Bipolar Disorder in Late Life: Future Directions in Efficacy and Effectiveness Research

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There is a dearth of knowledge regarding the diagnosis and treatment of bipolar disorder in late life. Based on a review of the current research on bipolar disorder in late life, emerging areas of research were identified: 1) methodological challenges in diagnosing bipolar disorder; 2) a lack of guidelines for the treatment of bipolar disorder in late life; 3) increased prevalence of general medical comorbidities; and 4) a need to improve access to care and social support services. The current literature regarding bipolar disorder in late life suggests the need for more rigorous studies on accuracy in diagnoses, etiology and risk factors, and efficacy studies on pharmacotherapy treatment options. However, effectiveness studies that focus on translating research into practice also are needed, particularly strategies to monitor and improve the quality of care in routine settings and better coordinated medical, psychiatric, and social services for older adults with bipolar disorder.

Introduction

Bipolar disorder is a chronic illness, affecting individuals across the life span, and is associated with significant personal and societal costs [1]. Although prevalence estimates of bipolar disorder are lower in older individuals compared with younger individuals, bipolar disorder in late life is increasingly being recognized as a major public health problem [2•]. Additionally, with the aging population, the absolute number of elderly individuals with bipolar disorder will increase and the proportion of older individuals with new onset bipolar disorder also is likely to increase [3]. However, current knowledge regarding the epidemiology, clinical course, and appropriate pharmacotherapy and management strategies for bipolar disorder in older individuals is limited.

This paper reviews the current research regarding the management of bipolar disorder in late life. To assess the current state of research in bipolar disorder, key articles from Medline were reviewed (including empirical research, reviews, and guidelines/consensus statements) published since October 1, 2003 using the key words "bipolar," "manic," "mania," "elderly," "geriatric," "late life," "age," and "older." A total of 18 articles were identified as directly relevant (containing information on bipolar disorder specifically in later life) [2•,4–10,11•,12,13•,14–20]. Given that little has been published on this topic, articles published before October 2003 also were reviewed because they were of particular relevance and will guide the reader in the context of this work. Based on this review, four key emerging issues were identified and are discussed in greater detail below, including: 1) methodological issues in detecting and diagnosing bipolar disorder in late life; 2) the lack of guidelines for the treatment of bipolar disorder in late life; 3) increased recognition of the burden of general medical comorbidity in bipolar disorder in late life; and 4) access to care and social services for older patients with bipolar disorder.

Methodological Issues: Diagnosis and Clinical Course of Bipolar Disorder in Late Life

Population-based data from the Epidemiologic Catchment Area (ECA) study report a 1.6% current prevalence of bipolar I disorder, with a lower prevalence (0.4%) in older adults and women [21]. Current reviews of prevalence data by Depp and Jeste [2•] and Lehmann [4] also corroborate these findings. Why is the prevalence of bipolar disorder lower in older than in younger individuals? The decreased observed prevalence of bipolar disorder in older populations despite that bipolar disorder is a chronic and lifelong illness may be attributed to diagnostic bias and selective survival. First, older individuals often fail to recall past manic episodes, and many providers may not be adequately trained to recognize differential reporting of symptoms by older individuals, who often have physical or somatic symptoms such as irritability, paranoia, or disorganization rather than the classic euphoric or elated mood symptoms. In addition, selective survival may play a

role, as a disproportionate number of individuals with bipolar disorder commit suicide [5]. Conversely, it will not be surprising to see an increased observed prevalence of bipolar spectrum disorders among older adults in the near future, especially with an increased interest in diagnosing bipolar spectrum disorders (bipolar I, II, not otherwise specified). In a reanalysis of ECA data, Judd and Akiskal [22] estimated that the prevalence of bipolar spectrum disorders may be as high as 6.4%. Although the overall prevalence of bipolar disorder is lower in older patients compared with younger patients, the treatment and societal costs associated with this condition occur disproportionately in older adults with this illness [10].

