TECHNICAL COMMENTARY

Relationships

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Introduction

Mental illness can have an intrusive effect on personal relationships, social interactions and on libido. People with a mental illness may have difficulty forming and maintaining relationships, which may be a direct consequence of the disorder. Medications may also impact on sexual function.

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 2010 that report results separately for people with bipolar disorder. Reviews were identified by searching the databases MEDLINE, EMBASE, and PsycINFO. Hand searching reference lists of identified reviews was also conducted. When multiple copies of review topics were found, only the most recent or comprehensive review 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 with less than 50% of items 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 one systematic review that met our inclusion criteria[3].

- Moderate quality evidence suggests increased rate of risky of sexual behaviors in people with bipolar disorder, particularly during manic episodes compared to patients to other psychiatric disorders.
- Authors report that the literature suggests people with bipolar disorder are more similar to controls than to other psychiatric patients in establishing and maintaining couple relationships. Studies of couples with one bipolar partner found decreased levels of sexual satisfaction associated with the diagnosis, varying levels of sexual interest across polarities, increased incidence of sexual dysfunction during depressive episodes, and disparate levels of satisfaction in general between patients and their partners.

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Kopeykina I, Kim HJ, Khatun T, Boland J, Haeri S, Cohen LJ, Galynker II

Hypersexuality and couple relationships in bipolar disorder: A review

Journal of Affective Disorders 2016; 195: 1-14

View review abstract online

Comparison	**Overview of sexuality in people with bipolar disorder.**
Summary of evidence	**Moderate quality evidence (direct, overall large sample, appears consistent, unable to assess precision) suggests increased rate of risky of sexual behaviors in people with bipolar disorder, particularly during manic episodes compared to patients to other psychiatric disorders.** **Authors report that the literature suggests people with bipolar disorder are more similar to controls than to other psychiatric patients in establishing and maintaining couple relationships. Studies of couples with one bipolar partner found decreased levels of sexual satisfaction associated with the diagnosis, varying levels of sexual interest across polarities, increased incidence of sexual dysfunction during depressive episodes, and disparate levels of satisfaction in general between patients and their partners.**

Sexual outcomes

1 study (N = 2,278) found Italian patients with bipolar disorder related items of hypersexuality to items of self-confidence and energy, while Chinese and Korean patients related these items to items of risky and dangerous behavior.

1 study (N = 515) of inpatients with bipolar disorder, schizophrenia, schizoaffective, major depressive disorder, substance use, psychotic disorder, or other disorders found women with bipolar disorder were more likely to report sex with intravenous drug users or partners who had AIDS than people with other disorders.

1 study (N = 485) of outpatients with bipolar disorder, heroin addiction, or schizophrenia found patients with bipolar disorder had the lowest rate of multiple sex partners, and a higher rate of un-planned pregnancies compared to the other groups.

1 study (N = 292) of female inpatients with bipolar disorder, depression, schizophrenia, or other psychoses found females with bipolar disorder were more likely to have been forced into sex by a partner or raped than women with other disorders.

1 study (N = 205) of inpatients with bipolar disorder, depression, schizophrenia, or substance use found bipolar disorder was associated with more risk factors for HIV than other disorders.

1 study (N = 154) of outpatients with bipolar disorder, unipolar depression or non-affective disorders found that during a manic phase, people with bipolar disorder were more likely to engage in

prostitution than people with unipolar depression, but less likely than people with non-affective disorder. People with bipolar disorder were more likely to have had extra-marital activities than other patients. 1 study (N = 120) of outpatients found women with bipolar disorder I were more likely to endorse implicit sexual interest than women with bipolar disorder II or controls. There were no differences between bipolar I or II on sexual dysfunction or explicit sexual interest. 1 study (N = 101) of people with co-occurring bipolar disorder and substance use disorders found a recent manic episode was a significant predictor of HIV risk. Men were more likely to have multiple partners and women were more likely to have traded sex. 1 study (N = 93) of inpatients with bipolar II found risky sexual behavior and consequences were frequently reported during hypomanic episodes, particularly with comorbid alcohol abuse. 1 study (N = 86) of outpatients found being diagnosed with a disorder other than bipolar disorder was an HIV risk factor. 1 study (N = 61) of outpatients found 40% of people with bipolar disorder viewed increased sexual intensity during hypomania as a positive change. Women had more pronounced positive emotions than men regarding these changes. 1 study (N = 31) of inpatients during a manic episode found only one female patient was overtly provocative. 1 study (N = 24) of inpatients during a manic episode found both men and women had an increased libido while manic, but women showed more sexual activity and display. 1 study (N = 20) of inpatients with at least one manic episode found that mania progresses through three stages, and a patient's level of sexual thought and activity increases with each progressive stage. 1 study (N = 1) of a female inpatient in a hypomanic episode found the patient described risky sexual behaviors including exchanging sex for money, drugs, and housing, unwanted sexual intercourse and unprotected sex accompanied by substance use. 1 study (N = 1) of a male with bipolar II disorder in a depressive episode experienced symptoms of increased libido and sexual activity.

Consistency in results‡	Appears consistent.
Precision in results§	No measure of precision is reported.
Directness of results‖	Direct

Explanation of acronyms

AIDS = acquired immune deficiency syndrome, HIV = human immunodeficiency virus, N = number of participants

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].

† 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. 0.2 represents a small effect, 0.5 a medium effect, and 0.8 and over 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 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 indirect

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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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