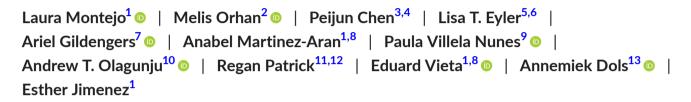
## REVIEW

# Functioning in older adults with bipolar disorder: A report on recommendations by the International Society of bipolar disorder (ISBD) older adults with bipolar disorder (OABD) task force



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#### Abstract

**Objectives:** Despite the importance of psychosocial functioning impairment in Bipolar Disorder (BD), its role among Older Adults with BD (OABD) is not well known. The development of guidelines for the assessment of psychosocial functioning helps to facilitate a better understanding of OABD and can lead to better tailored interventions to improve the clinical outcomes of this population.

**Methods:** Through a series of virtual meetings, experts from eight countries in the International Society of Bipolar Disorder (ISBD) on OABD task force developed recommendations for the assessment of psychosocial functioning.

Laura Montejo and Melis Orhan should both be considered as first authors. Esther Jimenez and Annemiek Dols should be considered joint senior authors.

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**Results:** We present (1) a conceptualization of functioning in OABD and differences compared with younger patients; (2) factors related to functioning in OABD; (3) current measures of functioning in OABD and their strengths and limitations; and, (4) other potential sources of information to assess functioning.

**Conclusions:** The task force created recommendations for assessing functioning in OABD. Current instruments are limited, so measures specifically designed for OABD, such as the validated FAST-O scale, should be more widely adopted. Following the proposed recommendations for assessment can improve research and clinical care in OABD and potentially lead to better treatment outcomes.

KEYWORDS functioning, older adults with bipolar disorder, recommendations

# 1 | INTRODUCTION

### 1.1 | Case study

"Mr. A is a 65-year-old man, diagnosed with bipolar disorder type II. He was diagnosed at age 37 years. In addition to experiencing recurring affective episodes, he complains of poor memory (e.g., forgetting appointments) and experiences trouble keeping up with household routines. Due to not opening the mail and forgetting important things like paying bills, he has experienced financial problems. He has also stopped driving due to attentional deficits, which in turn limits the distance he can travel from home and has made him feel like his world has become really small. He often experiences difficulty with planning and organization which has led him to give up work. Perhaps related to the lithium use, he experiences severe tremor and has trouble writing legibly. During his depressive episodes, he often withdraws from social contact. As a result, he has lost friendships over the years and often feels lonely. When he experiences affective episodes, he frequently cancels his clinical appointments, which hinders his prompt access to support services."

#### 1.2 | Introduction

Bipolar disorder (BD) is a severe mood disorder that is defined by episodes of mania or hypomania, alternating with depressive episodes and euthymic phases,<sup>1</sup> and heterogeneous cognitive and functional impairment.<sup>2</sup> The International Society of Bipolar Disorder (ISBD) task force on older adults with bipolar disorder (OABD) has defined OABD as individuals with BD over the age of 50.<sup>3</sup> OABD accounts for approximately 25% of the BD population. This group of patients exhibits different clinical and psychosocial features compared to younger adults<sup>3</sup> and may need appropriately tailored approaches to the management of symptoms and associated functional disability. OABD take on different characteristics and may be more complex,<sup>4</sup> so they can be considered a special population, thereby warranting specific approaches and recommendations.<sup>5</sup>

BD is a disabling mental illness, with 60% of patients exhibiting some degree of functional impairment.<sup>6</sup> Even between mood episodes, many patients with BD experience residual mood symptoms, as well as social and cognitive dysfunction<sup>7</sup> that have negative consequences for daily life. A recent population-based study demonstrated that BD patients, at first contact with psychiatry, had lower odds of having achieved the highest educational level, being employed, cohabitating, and being married in addition to not having achieved the highest guartile of income, compared with the general population. Importantly, patients showed a significantly decreased ability to enhance their socioeconomic functioning during the 23 years of follow-up compared to controls.<sup>8</sup> Considering the relative chronicity of BD, impaired daily functioning is regarded as a core feature of the disease.<sup>9</sup> In addition, treatment efforts tend to focus on alleviating clinical symptoms, with comparatively less emphasis on implementing concrete strategies aimed at promoting functional stability or recovery. It has been estimated that after symptomatic recovery, only 40% of adults with BD achieve functional recovery.<sup>10,11</sup> This suggests that once the mood episode has remitted, a large proportion of people with BD continue to experience functional problems in areas such as occupational performance, social relationships, and interests or hobbies, which in turn undermine daily routines, wellbeing, and quality of life. In a cohort of 173 subjects prospectively followed after hospitalization for their first episode of mania, 98% of participants achieved syndromal recovery, 72% achieved symptomatic recovery, and only 43% functional recovery.<sup>12</sup>

Research on functioning across the lifespan is relatively sparse and therefore, the picture of BD in later life is not well understood.<sup>3</sup> The case study of Mr. A (mentioned above) illustrates the potentially diffuse functional impact of OABD, both directly and indirectly. As life expectancy increases and the population ages, the prevalence of BD-related disability among older adults is expected to increase due to various factors associated with aging, such as a decreasing social network size, loss of support from family members, reduced mobility, increased presence of somatic comorbidities, and other aging-related issues.<sup>13</sup> Older age has also been associated with lower psychosocial functioning in BD.<sup>14</sup> In fact, when psychosocial functioning has been compared with younger adult BD patients, worse global psychosocial functioning in OABD, as measured by the functioning assessment short test (FAST) scale,<sup>15</sup> was observed in the areas of occupational functioning, cognitive performance, and leisure time.<sup>16</sup> The potentially accelerated cognitive decline and increased presence of somatic comorbidities can negatively impact functioning, quality of life, and well-being to a greater extent than younger patients. Moreover, a correlation between marked functional impairment in OABD patients and the number of hospitalizations was reported.<sup>17</sup> These findings collectively support the notion that multiple aspects of BD are associated with the function of OABD and highlight the need for the assessment and introduction of appropriate interventions soon after the onset of the disorder, even among OABD.<sup>18</sup>

It is clear that OABD is a multidimensional disorder. To obtain an accurate picture of the current state of OABD patients, it is essential that clinical, psychosocial, medical, and cognitive factors are considered when assessing the function of OABD. In this paper, we aim to give an overview of the different aspects of functioning in OABD, review currently used assessment methods and their limitations, as well as offer recommendations for research and clinical practice regarding the function of OABD.

## 2 | METHODS AND MATERIALS

The OABD ISBD Task Force is a collaboration of international experts from many countries whose main scientific interest is the study of OABD. The present work was developed by 11 experts in the field from the following countries: Brazil, Canada, the Netherlands, Spain, and the United States. Due to the gap in literature on psychosocial functioning in OABD, it was proposed to combine knowledge from experts from all over the world. It was carried out through virtual meetings where the main issues addressed in the present work were reviewed, discussed, and agreed upon to shape the recommendations. It was not necessary to use any standardized formal methods for consensus given the high level of agreement among members.