Clinical Characteristics of Bipolar Disorder in Late Life

Recently, investigators also have attempted to clarify the diagnostic differences between secondary mania and late-onset bipolar disorder. Evidence suggests that late-onset bipolar disorder is characterized more by a family history of mood disorders, whereas secondary mania is characterized more by underling physical or neurologic disorders rather than family history [6]. Moorhead and Young [7] suggest that older patients with bipolar disorder may constitute an etiologically different subgroup because in their study, as older patients compared to younger patients were less likely have a family history of mood disorders and more likely to have underlying medical or neurologic comorbidities. Still, there is a dearth of data on the etiology and clinical course of bipolar disorder in older adults [8]. With this in mind, additional studies need to be designed to examine this issue more clearly, and should be longitudinal in design, contain larger sample sizes, and include patients and individuals outside the traditional psychiatric setting [2•].

Large Database Research to Study Bipolar Disorder

Subsequently, researchers are increasingly relying on health care administrative and claims data to identify and better understand the treated prevalence and clinical course of bipolar disorder in older individuals within a population-based setting. Administrative data from health care organizations (Veterans Administration, Medicare, private health plans) can be a cost-efficient alternative to primary data collection for identifying large populations of patients with rare conditions. Findings from administrative data also are potentially more generalizable because the data are population-based and reflect routine ("real-world") care.

However, there are disadvantages in using administrative data. Foremost is the limited information on diagnoses from International Classification of Diseases-Ninth Revision (ICD-9) codes, which give very little information about a patient's clinical state. Administrative data often contain multiple psychiatric diagnoses. For example, a recent analysis of Veteran's Administration (VA) data found that more than 30% of patients diagnosed with bipolar disorder also received concurrent (within the same year) diagnoses of schizophrenia, which is considered a mutually exclusive diagnosis to bipolar disorder [9]. Older African-Americans diagnosed with bipolar disorder were the most likely to have a concurrent diagnosis of schizophrenia. Perhaps the apparent high rates of multiple diagnoses are attributed to the "carrying forward" old diagnoses from past encounters in current history forms, which also appear in administrative records, or perhaps patients may not be receiving adequate follow-up care to confirm diagnoses [9].

Therefore, administrative databases, although convenient and cost-efficient, are not designed for research. Investigators must carefully consider the limitations of the data from administrative sources. One potential solution when relying on administrative data is to validate ICD-9 codes by comparing to provider report or formal diagnostic assessment. Specific algorithms based on ICD-9 codes that maximize the validity then can be evaluated, such as the identification of patients with two or more diagnoses from separate encounters. Improving the accuracy and validity of ICD-9 codes for psychiatric diagnoses is an important next step in research regarding bipolar disorder in late life, especially as investigators increasingly rely on large administrative databases to do their research.

Lack of Guidelines for Bipolar Disorder Treatment in Late Life

Despite the availability of efficacious pharmacotherapy and practice guidelines for the management of bipolar disorder in general [24–27], most have not been tailored for older adults with bipolar disorder in particular. The current guidelines reviewed by Young *et al.* [11•] recommend lithium as the first line for the treatment for mania, followed by divalproex/valproic acid and carbamazepine. For antipsychotic medications, additional research is needed on their efficacy and safety in older adults with bipolar disorder [12]. Alexopoulos, *et al.* [13•] recently surveyed expert opinions regarding the appropriate use of antipsychotic medications in older patients. Experts in geriatric psychiatry or related fields recommended that antipsychotic medications in combination with a mood stabilizer are appropriate for older patients with psychotic or severe nonpsychotic mania. The first-line choices for antipsychotics included risperidone or olanzapine. However, experts cautioned that there are risks associated with some of the atypical antipsychotic medications, including an increased risk of diabetes and other metabolic syndromes from olanzapine and other atypical antipsychotic medications [13•]. Therefore, they recommended that older patients with diabetes, dyslipidemia, or obesity should not take olanzapine, clozapine, or

conventional antipsychotics. Young *et al*. [11•] were less certain regarding appropriate antipsychotic use for the treatment of mania in older adults because side effects may be even more damaging to older compared to younger patients. Additional evidence suggests that olanzapine may cause delirium in geriatric patients [15]. In any case, careful monitoring of side effects and toxicity is recommended for older patients with bipolar disorder who are taking mood stabilizers and/or antipsychotics [11•,13•].

