UNIVERSIDADE D
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Maria Carrilho Roque

Avaliação da Qualidade de Vida na Perturbação Bipolar

Validação do Brief Quality of Life in Bipolar Disorder (Brief QoL.BD)

Dissertação no âmbito do Mestrado Integrado em Psicologia, subespecialização em Psicologia Clínica e da Saúde: Intervenções Cognitivo-Comportamentais nas Perturbações Psicológicas e Saúde, orientada pela Professora Doutora Paula Cristina de Oliveira de Castilho Freitas e apresentada à Faculdade de Psicologia e de Ciências da Educação da Universidade de Coimbra

Setembro de 2021

Faculdade de Psicologia e de Ciências da Educação
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"Podem decretar o fim da arte,
É como decretar o fim da chuva."

(Miguel Tiago)

"Há sempre alguém que sonha em qualquer parte
E a nossa voz nunca será viúva.

Podem decretar o fim do pão,
Espalhar pela seara uma alcateia.
Mas quem nasce a fazer a divisão,
Pode morrer pela última ceia.

Podem dizer pra estarmos calados
E assim seremos o que Deus quiser.
Para que a gente não vire soldados,
Podem decretar um deus qualquer.

Podem decretar mandar calar-te,
Dizer que a nossa voz é um enguiço.
Podem decretar o fim da arte
E a gente faz uma canção sobre isso."

(João Monge)

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Esta dissertação de mestrado, aguardada com vontade, construída e desconstruída, com e sem inspiração, termina agora com orgulho e será guardada com gratidão.

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Prefácio

Este estudo foi desenvolvido no âmbito de um estudo alargado de doutoramento - Efficacy Of Contextual Behavioral Therapies In Bipolar Disorder – A Randomized Controlled Pilot Trial (BD: ref:SFRH/BD/130116/2017), com o objetivo de validar para a população portuguesa, a versão breve do único instrumento, até à data, desenhado para avaliar a qualidade de vida (QV) na perturbação bipolar (PB) – Brief Quality of Life in Bipolar Disorder Scale (Brief QoL.BD; Michalak et al., 2010).

Segundo a Organização Mundial de Saúde, a perturbação bipolar e perturbações relacionadas afetam 46 milhões de pessoas, tendo atingido o terceiro lugar na prevalência de perturbações mentais, entre os 0,3 e 1,2% (Ritchie, 2018). Existem, no entanto, vários estudos que referem a possibilidade de esta prevalência ser ainda maior devido a problemas de identificação e diagnóstico, particularmente do subtipo II (Angst, 2006; Angst et al., 2011; Angst & Cassano, 2005; Benazzi, 1997; Berk et al., 2006; Ghaemi et al., 2000, 1999), ainda que alguns estudos sugiram que é possivelmente o fenótipo bipolar mais prevalente (Vieta & Suppes, 2008). Na realidade, a perturbação bipolar II é frequentemente mal diagnosticada como perturbação de personalidade ou depressão major unipolar (Vieta & Suppes, 2008). Estes fatores podem contribuir para o uso de medicação inadequada, aumentando o risco de episódio maníaco induzido por substância (Benazzi, 1997; Ghaemi et al., 1999). Sendo assim, torna-se clara a necessidade de aprimorar os métodos de deteção de sintomas (hipo)maníacos, já que as necessidades de tratamento e comorbilidades variam amplamente entre diagnósticos. Além disso, o reconhecimento tardio do diagnóstico correto impacta o tratamento e poderá contribuir para um prognóstico pior (Angst & Cassano, 2005), ampliando a carga que esta doença acarreta tanto para o indivíduo, como para a sua família e para a sociedade (Berk et al., 2006).

A funcionalidade é definida como a capacidade de trabalhar, estudar, viver de forma independente e envolvimento em atividades recreativas e relações interpessoais (Zarate et al.,

2000). O seu comprometimento é um dos principais critérios utilizados para diagnosticar a presença de uma perturbação mental (American Psychiatric Association, 2013). Um indivíduo considera-se incapacitado quando, sendo portador de uma condição de saúde, apresenta dificuldades, na interação com fatores contextuais, ao nível do corpo, da pessoa ou da sociedade, num ou mais domínios de vida (Leonardi et al., 2006).