# 3 | FUNCTIONING IN OABD

#### 3.1 | Definition of functioning

Functioning is a complex construct that involves many interactions and activities in personal, occupational, and recreational contexts.<sup>19,11,20</sup> Despite the importance of psychosocial functioning in BD, there is no clear consensus regarding its definition. Different definitions of psychosocial functioning were examined without reaching a consensus.<sup>21</sup> The experts highlighted the definition provided by the International Classification of Functioning, Disability and Health (ICF). The ICF identifies three levels of human functioning: functioning at the level of the body or body part, the whole person, and the whole person in a social context. This definition adds BIPOLAR DISORDERS - WILEY

to the understanding of what patients with a certain health condition can do in a standard environment (their level of capacity), and what they actually do in their usual environment (their performance level). In fact, it has been working on the development of ICF core sets for BD, specifically designed with the goal of providing a useful standard that can be applied in research, clinical practice, and teaching.<sup>22</sup> Subsequent international consensus identified a total of 38 ICF categories to be included in the Comprehensive Core Set for BD of which 19 ICF categories were chosen as the most significant to constitute the Brief Core Set for BD.<sup>23</sup> Disability, therefore, involves dysfunction at one or more of these same levels: impairments, activity limitations, and participation restrictions.<sup>24</sup>

# 3.2 | Psychosocial functioning

Studies conducted in OABD demonstrate that psychosocial functioning is limited in this population in a large number of areas, such as autonomy, independence, economic management, occupational performance, and interpersonal relationships.<sup>17,25</sup> A recent analysis combining a multitude of data from different countries showed moderate impairments in psychosocial functioning, measured by the Global Assessment of Functioning (GAF<sup>26</sup>) scale, as well as a high association of depressive and manic symptoms with lower psychosocial functioning.<sup>27</sup> Indeed, it is also described that more severe depression, somatic comorbidities, and impaired cognition were all associated with lower functioning in OABD.<sup>28,29</sup> Moreover, findings from the Global Aging & Geriatric Experiments in Bipolar Disorder (GAGE-BD) study<sup>30</sup> suggest that greater severity of symptoms in BD is associated with worse functioning in OABD.<sup>31</sup>

#### 3.3 | Activities of daily living and functioning

Instrumental activities (IADL) and advanced activities of daily living (AADL) are also likely to be impaired in older populations and could reflect the impact of the disease on one's autonomy. They are necessary for living and functioning independently in society (e.g., cooking a meal, shopping, cleaning the house).<sup>32</sup> Education, work, leisure activities, and participation in social networks or community would constitute AADL. Studies using observation-based-in-home assessment have shown decreased ADL ability in OABD.33,34,28 Performance in IADL was found to be associated with lower levels of autonomy in OABD when compared to a healthy control group.<sup>33</sup> In younger adult BD patients, no relation was found between selfreported and observation-based measures of ADL ability, indicating a difference in the perspective between patients and clinicians. This underlines the importance of including both self-reported and observation-based measures since they seem to provide distinct but complementary information.<sup>35</sup> The assessment of ADL should also be included for OABD patients since it captures functioning in activities of daily living beyond psychosocial functioning, in a population at increased risk for impairment of these abilities.

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# 3.4 | Somatic comorbidities, medication use, and functioning

Somatic comorbidity is highly prevalent in OABD, as well as more frequent when compared to healthy older adults and younger individuals with BD.<sup>27,36,37,38,39</sup> It is estimated that OABD suffer from an average of three or four somatic diseases, including hypertension, metabolic syndrome, cardiovascular disease, diabetes mellitus, endocrine abnormalities, arthritis, and respiratory disease (4%-15%), among others.<sup>3,40,41</sup> In a recent study, cardiovascular disease was present in nearly half of all OABD individuals belonging to the GAGE-BD sample.<sup>27</sup> This slightly differed from earlier findings<sup>42</sup> that found that the most frequently observed somatic conditions were obesity, migraine, hypertension, hyperlipidemia, and asthma. They also reported an association between elevated somatic comorbidity burden and several clinical features of BD, including a higher rate of lifetime mood episodes. In the aforementioned GAGE-BD sample, greater somatic burden was not associated with poorer functioning.<sup>26</sup> Similarly, another report did not find that somatic comorbidity was associated with functioning and there did not appear to be an association between medication load, comorbidity, age, and adherence.<sup>43</sup> However, interpretation of these findings should take into account the possibility of a "healthy survivor effect" where individuals who die prematurely or are too ill to participate in research studies may bias sample characteristics in favor of older adults who are doing relatively well. In addition, some longitudinal reports detected a more rapid accumulation of chronic physical illness over time and a lower self-perception of physical health in OABD.<sup>38</sup> Thus, results on the specific relationship between somatic burden and functioning are controversial, but since the frequency and somatic illness and poorer physical health might increase the complexity of OABD and could have a significant impact on functioning, this association deserves attention either in research or clinical practice.

#### 3.5 | Cognitive performance and functioning

It is estimated that roughly 40% of OABD present cognitive dysfunction,<sup>44,45</sup> exhibiting deficits in almost all cognitive domains, especially in memory, attention, processing speed, working memory, and executive functions.<sup>46,47</sup> Since cognitive dysfunction often occurs on a permanent basis and may worsen throughout the course of BD,<sup>48,49</sup> one may argue that BD may have an increased negative effect on self-care activities in daily life (i.e., ADL) as well as on psychosocial functioning. An earlier study<sup>50</sup> revealed that self-care abilities of a group of OABD were worse when compared with a healthy control group. Different aspects of cognitive functioning are related to abilities for self-care.<sup>51,52</sup> Likewise, instrumental activities of daily living (IADL) have been associated with processing speed and executive functions.<sup>32</sup>

Considering cognitive heterogeneity, it has been widely reported that middle-aged samples of people with BD display different profiles of cognitive dysfunction: a group with a preserved cognitive performance, a selectively impaired group with deficits in certain cognitive domains, and, finally, a third group presenting with a broader and more severe range of cognitive dysfunction.<sup>53-55</sup> A similar distribution has been observed in OABD, although with different nuances in which the intermediate group already demonstrated impairment in all cognitive domains and a smaller group of patients exhibited severe cognitive dysfunction.<sup>44</sup> This same heterogeneity has been found regarding psychosocial functioning, which seems to be related to cognitive performance.<sup>56</sup> Specifically in older adults, OABD with an intact cognitive profile are indistinguishable from controls in terms of psychosocial functioning, demonstrating that psychosocial functioning also shows diverse profiles.<sup>57</sup> Better cognitive performance at baseline has been associated with lower dependence and less need for support with IADLs at follow-up.<sup>27</sup>

Social functioning, understood as those capacities or abilities to maintain, establish, and participate in social activities and interpersonal relationships, is one of the areas commonly affected by cognitive dysfunction.<sup>58,59,13</sup> Specifically, impairments in attention, verbal memory, and executive functions have been associated with poorer social functioning as measured by the Social and Occupational Functioning Assessment Scale (SOFAS) and the FAST-O subscales.<sup>60,61</sup>

# 4 | ASSESSMENT OF FUNCTIONING

One of the challenges of understanding functioning in patients with BD is the great heterogeneity of instruments available for its assessment. These vary in terms of domains, number of items, method of administration, and scoring criteria, among others.<sup>62</sup> This limits the harmonization of results and prevents the drawing of strong conclusions about functional performance in this group of patients. Psychosocial functioning in the elderly has unique characteristics that are distinct from the younger population, making it necessary to consider these differences in order to achieve an accurate knowledge about functioning and its implications for the design of interventions.