Overall, the dearth of information on drug efficacy in older adults with bipolar disorder is attributed to the lack of data on efficacy and effectiveness from pharmacotherapy trials in this population. Subsequently, Rendell *et al*. [15] encouraged psychiatrists to consider enrolling older patients in an ongoing trial of divalproex and lithium (the BALANCE trial). Nonetheless, many clinical trials have not been designed to accommodate older patients because they often exclude patients with coexisting medical conditions or cognitive impairment [11•]. Additional observational studies have found that a significant percentage of older adults are on combination therapy (multiple mood stabilizers and/or antipsychotics) [10] even though the efficacy of such treatment has not been fully shown in older adults with bipolar disorder. Therefore, more research is recommended to better understand the effects of pharmacotherapy on older adults with bipolar disorder, including a careful consideration of the role of cognitive impairment and medical comorbidity. Additional multicenter and double-blind randomized efficacy trials are needed to inform practitioners regarding the long-term effects of pharmacotherapy in managing bipolar disorder in older adults [2•].

Burden of General Medical Comorbidity in Older Patients with Bipolar Disorder

Additionally complicating the diagnosis and management of bipolar disorder in older adults is the presence of medical comorbidity. Recent evidence suggests that older patients with bipolar disorder experience more general medical comorbidities than the general population of older adults [16]. Older individuals with bipolar disorder are especially prone to the adverse effects of medical comorbidity because of aging, the inherent instability and "wear and tear" on the body brought forth by alternating periods of mania and depression over the life span, and multiple medication use [16]. These complexities can contribute to poor adherence and unstable treatment course, ultimately resulting in suboptimal outcomes.

A recent study [16] assessed the prevalence of medical comorbidities in 4310 older patients with bipolar disorder receiving care in the VA system. It was found that such individuals carry a substantial burden of medical comorbidity, especially diabetes, cardiovascular, and pulmonary conditions, compared to the general VA patient population. Such comorbidities also were occurring at an earlier age (4 to 8 years earlier) than in the VA comparison population, suggesting that patients with bipolar disorder are acquiring medical conditions at an earlier age of onset than the general population. Other neuropsychologic disorders such as cognitive impairment also seem to be more prevalent in older patients with bipolar disorder. Gildengers *et al*. [17] found that older euthymic patients with bipolar disorder compared with education and age matched non-bipolar patients were more likely to experience cognitive deficits. Overall, there is a need for earlier detection and treatment of medical and neurologic conditions for patients with bipolar disorder.

Improving Access and Coordination of Care for Older Individuals with Bipolar Disorder

The findings presented suggest that efforts to improve care for older patients with bipolar disorder should not only encompass additional pharmacotherapy efficacy trials, but also should address the growing concern of medical comorbidity in this population. Nonetheless, the potential disparities in the receipt of comprehensive care are exacerbated by the lack of social support for these patients and the organizational separation of physical and mental health care [27]. Beyer *et al*. [18] concluded that older patients with bipolar disorder perceive that they have less social support compared with their older, non-bipolar counterparts. Martire *et al*. [19] also report on the burden of caregivers of older patients with bipolar disorder.