As perturbações bipolares ocuparam o 12º lugar no ranking das principais condições de saúde associadas à deficiência (Organização Mundial da Saúde, 2011), com uma redução da esperança média de vida de aproximadamente 15 anos, que inclui uma taxa de 10% de morte por suicídio (Harrison et al. ., 2018b). Além disso, indivíduos com PB apresentam um prejuízo funcional significativo mesmo durante períodos sustentados de remissão substancial (Fagiolini, Kupfer, et al., 2005b), que ainda assim nem sempre é garantida, com alguns estudos a apontar o potencial de melhoria dos tratamentos farmacológicos, já que a sua eficácia permanece abaixo do ideal (Blanco et al., 2002). Além disso, esta população apresenta uma maior prevalência de outros riscos e condições médicas, quando comparada com a população geral, como por exemplo, condições cardiovasculares e endócrinas (Kilbourne et al., 2004b; Kupfer, 2005; Organização Mundial da Saúde, 2011). Existe também uma maior probabilidade de coocorrência com outra perturbação do eixo I do que de ocorrer sozinha (McElroy et al., 2001). Esta perturbação episódica, caracterizada por períodos de funcionamento normal entre episódios, apesar das altas taxas de recorrência (Oswald et al., 2007), e cronicidade (Fagiolini et al., 2013; Judd et al., 2002), tem sofrido uma reconceptualização, à medida que a literatura demonstra períodos mais extensos de sintomatologia (Judd et al., 2002), que não remitem completamente entre episódios (Leboyer & Kupfer, 2010). Esses períodos incluem uma presença substancial de sintomas residuais (Kaya et al., 2007; Keitner et al., 1996), com um impacto significativo nas taxas de recorrência (Perlis et al., 2006) e no funcionamento diário (Sierra et al., 2007) Além disso, inclui sintomas prodrómicos depressivos e maníacos (Sierra et

al., 2007, Keitner et al., 1996), sendo as alterações de humor e os distúrbios do sono os mais frequentes, respetivamente (Sierra et al., 2007). Este quadro clínico também acarreta prejuízos para o funcionamento psicossocial, dependente da gravidade dos sintomas (Judd et al., 2005) e prejuízo cognitivo (Martinez-Aran et al., 2007). Dessa forma, é importante considerar os vários indicadores de recuperação, clínicos e funcionais, e investir no desenvolvimento e validação de instrumentos de avaliação psicológica, que ajudem a alargar a avaliação a outros domínios além da sintomatologia, negligenciados na investigação (Zarate et al., 2000).

Tem crescido o interesse direcionado aos fatores de risco para o prejuízo funcional (Martinez-Aran et al., 2007; Sylvia et al., 2017), entre eles, características clínicas (idade de início, frequência de episódios, ciclos rápidos, sintomas subclínicos, psicóticos ou mistos; Suppes et al., 2000; Goldberg & Harrow, 1999), comorbilidade psiquiátrica e médica (Suppes et al., 2000; Feinman, 1996; Vieta et al., 2000; Kupfer, 2005a; Sylvia et al., 2017), adesão ao tratamento (Colom et al., 2000; Colom et al., 2003), prejuízo neurocognitivo (embora a literatura não seja ainda clara; Martínez-Arán et al., 2004) e fatores farmacológicos (Dean et al., 2004), como efeitos secundários (Reinares et al., 2000). Finalmente, variáveis ambientais como o suporte social (O'Connell et al., 1985; Johnson et al., 2003; Cohen et al., 2004), desvantagem social (Sylvia et al., 2017) e eventos de vida devem ser tidos em consideração ("Life Events and the Course of Bipolar Disorder," 1990).

A perturbação bipolar do tipo I está associada a uma maior gravidade sintomatológica transversal, quando comparada com o tipo II (American Psychiatric Association, 2013), bem como a maiores taxas de hospitalização, apresentação de sintomas psicóticos (Vieta et al., 1997) e maiores taxas de conflitos interpessoais, instabilidade conjugal e/ou desagregação familiar (Rihmer & Kiss, 2002). Por outro lado, o tipo II é frequentemente caracterizado por episódios mais prolongados e graves de depressão major (Maina et al., 2007), bem como a intervalos entre episódios mais curtos (Judd et al., 2005). Além disso, indivíduos com PB do tipo II sofrem

de maior instabilidade de humor (American Psychiatric Association, 2013), prejuízo funcional entre episódios, e pior qualidade de vida relacionada com a saúde, mesmo durante períodos sustentados de eutimia com exclusão dos sintomas residuais (Maina et al., 2007). Dado o vasto impacto desta perturbação, distinto nos seus subtipos, torna-se difícil compará-los em termos de prejuízo da sintomatologia e impacto nas suas vidas. Ainda assim, o foco na redução de sintomas é insuficiente, devendo ser acompanhado por reabilitação funcional, especialmente no tipo II (Maina et al., 2007).