#### 4.1 | Main limitations of the current instruments

The assessment of functioning in OABD presents potential limitations, especially driven by the available instruments. Overall, the main limitations are related to the fact that there are no specific instruments targeted for assessing functioning in OABD. Thus, the available alternatives for assessment are as follows: (1) scales validated in BD but not in older adults, (2) scales that assess functioning in the general population, or (3) instruments validated for older adults but not specific for BD. A recent systematic review<sup>63</sup>, aimed at quantifying which scales are being used to assess functioning in OABD, concluded that the most frequent scale was the GAF, which is not specific for BD. In contrast,

few studies used scales that are validated in BD, such as The Strauss– Carpenter scale (SCS) or the FAST-O scale.<sup>61</sup>

## 4.2 | Currently used assessment instruments

Commonly used scales for assessing functioning are not specifically developed to assess areas of functional impairment in BD or are designed for monitoring health levels in whole communities. This is the case, for example, for the frequently used GAF.<sup>3</sup> A previous systematic review, despite it was not specifically focused in OABD, demonstrated a high utilization of GAF and FAST scales for assessment functioning, in both observational and interventional studies. In addition, it emphasized the use of specific domains such as work, social, family, relationships, and its relation with cognitive functioning and clinical variables.<sup>64</sup>

## 4.2.1 | GAF

The GAF<sup>65</sup> is the most commonly used clinician rating scale to measure disability, at least in the United States.<sup>66</sup> This scale has the limitation that it provides a total score without differentiating between functional areas, and its results are highly influenced by the presence of clinical, but not somatic symptoms. Scores range from 0 to 100, with higher scores indicating better levels of functioning. The GAF assesses psychological, social, and occupational functioning, and, due to its quick and easy administration, it is frequently used by clinicians. However, the GAF scale is not specifically validated for the assessment of people with BD, therefore, some specific functioning areas cannot be represented by using this instrument, thus preventing a complete description of the level of functioning. The rating can be based on information such as an interview or questionnaire, medical records, or information from caregivers or close relatives.

# 4.2.2 | FAST and FAST-O

The functioning assessment short test (FAST)<sup>15</sup> was developed for the clinical evaluation of functional impairment presented by patients diagnosed with BD. This easy-to-apply and brief scale was designed based on an earlier reported definition of functioning,<sup>19</sup> and includes the assessment of the most important domains affected in BD: autonomy, occupational and cognitive functioning, finance management, interpersonal relationships, and leisure time. Additionally, it provides different cut-off values in order to differentiate categories of severity of functional impairment.<sup>6</sup> The FAST is sensitive to change and is currently used in many randomized clinical trials to test the impact of interventions on functional capacity.<sup>67</sup> FAST score ranges from 0 to 72, with higher scores indicating worsening function.

Since the FAST is not specifically applicable for the older adult population, an adaptation of the FAST scale has been developed

and validated for adults over 50 years, the FAST-O<sup>61</sup> that aims to more accurately capture potential alterations in functioning among older people.<sup>61</sup> The main changes were made to the domain of occupational functioning since it is common to find a high proportion of retired adults among older adults. Hence, the domain of occupational functioning was replaced by the domain of "societal functioning," which also includes activities such as volunteer work or taking care of grandchildren. The FAST-O is an indicator of a patient's current level of daily functioning, and therefore focuses on performance.

# 4.2.3 | WHODAS 2.0

The use of the World Health Organization Disability Assessment Schedule 2.0 (WHODAS 2.0)<sup>68</sup> is also recommended by DSM-5. The WHODAS 2.0 is a clinician-rated instrument that assesses functioning and disability independently of clinical diagnosis. It assesses six independent areas of functioning: (1) Cognition-understanding and communicating; (2) Mobility-moving and getting around; (3) Self-care-hygiene, dressing, eating, and staying alone; (4) Getting along-interacting with other people; (5) Life activities-domestic responsibilities, leisure, work, and school; (6) Participation-joining in community activities. It provides an overall score and also by functioning areas. It assesses disability using a Likert scale from 0 (no difficulty) to 5 (extreme difficulty). The higher the total score, the greater disability. The time frame is the past 30 days and the number of days of experienced difficulty is also considered. It includes a total of 36 items but it is also available in a 12-item version. It also has informant-rated versions. Finally, although it was not initially designed for BD, it has subsequently been validated for this population, resulting in suitable psychometric properties when applied to patients with BD.69

## 4.2.4 | UPSA

The UPSA scale (UCSD Performance-based skills assessment)<sup>70</sup> is focused on the ability to perform interactive and social tasks such as planning, understanding, finances, communication skills, mobility, and home management through an ecological approach, including tasks directly related to daily functioning. It is scored from 0 to 100, with higher scores indicating worse performance. Scores are performance-based rather than self- or clinician-rated. It tends to be very highly correlated with measures of cognitive performance, but may not capture unique aspects of functioning over and above those driven by cognitive dysfunction. This scale has some potential limitations such as the lack of updating on how some items are assessed (i.e., no use of technologies in the tasks) which may hinder an adequate representation of functioning in modern times. In addition, the content of some items may be highly biased by cultural components, hampering a real representation of the actual patient's performance.

## 4.2.5 | SOFAS

The SOFAS<sup>71</sup> evaluates social, psychological, and occupational functioning through a hypothetical health-disease continuum. In contrast to the GAF scale, the development of the SOFAS scale arose from the need to assess global functioning, but not necessarily due to psychiatric clinical symptoms. Moreover, the scale does not include items designed to assess impairment or difficulties due to physical or medical conditions. It is quick and easy to use by means of a single overall score from 0 to 100 in which a higher score indicates better performance. It does not provide information on functioning in separate areas, and it was not designed for the assessment of people with mental health problems.

# 4.2.6 | VRFCAT

The Virtual Reality Functional Capacity Assessment Tool (VRFCAT)<sup>72</sup> uses a realistic virtual environment to assess the current level of functioning. The VRFCAT assesses a subject's ability to complete instrumental activities associated with a shopping trip, including searching the pantry at home, making a shopping list, taking the correct bus to the grocery store, shopping in the store, paying for groceries, and returning home. The alternate forms are a unique feature of this assessment, and the scenarios have the potential to be updated and cross-culturally adapted in geographical regions where computer use, public transportation, and grocery stores are common. In previous studies, the VRFCAT has demonstrated high test-retest reliability and shown sensitivity to functional impairment. However, it is required to have a computer in order to conduct this test and the subject needs to be minimally familiar with the use of a keyboard or mouse is necessary. It does not provide information about interpersonal relationships or social functioning and was not validated specifically for OABD.

