programmes/ physical health assessment tools for mental health nurses in enabling them to provide for the primary and secondary physical health needs of people with bipolar disorder.

Author	Reason for exclusion
Ohlsen 2005	Outcomes measured at the level of the patient only.
Gillhoff 2010	Outcomes measured at the level of the patient only.
Osborne 2010	Outcomes measured at the level of the patient only.
Crowe 2011	Outcomes measured at the level of the patient only.

Table 2: Characteristics of excluded studies table.

Discussion

This review sought to review the evidence to support the effectiveness of physical health assessment training programmes/ physical health assessment tools for mental health nurses enabling them to provide for the physical health needs of people with bipolar disorder. We were interested in knowing how physical health assessment training programmes impacted on knowledge, skills and attitudes of the mental health nurse participants. Disappointingly, we did not find any studies that met the inclusion criteria of the review.

Authors' conclusions

Implications for practice

The research literature suggests that lower levels of physical health associated with mental illness are due to inadequate quality of care [6]. Mental health nurses are well placed to play a key part in the prevention and treatment of physical health co-morbidities and consequently improving the standards of physical health care provision for their patients. Yet, we found no evidence to inform the effectiveness of physical health assessment training programmes for mental health nurses in terms of the impact it has on their knowledge, skills and attitudes.

Implications for research

There is a need to design and evaluate physical health assessment training programmes for mental health nurses and to evaluate the effectiveness of those programmes employing RCT methodology. There is a need to measure the impact of physical health training programmes at the level of nurse participants.

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Conflict of Interest

The authors declare that there is no conflict of interest.

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