As diferenças entre o tipo I e II, em termos de frequência de episódios, não são claras, com alguns estudos a indicar maior recorrência no tipo II (Vieta et al., 1997; Ayuso-Gutiérrez & Ramos-Brieva, 1982) e outros no tipo I (Benazzi, 1999). O mesmo acontece com a cronicidade, com alguns estudos a indicar taxas mais elevadas para o tipo I (Benazzi, 1999; Vieta et al., 1997), e outros para o tipo II (Endicott et al., 1985; Judd et al., 2005) . O facto de a qualidade de vida ser reportada como inferior em indivíduos diagnosticados com perturbação bipolar do tipo II pode ser explicado pelos períodos mais longos de depressão, com uma proporção de depressão para (hipo)mania (percentagem média de semanas de sintomas depressivos para percentagem média de semanas de sintomas (hipo)maníacos) de 37:1, em contraste com 3:1 no tipo I (Judd et al. 2003). Além disso, outra explicação possível pode ser a referência de humor hipomaníaco como a "normalidade", em oposição ao tipo I (Maina et al., 2007).

Outra medida relevante na avaliação da PB e cada vez mais utilizada tanto na prática clínica como em investigação, é a qualidade de vida (QV; Michalak et al., 2005), uma vez que tem sido consistentemente reportada como inferior nas diversas fases da PB, quando comparada com a população geral, mesmo em períodos de eutimia (Maina et al., 2007; Jansen et al., 2013). Na literatura sobre a QV na PB têm sido usadas medidas genéricas (Michalak et al., 2005), no entanto, existem necessidades e desafios únicos da PB que serão melhor avaliados através de instrumentos desenhados especificamente para esse fim (IsHak et al., 2012; Mackala et al.,

2014; Michalak et al. , 2005, 2010; Murray e Michalak, 2012; Subero et al., 2013), mesmo que medidas "individualizadas" possam dificultar a administração e a interpretação dos resultados (Michalak et al., 2005).

O Quality of Life in Bipolar Disorder (QoL.BD; Michalak et al., 2010) surge como o primeiro instrumento desenhado para avaliar a QV nas várias fases da PB e rapidamente se tornou num instrumento internacionalmente utilizado (Xiao et al., 2016). Este instrumento tem uma versão curta, o Brief Quality of Life in Bipolar Disorder (Brief QoL.BD; Michalak et al., 2010) e ambos apresentam boas qualidades psicométricas (Michalak et al., 2010).

Uma vez que em Portugal não existe nenhum instrumento equivalente para a medição da QV nesta perturbação, este estudo pretende validar o Brief QoL.BD para a população portuguesa com perturbação bipolar.

Abbreviations

ADEB = Association of support to Depressive and Bipolar Patients

BD = Bipolar Disorder

CFA = Confirmatory Factor Analysis

CHL = Hospital Centre of Leiria

CHO = Hospital Centre of Oeste – Caldas da Rainha

CHUC = Coimbra Hospital and University Centre

CINEICC = Centre for Research in Neuropsychology and Cognitive Behavioural Intervention

COVID-19 = Coronavirus Disease, 2019

CREST.BD = Collaborative Research Team to study psychosocial issues in Bipolar Disorder

DSM-IV/V = Diagnostic and Statistical Manual of Mental Disorders, Editions IV/V

GDPR = General Data Protection Regulation

HADS-ANX = Hospital Anxiety and Depression Scale – Anxiety subscale

HADS-DEP = Hospital Anxiety and Depression Scale – Depression subscale

HAM-D = Hamilton Depression Rating Scale

OAS2 = Other as Shamer Scale 2

PANAS-NA = Negative Affect subscale of the Positive and Negative Affect Scale

PANAS-PA = Positive Affect subscale of the Positive and Negative Affect Scale

Q-LES-Q = Quality of Life Enjoyment and Satisfaction Questionnaire

QoL = Quality of Life

QoL.BD = Quality of Life in Bipolar Disorder Scale

SF-36 = 36-item Medical Outcomes Study Short Form

SWB= Subjective Well-being

SWLS = Satisfaction With Life Scale

YMRS = Young Mania Rating Scale

Contents

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Validating the Brief Version of Quality of Life in Bipolar Disorder (Brief QoL.BD) among Portuguese patients with Bipolar Disorder

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Resumo

A Brief Quality of Life in Bipolar Disorder (Brief QoL.BD) é uma versão breve do primeiro instrumento de autorresposta que avalia mudanças na qualidade de vida (QV) nas diversas fases da perturbação bipolar (PB), sendo que, em Portugal, não existe medida equivalente.