## 4.2.7 | AMPS

The assessment of motor and process skills (AMPS<sup>73</sup>) evaluates the performance and quality of execution in ADL in a natural, task-relevant environment (i.e., home) through different familiar tasks for the patient (preparing a snack, performing household activities, getting dressed, shopping for food, etc.).<sup>73</sup> The AMPS assesses the motor and process skills including a total of 16 ADL motor items and 20 ADL process skill items, and thus uses an ecological approach. The scoring is based on observation of the patient performing daily life tasks on a Likert scale from 4 to 1, where lower scores indicate poor performance. It also allows for culturerelevant evaluation while remaining free from cross-cultural bias. Its administration does not require special equipment. AMPS is destined for younger adult BD patients,<sup>74</sup> but it is not specifically validated for OABD. Despite the previous advantages, this scale presents some limitations. It is designed to be applied only by occupational therapists and it takes a bit longer for applying (30–40 mins) than most other instruments. Despite its high ecological value, the fact that it should be performed in a real environment may increase the available resources (time, employees) thus decreasing the practicality or effectiveness of its use.

## 4.2.8 | SAS

The Social Adjustment Scale (SAS<sup>75</sup>) consists of 54 items that are divided into four areas of social functioning: work activities including work for pay, housewife/househusband, or student (work), spare time and leisure activities (spare), and personal relationships. Higher scores on the SAS reflect poorer functional adjustment. While it offers an assessment of functioning in different roles, assessment takes longer than with other instruments. The SAS has also been validated for healthy older adults,<sup>76</sup> but has not been validated yet in patients with BD (Table 1).

## 4.3 | Other potential sources of information

As mentioned earlier, there is a great variability in the assessment of functioning. The choice for one scale or another could determine differences in functional performance frequently found among studies. The current instruments have limitations that prevent comprehensive assessment of OABD. Frequently, functioning assessment scales are not fully applicable for OABD patients, whereas they mostly include areas that are less important for them. For instance, occupational functioning in the case of paid work or volunteer work may not apply to those with OABD. When addressing older adults, including adults over 50 years old, a high heterogeneity can be found in the occupational area, given that some patients will be within working age while other patients could be retired. In this sense, it is also important to collect information beyond work performance, that is, related to involvement in community activities such as volunteering, caring for family members, or organizing activities. Further OABD-tailored instruments targeted to assess functioning are needed to enhance research in this field and clinical management.

## 4.3.1 | Ecological momentary assessment

A novel source of information concerning functioning in OABD can be found in ecological momentary assessment (EMA). EMA refers to a range of assessment methods that share several features: they use repeated sampling, they assess close in time to the actual experience, and the subject is in their natural environment during the assessment. EMA offers multiple advantages, where it is thought to be less biased by cognitive dysfunction or current mood. EMA methods have been demonstrated to be effective in monitoring

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 TABLE 1
 Description, strengths, and limitations of the current scales for assessing functioning.

Scale	Description	Strengths	Limitations	
GAF	<ul> <li>It assesses global functioning considering psychological, social, and occupational factors along a hypothetical health-disease continuum (1-100).</li> <li>It assesses functioning considering the last 12 months.</li> <li>Rated from 0 to 100. Higher scores indicate better functioning.</li> <li>Applied by a clinician.</li> </ul>	<ul> <li>Brief to administer.</li> <li>No specific training is required.</li> <li>Designed for mental illness' functioning.</li> </ul>	<ul> <li>It is not divided by areas and provides a single total score.</li> <li>The score is highly influenced by the presence of clinical symptomatology.</li> <li>The assessment period is broad.</li> <li>Not designed specifically for BD.</li> <li>It does not provide thresholds of severity.</li> <li>It is not specifically focused on elderly.</li> </ul>	
FAST and FAST-O	<ul> <li>It assesses psychosocial functioning in six areas: autonomy, occupational functioning, cognitive functioning, financial, interpersonal, and leisure.</li> <li>Clinician-administered instrument.</li> <li>It takes approximately 15 minutes of application.</li> <li>It assesses the severity of the difficulties in a Likert scale from none to several difficulties. Scored from 0 to 72 in which the higher score, the worse functioning.</li> <li>The assessment period corresponds to the last 15 days.</li> </ul>	<ul> <li>It provides information on six domains of daily living.</li> <li>It provides not only an overall score, but also a score for each domain.</li> <li>Brief and easy to apply.</li> <li>Specially designed for mental disorders and well-validated for BD.</li> <li>There is a version adapted to OABD.</li> <li>The results show the level of actual functioning independently of the clinical status of the patient.</li> <li>It has different validated cut- off points to differentiate the severity of the impairment.</li> </ul>	<ul> <li>It requires a brief training for administering and scoring.</li> </ul>	
WHODAS 2.0	<ul> <li>It is a measure that assesses disability in adults aged 18 years and older.</li> <li>Six functioning areas including cognition, mobility, self-care, interpersonal relationships, life activities, and participation in community activities</li> <li>Includes a total of 36 items. Each item contains a 5-point Likert scale (from No Difficulty to Extreme Difficulty). The number of days the patient had that difficulty is also considered.</li> <li>It assesses functioning in the past 30 days.</li> <li>It is administered by a clinician.</li> </ul>	<ul> <li>It has a brief (12-item) and a self-applied version.</li> <li>It allows rating an overall disability score and also by functioning areas.</li> <li>It also includes physical and general health factors.</li> <li>Easy to access.</li> <li>Validated for BD</li> </ul>	<ul> <li>Long administration time.</li> <li>Administration and scoring training is required.</li> <li>Tool not specifically focused on older ages.</li> </ul>	

(Continues)

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### TABLE 1 (Continued)