The separation of medical and psychiatric care also impedes access for older patients with bipolar disorder. For example, evidence suggests that medical comorbidity among older patients with mental disorders including bipolar disorder is under-detected and inadequately treated. Primary care for patients with mental disorders has remained suboptimal, in particular for cardiovascular disease [28], diabetes [29], and preventive services [30]. Because bipolar disorder is a serious mental illness, patients often are managed in the mental health setting [31]. Therefore, reasons for poor quality may be attributed to underdetection of medical conditions in psychiatric facilities for which a general internist typically would screen [32,33]. Poor quality may also be attributable to the health care provider's lack of time [33]. Chronic conditions in older patients with bipolar disorder also may be missed because patients may fail to recall medical symptoms, or their medical illnesses may be overlooked [34]. Therefore, improving medical care for patients with bipolar disorder requires a coordinated care approach that can improve access to different providers. Consequently, the recent Depression and Bipolar Support Alliance consensus statement on the unmet needs in diagnosis and treatment of mood disorders in late life is timely in emphasizing the need for strategies to improve coordinated medical, psychiatric, and social services for older patients with bipolar disorder [20].

Table 1. Barriers to coordinated care for older patients with bipolar disorder

Barriers to good care	Care manager-solutions	Challeges to implementation and future discussion topics
Access to routine medical care needs to be improved, as the primary care team too busy to provide care	Arrange for preventive care appointments; work with primary care physician	Need clearer sense of accountability between providers such as social workers, physician assistants, and nurses, regarding patient care
More administrative support to provide information to all providers on patient's current condition	Track patients using registry that is available to providers; care manager to update registry	Burden on care manager: what is appropriate caseload, qualifications of care manager?
Assistance with the day-to-day administrative tasks for managing patients	Care manager can track patient care	Avoiding "shafting" and "dumping" of duties
More education and intervention needed for adherence: patients have trouble adhering to appointments, medications	Provide treatment adherence counseling. Ensure appointments are made, contact patient if appointment is missed	Sustaining care management program, clinical information system
Some patients have suicidal ideation	Serve as an "advocate" or "lifeline" for patient	Accountability–who is "responsible" if the patient attempts suicide?
Limited options, such as intensive case management only available for severely ill	Seamless access to social services, including housing and transportation for older patients	Avoiding too much overlap, "stepping on toes"

Given that older patients with bipolar disorder potentially experience gaps in continuity of care, how can providers better manage these patients? A recent focus group of mental health providers in a VA facility studied by the author may shed some light on this issue. In the focus group, key questions were asked regarding the barriers and facilitators of medical and social services for patients with bipolar disorder, suggestions for overcoming such barriers, and challenges in implementing coordinated care models. A subsequent list of insights and recommendations was developed by this focus group (Table 1). Overall, subsequent strategies for improving access and continuity of care for older patients with bipolar disorder will require additional research on the effectiveness of evidence-based practices in routine care settings.

Effectiveness Research: Quality Improvement Strategies Translating Knowledge to Practice

The current state of the literature regarding bipolar disorder in late life suggests the need for more empirical studies clarifying the etiology and clinical course of bipolar disorder in late life. Nonetheless, in many cases, such efficacy research (optimal pharmacotherapy) is rarely translated into practice in an efficient manner, as it often takes years if not decades for scientific findings to be applied in routine care [35]. Therefore, the research agenda for bipolar disorder in late life should also include effectiveness and translational research strategies, which focus more on implementing evidence-based care beyond the clinical trial into the real-world setting.

The current state of the literature regarding bipolar disorder in late life reviewed here suggests the need for additional effectiveness research in two key areas: improved tools for monitoring the quality of care in routine settings and treatment models that improve coordination of medical, psychiatric, and social services for older adults with bipolar disorder.

Monitoring Quality of Care in Older Patients with Bipolar Disorder

The growing popularity of administrative data in identifying and studying older patients with bipolar disorder has led to an increased interest in using such data to assess whether these patients are receiving appropriate care. Quality indicators such as adequate pharmacotherapy and outpatient continuity of care are potentially powerful tools for assessing the extent to which providers within a patient population are following practice guidelines. Potential users of information (researchers, practitioners, health care organizations, and advocacy organizations) want a "bottom line" conclusion about overall quality of care to help identify patients who may be experiencing gaps in care and to help clarify decisions regarding resource priorities and provision of services for older patients with bipolar disorder. Therefore, developing and refining measures of use and quality of care is one of the first steps in improving efficiencies and patient outcomes, and can inform interventions to reduce costs and adverse outcomes in older patients with bipolar disorder, thereby translating research into practice.