Objetivo: Validar a versão breve da medida de QV para a PB - Brief QoL.BD (consistência interna, validade convergente e divergente, e análise fatorial confirmatória), explorar associações entre a QV e as outras variáveis em estudo, e descrever as diferenças entre as populações em estudo.

Material e métodos: 140 adultos saudáveis recrutados da população geral (M = 39,66 ± 10,43, 67,9% ♀; 32,1% ♂) e 110 pessoas com PB (M = 43,81 ± 11,72, 66,4% ♀; 33,6% ♂), avaliados através de entrevista clínica (CIBD; n=73) ou questionário online de autorresposta (MDQ; n=37). Todos preencheram questionários de autorresposta específicos, num formato online: Brief QoL.BD (qualidade de vida), SWLS (satisfação com a vida), EADH (ansiedade e depressão), PANAS (afeto positivo e negativo), OAS2 (vergonha externa) e Impacto percebido da COVID-19.

Resultados: A versão portuguesa do Brief QoL.BD apresentou uma consistência interna muito boa tanto na amostra clínica como não clínica (α=.84 e α=.91, respetivamente). A validade convergente foi suportada por correlações positivas significativas com a SWLF e a PANAS-PA (r=.45 e r=.52, respetivamente). A validade divergente, foi apoiada por correlações negativas significativas com a PANAS-NA (r= -. 53), HADS-DEP (r=-. 60), HADS-ANX (r=-. 60) e OAS2 (r=-. 45). A análise fatorial confirmatória validou a estrutura original de um fator.

Conclusão: A versão portuguesa do Brief QoL.BD (PT-Europeu) mostrou ser uma escala válida e fiável para a população portuguesa com PB, útil na medição do bem-estar para esta condição clínica e para o estudo das diferenças entre este quadro clínico e outros.

Palavras-chave: Versão Breve da Qualidade de Vida na Perturbação Bipolar, Análise Fatorial Confirmatória, Estudo Psicométrico

Abstract

The Brief Quality of Life in Bipolar Disorder (Brief QoL.BD) is a short version of the first self-report instrument to assess changes in quality of life (QoL) in the different phases of bipolar disorder (BD), whereas in Portugal there is no equivalent measure.

Objective: To validate the Brief version of Quality of Life in Bipolar Disorder – Brief QoL.BD (internal consistency, convergent and divergent validity, and confirmatory factor analysis), to explore associations between QoL and the other variables under study, and to describe differences between the populations under study.

Material and methods: 140 healthy adults recruited from the general population (M = 39.66 ± 10.43, 67.9% ♀; 32.1% ♂) and 110 people with BD (M = 43.81 ± 11.72, 66.4% ♀; 33.6% ♂), assessed through a clinical interview (CIBD; n=73) or an online self-report questionnaire (MDQ; n=37). All filled specific online self-report questionnaires: Brief QoL.BD (quality of life), SWLS (satisfaction with life), EADH (anxiety and depression), PANAS (positive and negative affect), OAS2 (external shame) and Perceived impact of COVID-19.

Results: The Portuguese version of the Brief QoL.BD showed very good internal consistency in both the clinical and non-clinical samples (α=.84 and α=.91, respectively). Convergent validity was supported by significant positive correlations with SWLF and PANAS-PA (r=.45 and r=.52, respectively). The divergent validity was supported by significant negative correlations with PANAS-NA (r= -.53), HADS-DEP (r=-.60), HADS-ANX (r=-.60) and OAS2 (r=-. 45). Confirmatory factor analysis validated the original one-factor structure.

Conclusion: The Portuguese version of the Brief QoL.BD (European PT) proved to be a valid and reliable scale for the Portuguese population with BD, useful to measure well-being in this clinical condition and to study its differences from other ones.