Scale	Description	Strengths	Limitations	
UPSA	<ul> <li>Role playing test that assesses ability in different areas based on living skills, such as finance, communication, organization or planning, mobility, and home management.</li> <li>Interviewer administered.</li> <li>Scored from 0 to 100, lower scores indicate better performance.</li> <li>Evaluates functioning at the moment of the assessment.</li> </ul>	<ul> <li>It is a highly ecological assessment, including tasks that are related to daily functioning.</li> <li>It evaluates functioning considering different domains.</li> <li>A brief version is available (UPSA-B).</li> </ul>	<ul> <li>It is long to administer and the clinician may be trained in its administration and scoring.</li> <li>The results could be influenced by cognitive status.</li> <li>It has a strong cultural bias.</li> <li>Some items are outdated.</li> <li>Not specifically designed for mental illness nor BD.</li> <li>It is not specifically focused on older ages.</li> </ul>	
SOFAS	<ul> <li>It is a measure of functioning focused on social and occupational skills.</li> <li>It includes impairments caused by physical and psychiatric disorders.</li> <li>Scores range from 0 to 100, in which lower scores represent lower functioning.</li> <li>Only considers performance at the moment of the assessment.</li> </ul>	<ul> <li>Easy and quick to apply.</li> <li>No specific training is required.</li> </ul>	<ul> <li>It is only focused on two areas of functioning.</li> <li>Provides a single overall score, not divided by domains.</li> <li>Not specific for mental health.</li> <li>It is not specifically focused on older ages.</li> </ul>	
VRFCAT	<ul> <li>It uses a realistic virtual environment focused on instrumental activities</li> <li>The assessment is computerized</li> <li>It considers functional performance at the moment of the assessment.</li> <li>Scores are based on time, errors, and progression</li> </ul>	<ul> <li>No specific training is required.</li> <li>Real-life situations are used in the assessment</li> <li>Easy to apply when a computer is available</li> </ul>	<ul> <li>Availability of a computer is required</li> <li>It is not specifically focused on older adults</li> <li>It does not take into account social aspects of functioning</li> </ul>	
AMPS	<ul> <li>Evaluates the performance and quality of execution in ADL</li> <li>Measures functioning through familiar tasks for the patient</li> <li>Scores are based on observation</li> </ul>	<ul> <li>Free from cross- cultural bias</li> <li>Uses a natural, task-relevant environment</li> <li>Administration does not require special equipment</li> </ul>	<ul> <li>It is not specifically validated for OABD</li> <li>Designed to be applied only by occupational therapists</li> <li>Takes longer to apply than other instruments</li> </ul>	
SAS	<ul> <li>It measures social adjustment in four areas</li> <li>It is self-rated</li> <li>Higher scores reflect poorer adjustment</li> </ul>	<ul> <li>It is developed for patients with depressive symptoms</li> <li>It is validated in older adults</li> </ul>	<ul> <li>Applying takes longer than other instruments</li> <li>It is not specifically focused on bipolar disorder</li> </ul>	

Abbreviations: AMPS: Assessment of Motor and Process Skills; FAST: Functioning Assessment Short Test; GAF: Global Assessment of Functioning; SAS: Social Adjustment Scale SOFAS: Social and Occupational Functioning Assessment Scale; UPSA: UCSD Performance-based skills assessment; VRFCAT: Virtual Reality Functional Capacity Assessment Tool; WHODAS 2.0: World Health Organization Disability Assessment Schedule 2.0.

mood changes and cognitive impairment.<sup>77,78</sup> In addition to using objective and accurate data, these kinds of tools provide real-time information, eliminating, thus, recall biases due to retrospective reports.<sup>79,80</sup> The assessment is brief and can be used by patients during their daily routines. However, there is limited standardization of measures or scoring. EMA has been used as a research tool mostly, although there is good potential for clinical application. Up until now, EMA has been used in the assessment of younger adults with BD, but not OABD.

# 4.3.2 | Caregivers or relatives as informants

Although OABD can be reliable informants of their actual level of functioning, in some cases, collateral information may contribute to increase the reliability and validity of the assessment. To overcome this, it is essential for the clinician to consider the need for enriching information with external informants (i.e., relatives, caregivers) who spend enough time with the patient to accurately describe their daily functioning.

# 5 | FUTURE RECOMMENDATIONS

## 5.1 | General recommendations

Current available data suggest that OABD has distinguishing features that merit special attention. Therefore, assessment of psychosocial may differ from those used for younger people with BD.

First, OABD are particularly vulnerable to experiencing functional impairment in different domains, even when they are in clinical remission. Thus, it is important to include the assessment of functioning into routine clinical practice, albeit especially during full or partial remission from mood symptoms if possible. It is also suggested to regularly repeat measurements, recommended every 6 months or after every clinical application, to make reliable estimates of the current level of functioning. Moreover, in the context of psychological interventions or clinical trials, it is encouraged to include the assessment of functioning at least at baseline point and post-intervention evaluation. Additionally, including repeated measures of functioning in the follow-up point, after treatment completion (i.e., 1 year after the inclusion or starting the intervention), would be helpful to determine whether the potential changes related to the treatment are maintained over the long term and to monitor the evolution of functional performance.

As aforementioned, functioning includes different domains, such as autonomy, interpersonal relationships, and social functioning. Therefore, it is important to include multiple areas of functioning in any assessment, and most existing scales are either global rating scales or are not entirely relevant for OABD. It is, therefore, important to consider the use of instruments validated for the assessment of people with BD and that have been adapted for use among older adults. The FAST-O is the instrument that better fits this profile at the time of writing.

Since functioning is a complex construct, it is important to include various sources of information in addition to self-report, such as caregivers. As cognitive functioning is associated with other aspects of functioning,<sup>81</sup> especially verbal memory,<sup>82</sup> the inclusion of objective cognitive measures may be helpful. Regarding the multidimensionality of functioning, even with using a validated instrument, clinicians should be aware of any other domains that may have an impact on a patient's level of functioning at the moment of the assessment. Data on functioning and OABD remain sparse, so that it is important for clinicians and researchers to harmonize their assessments in order to facilitate research on this topic. The recommendations are summarized in Table 2.

# 5.2 | Assessment of functioning: Adaptation and development of instruments

The assessment of functioning is essential for obtaining an integral and holistic approach of the patient. Most often used instruments are not applicable to the older patient population. New assessment instruments should be specifically designed and validated for OABD, TABLE 2 Quick guide for addressing assessment of functioning in OABD.

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- Including the assessment of functioning as a routine in clinical practice to achieve better understanding of the patient's status is advisable.
- It is advisable to assess functioning regularly (e.g., every 6 months or every year) for monitoring its evolution.
- It is recommended to use those instruments that include the largest number of functioning domains in the assessment such as autonomy, interpersonal relationships, social involvement and leisure time, etc.
- The use of instruments specifically designed for BD and adapted for older adults is highly recommended. The FAST-O is currently the only scale that meets these requirements.
- Clinicians should try to include, whenever possible, other sources of information, such as reliable informants (caregivers or relatives), to assess functioning in OABD to avoid bias due to lack of insight or cognitive dysfunction, for instance.
- Consider cognitive performance in the assessment of functioning, as the two constructs are strongly associated.
- Concerning research, clinicians should try to homogenize and harmonize data to facilitate research and increase its quality.

and existing instruments should be adapted where possible. These instruments should include the above-mentioned factors that impact functioning in OABD. In addition, some homogenization in the use of instruments to assess functioning is recommended, in order to harmonize data between different countries or centers and facilitate research on this topic.<sup>29</sup> In that sense, this task force recommends the use of FAST-O<sup>61</sup> as it has potential advantages compared to other scales: (1) it is designed and validated for BD, (2) it has an adapted version for older ages, (3) it collects the domains of functioning mainly affected in BD, and (4) it is brief and easy to apply.