One of the first steps in measuring quality of care is to derive quantifiable indicators based on clinical practice guidelines that can be used to assess the quality of care for older patients with bipolar disorder. Valid quality indicators should be guideline-based and feasible to ascertain, such as from administrative data, to be practical

Table 2. Quality of care in patients diagnosed with bipolar disorder: multivariate logistic regression results*

Guideline-concordant indicators	Mood stabilizer prescription, *n*=2958			Outpatient visit ≤ 90 days *n*=2958			Post-hospitalization outpatient visit ≤ 30 days, *n*=629		
	OR	95% CI	*P*	OR	95% CI	*P*	OR	95% CI	*P*
Age ≥ 60 years	0.78	0.64, 0.95	0.02	0.594	0.49, 0.72	<0.001	0.9	0.54, 1.5	0.68
Black†	0.8	0.61, 1.03	0.086	0.77	0.59, 0.99	0.04	0.69	0.44, 1.08	0.1
Female	0.66	0.51, 0.85	0.001	1.271	0.97, 1.66	0.08	2.11	1.16, 3.83	0.01
Not married	0.92	0.77, 1.10	0.36	1.035	0.87, 1.23	0.7	0.56	0.38, 0.85	0.006
Means test‡	0.9	0.64, 1.25	0.52	0.853	0.62, 1.17	0.33	0.65	0.27, 1.55	0.33
Medical condition, n	0.99	0.98, 0.99	0.008	1.01	1.01, 1.02	<0.001	1.01	1.01, 1.08	0.02
SUD diagnosis	1.01	0.83, 1.23	0.91	0.896	0.74, 1.08	0.25	0.81	0.55, 1.18	0.27

*Patients diagnosed with bipolar disorder were defined as having either one inpatient or two separate outpatient-based International Classification of Diseases–Ninth Revision diagnoses (2960–29616,2964–29689, or 30113 inclusive). Multivariate resultes were adjusted for age, race, gender, income, marital status, number of comorbidities, substance use disorder, and site.
†Reference group=white or other race/ethnicity
‡Ineligible for free care
CI—confidence interval; OR—odds ratio; SUD—substance use disorder

in multiple settings. When the guidelines are not fully clear or are not consistent, then an expert panel [13•] should be used to obtain consensus on the guidelines and subsequent indicators. For example, three quality indicators based on the American Psychiatric Association and VA practice guidelines [24–26,36] were applied to evaluate the care for older patients diagnosed with bipolar disorder. In a cohort of VA patients from the mid-Atlantic region, the quality of bipolar disorder care was evaluated comparing older and younger patients, using indicators of the minimum necessary standard of care. These quality indicators included adequate pharmacotherapy (mood stabilizer prescription within the same year as the bipolar disorder diagnosis), outpatient follow-up care (receipt of an outpatient visit less than 90 days from a previous visit), and adequate post-hospitalization care (receipt of an outpatient follow-up visit less than 30 days after a hospitalization discharge). These indicators were chosen because they pertained to appropriate care for most patients diagnosed with bipolar disorder regardless of current mood state. Overall, of 2958 patients (mean age, 52 years; 10% female), 70.9% received a first-line mood stabilizer (lithium, divalproex/valproic acid, carbamazepine, or lamotrigine) and 65.8% received an outpatient mental health visit in less than 90 days. Of 2958 patients, 629 had a psychiatric hospitalization, and of those, 53.1% received an outpatient visit less than 30 days after discharge. Older patients were less likely receive a mood stabilizer and less likely to receive outpatient care less than 90 days after controlling for patient factors and comorbidity (Table 2).