## 5.3 | Combining different sources of information

Due to the complexity of the concept "functioning," different information sources should be combined when possible. For instance, it would be helpful to collect the information of a reliable informant, such as a caregiver or a relative. Moreover, the combination of selfreport instruments with clinician-based rating scales might provide useful information. To do so, it might be helpful to also use the expertise of different mental health care professionals, like neuropsychologists and nurses.

### 5.4 | Development of treatment strategies

Although more work is needed, some groups are already working on adapting treatments to improve the functioning of OABD patients. For example, a recent study has focused on the adaptation of the Functional Remediation program in bipolar patients,<sup>83,84</sup> which has been proven to be effective in BD, for the older population with

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BD (NCT05186337).<sup>85</sup> A cognitive remediation intervention was also adapted for OABD using a program that includes cognitive remediation, physical exercise, and social encounters with peers.<sup>86</sup> Researchers are also looking into biomarkers and predictors of response to cognitive and functional remediation.<sup>87</sup>

# 6 | CONCLUSIONS

The construct of daily functioning is complex. However, psychosocial functioning should be considered a core feature of OABD. As also illustrated by the case study in Section 1.1, the aging process involves a series of social, somatic, and cognitive changes that affect different aspects of everyday function in OABD when compared with younger adults with BD. Psychosocial functioning performance in OABD is still understudied and there is a lack of consensus on how to assess and address it in OABD. Special consideration should be given to the differentiating factors in OABD to achieve a better understanding of functioning of this group of patients, especially the chronicity of the disease, medical comorbidities, and the presence of depressive episodes. In summary, we recommend (1) the use of scales that are specifically designed for BD and adapted for older adults and also include functioning in multiple domains instead of providing a single global score; (2) completing the information with a variety of sources (such as reliable informants); (3) include functioning in the clinical assessment and assess it periodically, and (4) homogenize and harmonize data to facilitate research. A better understanding of psychosocial functioning in OABD will contribute to guiding the development of interventions designed to maintain or improve the daily function and quality of life of OABD.

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### DATA AVAILABILITY STATEMENT

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

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### REFERENCES

- 1. Fagiolini A, Forgione R, Maccari M, et al. Prevalence, chronicity, burden and borders of bipolar disorder. J Aff Disord. 2013;148:161-169.
- 2. Burdick KE, Millett CE. Cognitive heterogeneity is a key predictor of differential functional outcome in patients with bipolar disorder. *Eur Neuropsychopharmacol.* 2021;53:4-6.
- Sajatovic M, Strejilevich SA, Gildengers AG, et al. A report on olderage bipolar disorder from the international society for bipolar disorders task force. *Bipolar Disord*. 2015;17:689-704. doi:10.1111/ bdi.12331
- Chen P, Dols A, Rej S, Sajatovic M. Update on the epidemiology, diagnosis, and treatment of mania in older-age bipolar disorder. *Curr Psychiatry Rep.* 2017;19:46.
- Dols A, Kessing LV, Strejilevich SA, et al. International Society for Bipolar Disorders Task Force for older adults with bipolar disorder. Do current national and international guidelines have specific recommendations for older adults with bipolar disorder? A brief report. Int J Geriatr Psychiatry. 2016;31:1295-1300.
- Bonnín CDM, Reinares M, Martínez-Arán A, et al. Improving functioning, quality of life, and well-being in patients with bipolar disorder. Int J Neuropsychopharmacol. 2019;22:467-477.
- Samalin L, de Chazeron I, Vieta E, Bellivier F, Llorca PM. Residual symptoms and specific functional impairments in euthymic patients with bipolar disorder. *Bipolar Disord*. 2016;18:164-173.
- Sletved KSO, Ziersen SC, Andersen PK, Vinberg M, Kessing LV. Socio-economic functioning in patients with bipolar disorder and their unaffected siblings - results from a nation-wide populationbased longitudinal study. *Psychol Med.* 2021;26:1-8.

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- 9. Depp CA, Jeste DV. Bipolar disorder in older adults: a critical review. *Bipolar Disord*. 2004;6:343-367.
- Haro JM, Reed C, Gonzalez-Pinto A, et al. 2-year course of bipolar disorder type I patients in outpatient care: factors associated with remission and functional recovery. *Eur Neuropsychopharmacol.* 2011;21:287-293.
- Tohen M, Hennen J, Zarate CM, et al. Two-year syndromal and functional recovery in 219 cases of first-episode major affective disorder with psychotic features. Am J Psychiatry. 2000;157:220-228.
- 12. Tohen M, Zarate CA, Hennen J, et al. The McLean-Harvard firstepisode mania study: prediction of recovery and first recurrence. *Am J Psychiatry*. 2003;160:2099-2107.
- Van Liempt S, Dols A, Schouws S, Stek ML, Meesters PD. Comparison of social functioning in community-living older individuals with schizophrenia and bipolar disorder: a catchment areabased study. *Int J Geriatr Psychiatry*. 2017;32:532-538.
- Sanchez-Moreno J, Bonnin CM, González-Pinto A, et al. Factors associated with poor functional outcome in bipolar disorder: sociodemographic, clinical, and neurocognitive variables. *Acta Psychiatr Scand.* 2018;138:145-154.
- Rosa AR, Sánchez-Moreno J, Martínez-Aran A, et al. Validity and reliability of the functioning assessment short test (FAST) in bipolar disorder. CP & EMH. 2007;3:5.
- Montejo L, Solé B, Jiménez E, et al. Aging in bipolar disorder: cognitive performance and clinical factors based on an adulthoodlifespan perspective. J Affect Disord. 2022a;312:292-302.
- Comes M, Rosa A, Reinares M, Torrent C, Vieta E. Functional impairment in older adults with bipolar disorder. J Nerv. 2017;205:443-447.
- Kupka R, Hillegers M. Early intervention and staging bipolar disorder: conceptual and clinical dilemmas. *Eur Neuropsychopharmacol.* 2022;63:9-11.
- 19. Zarate CA, Tohen M, Land M, Cavanagh S. Functional impairment and cognition in bipolar disorder. *Psychiatry* Q. 2002;71:309-329.
- Rabelo-da-Ponte FD, Verdolini N, Goularte JF, et al. Identifying pathways between psychiatric symptoms and psychosocial functioning in the general population. *Eur Neuropsychopharmacol.* 2023;67:86-94.
- Tohen M, Frank E, Bowden CL, et al. The International Society for Bipolar Disorders (ISBD) task force report on the nomenclature of course and outcome in bipolar disorders. *Bipolar Disord*. 2009;11:453-473.
- Vieta E, Cieza A, Stucki G, et al. Developing core sets for persons with bipolar disorder based on the international classification of functioning. *Disability and Health Bipolar Disord*. 2007;9:16-24.
- Ayuso-Mateos JL, Avila CC, Anaya C, Cieza A, Vieta E. Bipolar disorders Core sets expert group. Development of the international classification of functioning, disability and health core sets for bipolar disorders: results of an international consensus process. *Disabil Rehabil*. 2013;35:2138-2146.
- 24. World Health Organization. Towards a Common Language for Functioning, Disability and Health, ICF. WHO; 2002.
- Depp CA, Davis CE, Mittal D, Patterson TL, Jeste DV. Healthrelated quality of life and functioning of middle-aged and elderly adults with bipolar disorder. JCP. 2006;67:8132-8221.
- 26. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. 4th ed. American Psychiatric Association; 2000.
- 27. Sajatovic M, Dols A, Rej S, et al. Bipolar symptoms, somatic burden, and functioning in older-age bipolar disorder: analyses from the Global Aging & Geriatric Experiments in bipolar disorder database project. *Bipolar Disord*. 2022;24:195-206.
- 28. Gildengers A, Tatsuoka C, Bialko C, et al. Correlates of disability in depressed older adults with bipolar disorder. *Cut Edge Psychiatry Pract*. 2013;2013:332-338.
- Beunders AJM, Kemp T, Korten NCM, et al. Cognitive performance in older-age bipolar disorder: investigating psychiatric characteristics, cardiovascular burden and psychotropic medication. Acta Psychiatr Scand. 2021;144:392-406.

- Sajatovic M, Eyler LT, Rej S, et al. The Global Aging & Geriatric Experiments in bipolar disorder database (GAGE-BD) project: understanding older-age bipolar disorder by combining multiple datasets. *Bipolar Disord*. 2019;21:642-649.
- 31. Orhan M, Millett C, Klaus F, et al. Comparing continuous and harmonized measures of depression severity in older adults with bipolar disorder: relationship to functioning. *J Affect Disord*. 2022;314:44-49.
- Kempen GI, Miedema I, Ormel J, Molenaar W. The assessment of disability with the Groningen activity restriction scale. Conceptual framework and psychometric properties. Soc Sci Med. 1996;43:1601-1610.
- Gildengers AG, Butters MA, Chisholm D, et al. Cognitive functioning and instrumental activities of daily living in late-life bipolar disorder. Am J Geriatr Psychiatry. 2007;15:174-179.
- 34. Depp CA, Mausbach BT, Eyler LT, et al. Performance-based and subjective measures of functioning in middle-aged and older adults with bipolar disorder. *J Nerv.* 2009;197:471-475.
- Decker L, Träger C, Miskowiak K, Wæhrens EE, Vinberg M. Ability to perform activities of daily living among patients with bipolar disorder in remission. *Edorium J Disabil Rehabil*. 2017;3:69-79.
- Nivoli AM, Murru A, Pacchiarotti I, et al. Bipolar disorder in the elderly: a cohort study comparing older and younger patients. Acta Psychiatr Scand. 2014;130:364-373.
- Lala SV, Sajatovic M. Medical and psychiatric comorbidities among elderly individuals with bipolar disorder: a literature review. J Geriatr Psychiatry Neurol. 2012;25:20-25.
- Almeida OP, Dols A, Blanken MAJT, et al. Physical health burden among older men and women with bipolar disorder: results from the Gage-Bd collaboration. *Am J Geriatr Psychiatry*. 2022;30:727-732.
- Beunders AJM, Kok AAL, Kosmas PC, et al. Physical comorbidity in older-age bipolar disorder (OABD) compared to the general population - a 3-year longitudinal prospective cohort study. J Affect Disord. 2021;288:83-91.
- 40. Dols A, Beekman A. Older Age Bipolar Disorder. *Clin Geriatr Med*. 2020;36:281-296.
- 41. Rise IV, Haro JM, Gjervan B. Clinical features, comorbidity, and cognitive impairment in elderly bipolar patients. *Neuropsychiatr Dis Treat*. 2016;12:1203-1213.
- 42. Kemp DE, Sylvia LG, Calabrese JR, et al. General medical burden in bipolar disorder: findings from the Li TMUS comparative effectiveness trial. *Acta Psychiatr Scand*. 2014;129:24-34.
- 43. Eyler LT, Aebi ME, Daly RE, et al. Understanding aging in bipolar disorder by integrating archival clinical research datasets. Am J Geriatr Psychiatry. 2019;27:1122-1134.
- 44. Gildengers AG, Butters MA, Seligman K, et al. Cognitive functioning in late-life bipolar disorder. *Am J Psychiatry*. 2004;161(4):736-738.
- 45. Montejo L, Jiménez E, Solé B, et al. Identifying neurocognitive heterogeneity in older adults with bipolar disorder: a cluster analysis. *J Affect Disord*. 2022b;298:522-531. doi:10.1016/j.jad.2021.11.028
- 46. Montejo L, Torrent C, Jiménez E, et al. International Society for Bipolar Disorders (ISBD) older adults with bipolar disorder (OABD) task force. Cognition in older adults with bipolar disorder: an ISBD task force systematic review and meta-analysis based on a comprehensive neuropsychological assessment. *Bipolar Disord*. 2022c;24:115-136.
- Samamé C, Martino DJ, Strejilevich SA. A quantitative review of neurocognition in euthymic late-life bipolar disorder. *Bipolar Disord*. 2013;15:633-644.
- Robinson LJ, Ferrier IN. Evolution of cognitive impairment in bipolar disorder: a systematic review of cross-sectional evidence. *Bipolar Disord*. 2006;8:103-116.
- 49. Martinez-Aran A, Vieta E, Torrent C, et al. Functional outcome in bipolar disorder: the role of clinical and cognitive factors. *Bipolar Disord*. 2007;9:103-113.
- 50. Pennarts HM, Schouws SNTM, Bongers IMB. Cognitive functioning in relation to self-care in elderly persons with a bipolar disorder. *Clin Gerontol.* 2014;37:419-428.