These results suggest that older patients with bipolar disorder maybe receiving inadequate care for bipolar disorder. The advantage of these indicators is that they are easily attainable, can be used to monitor quality of the long term, and can be used to monitor whether quality improvement initiatives are working. Still, quality of care monitoring strategies rely on accuracy of the data being collected, and initiatives at the practice and health care organization levels are needed to ensure standardization of coding mechanism for services use and diagnoses. In addition, quality indicators need to be additionally customized to older patients with bipolar disorder, and should not only include measures of adequate psychiatric care, but also adequate medical care, drug toxicity monitoring, preventive services, and social services/geriatric care that reflect the spectrum of care for these individuals (Table 3).

Lastly, monitoring quality of care can only be successful if there is a clear sense of who is accountable if gaps in care are found for older patients with bipolar disorder. If older patients with bipolar disorder are not receiving laboratory tests for drug level and toxicity, or are not being monitored for diabetes risk factors, then who is responsible for improving quality? The separation of physical and mental health care further complicates efforts to improve quality, because communication and coordination of care are inhibited between providers, who perceive that the other practitioner is responsible for drug level monitoring, diabetes risk assessments, etc. Therefore, quality measurement efforts need to be implemented beyond the provider and should involve health care payers and plans. For example, a group of health care policy-makers, researchers, and managed care representatives in the Washington, DC area interested in improving the quality of care for substance use disorders convened to establish guideline-based indicators for adequate follow-up treatment for substance use disorders based on administrative data, as a means to monitor quality across different practice settings [38]. These measures can ultimately be used by health care purchasers to identify health plans that are providing the best care for substance use disorders. Nonetheless,

Table 3. Quality indicators customized for older patients with bipolar disorder [13•,24,25,36–38]

	Indicator description	Source
Mood stabilizers	Olanzapine, clozapine, or conventional antipsychotics not recommended if the patient had uncontrolled diabetes, dyslipidemia, or obesity	Alexopoulos *et al.* [13•]
	Drug level monitoring for lithium and anticonvulsants	American Psychiatric Association [24,25]
	Thyroid function test every 6 mo if the patient taking lithium	American Psychiatric Association [24,25]
	Hematologic and hepatic function test if the patient is taking divalproex or valproic acid	American Psychiatric Association [24,25]
Post-hospitalization follow-up care	Outpatient visit < 30 d from discharge date	Unutzer *et al.* [36]
CHD/diabetes risk monitoring	Blood pressure check, BMI screening, fasting glucose test, and/or lipid panel* every year for patients taking atypical antipsychotics	USPSTF [37]
Prevention	Pneumococcal vaccine	USPSTF [37]
	Influenza vaccine every year for patients not known to have an allergy to eggs or influenza vaccine	USPSTF [37]
	Colorectal cancer screening	USPSTF [37]
	Alcohol use disorders screening (assessment, laboratory test)	Garnick *et al.* [38]

*For patients younger than 65 years.
CDH—coronary heart disease; BMI—body mass index; USPSTF—United States Preventative Services Task Force

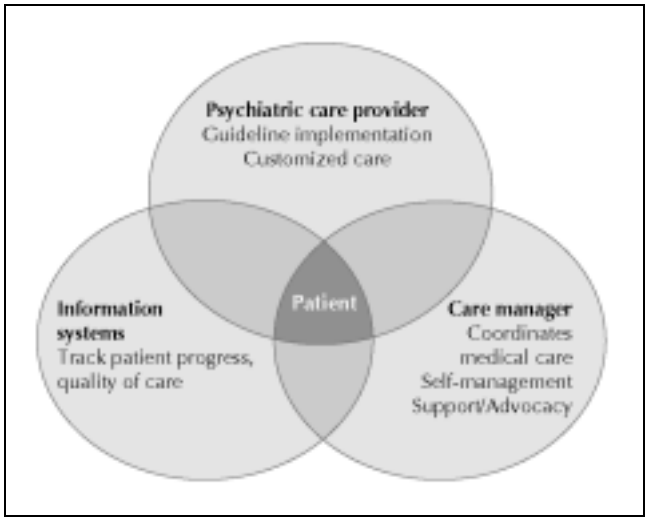

Figure 1. Coordinated care model for older patients with bipolar disorder. This figure represents the adaptation of the Chronic Care Model to improve care for older patients with bipolar disorder. The psychiatric care provider, with the help from a care manager (physician extender), and an enhanced clinical information system can improve coordination of medical, psychiatric, and social needs of patients.

additional efforts to integrate care across different entities for older patients will bipolar disorder are needed to encourage collaboration across different providers to ultimately improve care for this group.