WILEY-BIPOLAR DISORDERS

- McCue M, Rogers JC, Goldstein G. Relationships between neuropsychological and functional assessment in elderly neuropsychiatric patients. *Rehabil Psychol.* 1990;35:91-99.
- Nadler JD, Richardson ED, Malloy PF, Marran ME, Brinson MEH. The ability of the dementia rating scale to predict everyday functioning. Arch Clin Neuropsychol. 1993;8:449-460.
- Burdick KE, Russo M, Frangou S, et al. Empirical evidence for discrete neurocognitive subgroups in bipolar disorder: clinical implications. *Psychol Med.* 2014;44:3083-3096.
- 54. Solé B, Jiménez E, Torrent C, et al. Cognitive variability in bipolar II disorder: who is cognitively impaired and who is preserved. *Bipolar Disord*. 2016;18:288-299.
- 55. Kjærstad HL, Poulsen E, Vinberg M, Kessing LV, Miskowiak KW. Differential trajectory of cognitive functions in neurocognitive subgroups of newly diagnosed patients with bipolar disorder and their unaffected first-degree relatives - a longitudinal study. J Affect Disord. 2022;311:115-125.
- Solé B, Bonnin CM, Jiménez E, et al. Heterogeneity of functional outcomes in patients with bipolar disorder: a cluster-analytic approach. Acta Psychiatr Scand. 2018;137:516-527.
- 57. Martino DJ, Marengo E, Igoa A, Strejilevich SA. Neurocognitive heterogeneity in older adults with bipolar disorders. *Psychiatry Res.* 2018;262:510-512.
- Orhan M, Korten N, Stek M, Comijs H, Schouws S, Dols A. The relationship between cognitive and social functioning in older patients with bipolar disorder. J Affect Disord. 2018;240:177-182.
- Tsai SY, Kuo CJ, Chung KH, Huang YL, Lee HC, Chen CC. Cognitive dysfunction and medical morbidity in elderly outpatients with bipolar disorder. *Am J Geriatr Psychiatry*. 2009;17:1004-1011.
- Paans NP, Korten N, Orhan M, et al. Is social functioning in older age patients with bipolar disorder associated with affective and/or non-affective cognition? *Int J Geriatr Psychiatry*. 2022;37:1-9.
- Orhan M, Korten N, Kupka R, et al. Reliability and validity of the functioning assessment short test for older adults with bipolar disorder (FAST-O). *Int J Bipolar Disord*. 2020;8:28.
- 62. Rej S, Quayle W, Forester BP, et al. Measurement tools for assessment of older age bipolar disorder: a systematic review of the recent global literature. *Bipolar Disord*. 2018;20:359-369.
- 63. Tyler E, Lobban F, Hadarag MB. A systematic review of psychosocial functioning and quality of life in older people with bipolar disorder. J Affect Disord. 2022;9:100371.
- 64. Chen M, Fitzgerald HM, Madera JJ, Tohen M. Functional outcome assessment in bipolar disorder: a systematic literature review. *Bipolar Disord*. 2019;21:194-214.
- Jones SH, Thornicroft G, Coffey M, Dunn G. A brief mental health outcome scale-reliability and validity of the global assessment of functioning (GAF). *BJPsych*. 1995;166:654-659.
- Von Korff M, Andrews G, Delves M, Regier DA, Narrow WA. Assessing activity limitations and disability among adults. *The Conceptual Evolution of DSM-5*. Arlington VA; American Psychiatric Publishing; 2010:163-188.
- 67. Rosa AR, Reinares M, Amann B, et al. Six-month functional outcome of a bipolar disorder cohort in the context of a specializedcare program. *Bipolar Disord*. 2011;13:679-686.
- Üstün TB, Kostanjsek N, Chatterji S, Rehm J. Measuring Health and Disability: Manual for WHO Disability Assessment Schedule WHODAS 2.0. World Health Organization; 2010.
- Guilera G, Gómez-Benito J, Pino Ó, et al. Disability in bipolar l disorder: the 36-item World Health Organization disability assessment schedule 2.0. J Affect Disord. 2015;174:353-360.
- Patterson TL, Goldman S, McKibbin CL, Hughs T, Jeste DV. UCSD performance-based skills assessment: development of a new measure of everyday functioning for severely mentally ill adults. *Schizophr Bull*. 2001;27:235-245.
- Goldman HH, Skodol AE, Lave TR. Revising axis V for DSM-IV: a review of measures of social functioning. *Am J Psychiatry*. 1992;149:1148-1156.

- 72. Keefe RS, Davis VG, Atkins AS, et al. Validation of a computerized test of functional capacity. *Schizophr*. 2016;175:90-96.
- Fisher AG, Bray JK. AMPS-Assessment of Motor and Process Skills. Vol 1: Development, standardization, and administration manual. Revised 7th ed. Fort collins, CO: Three Star Press; 2012.
- Träger C, Decker L, Wæhrens EE, Knorr U, Miskowiak K, Vinberg M. Influences of patient informed cognitive complaints on activities of daily living in patients with bipolar disorder. *An Exploratory Cross-Sectional Study Psychiatry Res.* 2017;249:268-274.
- Weissman MM, Bothwell S. Assessment of social adjustment by patient self-report. Arch Gen Psychiatry. 1976;33:1111-1115.
- Zweig RA, Turkel E. The social adjustment scale-self-report: psychometric properties for older adults. *Psychol Rep.* 2007;101:920-926.
- 77. Li H, Mukherjee D, Krishnamurthy VB, et al. Use of ecological momentary assessment to detect variability in mood, sleep and stress in bipolar disorder. *BMC Res Notes*. 2019;12:1-7.
- Bomyea JA, Parrish EM, Paolillo EW, et al. Relationships between daily mood states and real-time cognitive performance in individuals with bipolar disorder and healthy comparators: a remote ambulatory assessment study. J Clin Exp Neuropsychol. 2021;43:813-824.
- Yerushalmi M, Sixsmith A, Pollock Star A, King DB, O'Rourke N. Ecological momentary assessment of bipolar disorder symptoms and partner affect: longitudinal pilot study. JMIR Form Res. 2021;2(5):e30472.
- Rot M, Hogenelst K, Schoevers RA. Mood disorders in everyday life: a systematic review of experience sampling and ecological momentary assessment studies. *Clin Psychol Rev.* 2012;32:510-523.
- Miskowiak KW, Burdick KE, Martinez-Aran A, et al. Methodological recommendations for cognition trials in bipolar disorder by the International Society for Bipolar Disorders Targeting Cognition Task Force. *Bipolar Disord*. 2017;19:614-626.
- Bonnin CM, Reinares M, Martínez-Arán A, et al. Effects of functional remediation on neurocognitively impaired bipolar patients: enhancement of verbal memory. *Psychol Med.* 2016;46:291-301.
- Torrent C, Bonnin CDM, Martínez-Arán A, et al. Efficacy of functional remediation in bipolar disorder: a multicenter randomized controlled study. *Am J Psychiatry*. 2013;170:852-859.
- Solé B, Bonnin CM, Mayoral M, et al. Functional remediation for patients with bipolar II disorder: improvement of functioning and subsyndromal symptoms. *Eur Neuropsychopharmacol.* 2015;25(2):257-264.
- Montejo L, Jiménez E, Torrent C, et al. Functional remediation for older adults with bipolar disorder (FROA-BD): study protocol for a randomized controlled trial. *Rev Psiquiatr Salud Ment.* 2022 (in press). doi:10.1016/j.rpsm.2022.01.004
- Schouws SNTM, Orhan M, Korten N, et al. Evaluating feasibility and satisfaction of a group intervention for mild cognitive impairment in older age bipolar disorder: "brain train". *Bipolar Disord*. 2022;24:217-219.
- Mogensen MB, Macoveanu J, Knudsen GM, Ott CV, Miskowiak KW. Influence of pre-treatment structural brain measures on effects of action-based cognitive remediation on executive function in partially or fully remitted patients with bipolar disorder. *Eur Neuropsychopharmacol.* 2022;56:50-59.

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