Coordinated Care for Older Patients with Bipolar Disorder: A Systematic Approach

The gaps in quality of care observed in older patients with bipolar disorder, the barriers to coordinated care articulated by the provider focus group, the significant burden of medical comorbidity, and lack of social support suggested in the other research articles suggest the need for a more systematic strategy for integrating care for older patients with bipolar disorder. Treatment models for older patients with bipolar disorder should be designed to provide coordinated medical, psychiatric, and social services for these individuals.

Treatment models such as the Wagner Chronic Care Model (CCM) [39], which involve organizational changes in health care delivery from an acute care to a chronic disease management focus, have been shown to improve coordination of care across medical and psychiatric providers for older patients with unipolar depression in general medical settings [40]. The Wagner CCM is one of the most widely adopted frameworks for improving chronic illness care, primarily because of its focus on organizational change and patient activation strategies that facilitate the coordination of care across existing providers (primary care providers, mental health specialists), thereby minimizing the marginal costs of its implementation [41]. Core components of the CCM, notably, the systematic incorporation of evidence-based guidelines, use of non-physician staff (care manager) to coordinate services, social support, and patient self-management skills, and the use of clinical and population-based data in monitoring quality of care together can potentially improve coordinated care and subsequent outcomes for older patients with bipolar disorder, who often receive care in multiple settings (Fig. 1). The CCM recently has been implemented in two health services intervention trials to improve coordinated psychiatric care for patients with bipolar disorder [42,43].

However, treatment models that improve coordination of services such as the CCM have yet to be customized to the

needs (increased medical and social support services) of older patients with bipolar disorder. Subsequent adaptations of the CCM or similar treatment models to improve coordinated care for older patients with bipolar disorder should take into consideration their unique needs, including sensitivity of side effects from mood stabilizers and antipsychotics, increased risk of medical comorbidity and cognitive impairment, and the increased need for social support. For example, CCM-based models often implement reminders and flow sheets detailing appropriate pharmacotherapy to assist psychiatrists and other clinicians in providing optimal care for older patients with bipolar disorder. Non-physician staff, such as a care manager, can help coordinate medical appointments and social services for older patients with bipolar disorder, provide counseling on adherence strategies, refer to more intensive case management, and be the patient's advocate overall. The care manager also can use information systems, such as a registry of older patients with bipolar disorder, to track current treatment and inform providers regarding the patient's progress. These elements in combination can enhance linkages between general medical, mental health, and social services (Fig. 1). Nonetheless, given the challenges of coordinating care across multiple entities (medical, psychiatric, and geriatric services), additional research is needed to test and adapt CCM-based treatment models for older patients with bipolar disorder.

Conclusions

The current state of the literature regarding bipolar disorder in late life suggests the need for more rigorous studies on the diagnosis, longitudinal course, and risk factors (comorbidity) of adverse outcomes in older adults with bipolar disorder. The dearth of information on the best practices in the treatment of bipolar disorder in late life also calls for more clinical trials to test the efficacy of pharmacotherapies in this population. Nonetheless, older individuals with bipolar disorder will benefit most if such efficacy studies are coupled with effectiveness research, including improved monitoring of quality of care efforts in routine practice and interventions to test treatment models that improve coordination of medical, psychiatric, and social services across multiple providers and health care settings. For effectiveness research to have optimal impact on translating research into practice, researchers and practitioners need to refine tools such as administrative data and quality indicators, and customize treatment models that integrate medical, psychiatric, and geriatric care for this population.

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