Keywords: Brief Version of Quality of Life in Bipolar Disorder, Confirmatory Factor Analysis, Psychometric Study

Introduction

Bipolar and Related Disorders

Bipolar and related disorders fall between psychotic and depressive disorders given their symptomatology, family history and genetic characteristics (American Psychiatric Association, 2013). This episodic recurrent mood disorder is usually accompanied by disturbances in thinking and behaviour, and often by psychotic features (Craddock & Sklar, 2013). Its complex phenotype is defined solely based on clinical features, since causes or underlying biology are still unclear, even though it is well established that this disorder has high heritability (Craddock & Sklar, 2013).

Bipolar disorder (BD) affects 46 million people, homogeneously between genders. According to the World Health Organization, it is the third most prevalent mental disorder, ranging between 0.3 and 1.2% (Ritchie, 2018). However, several studies point out the likelihood of it being higher, given the increasing evidence that it is often unrecognised or misdiagnosed, particularly subtype II (Angst, 2006; Angst et al., 2011; Angst & Cassano, 2005; Benazzi, 1997; Berk et al., 2006; Ghaemi et al., 2000, 1999), even though some studies suggest that it may be the most prevalent bipolar phenotype (Vieta & Suppes, 2008). In fact, bipolar II disorder is often misdiagnosed as a personality or unipolar depressive disorder (Vieta & Suppes, 2008), possibly due to short observation periods, poor diagnostic skills or lack of contextual characteristics, as well as the fact that hypomania's symptomatology is rarely perceived as pathological or distressing by the individual and is less recognisable than depressive symptoms (Angst, 2006). Other authors also identify the rigidity of BD's definition and the narrowness of the differential diagnosis of major depression disorder as possible contributors to the misdiagnose of BD (Berk et al., 2006).

Quality of life in bipolar disorder

Quality of life (QoL) is a multidimensional concept encompassing several domains, from physical, to emotional, social, and spiritual wellbeing (The WHOQOL Group, 1998). The World Health Organization describes QoL as an "individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" (The WHOQOL Group, 1995). Keyes (2005) points out the small portion of variance shared between the concepts of absence of mental illness and wellbeing, contradicting the assumption that the former equals the latter. The construct of quality of life emerged as a treatment goal both generally in the care of mental illnesses (Basu, 2004) and specifically, in bipolar disorder (Murray and Michalak, 2012; Morton et al. 2017). QoL is now used as an important outcome measure for recovery, as it mediates the relationship between treatment adherence and therapeutic alliance in bipolar disorder (Chakrabarti, 2018), and effectiveness of treatment interventions (Kaplan, 2002). It has been increasingly included in clinical trials and observational studies (Lorenzo-Luaces & Amsterdam, 2018), and specifically in scientific BD literature (Murray and Michalak, 2012). Murray and collaborators (2017) describe QoL as a person-centred, recovery-oriented construct with a powerful potential to represent consumer interests both in research and in clinical practice. BD patients' needs are to some extent related to their QoL (Prasko et al., 2016), and when unmet, may influence discouragement from seeking out and complying with treatments (Cotrena et al., 2020).

In their exploratory qualitative study, Michalak and collaborators (2006) obtained descriptions from affected individuals as often having significant lasting effects on their life quality, especially on their ability to have good education, meaningful vocation, financial independence and healthy relationships. On the other hand, in the same study, a small percentage describes that bipolar disorder opened up new doors of opportunity for them, for instance by changing their career paths or social networks, even after undergoing many years of hardship and

adjustment (Michalak et al., 2006). QoL in BD patients is significantly lower than in the general population, even during euthymic periods (Gutiérrez-Rojas et al., 2008; Michalak et al., 2005; Xiang et al., 2013). Both clinical and symptomatic factors are behind this, including: depressive symptoms (Michalak et al., 2013; Bauer et al., 2001; Yatham et al., 2004; Sierra et al., 2005; Saragoussi et al., 2018), cognitive impairment (Saragoussi et al., 2018), type of pharmacological treatment (Lorenzo-Luaces & Amsterdam, 2018), number of depressive episodes (Lee et al., 2017), symptom severity (Gao et al., 2019; Lee et al., 2017; Yatham et al., 2004; Dias et al. 2008; Cotrena et al., 2016), psychiatric comorbidities (Gao et al., 2019; Lee et al., 2017; Cotrena et al., 2020), childhood trauma (Lee et al., 2017; Erten et al., 2014), neurocognitive deficits (Cotrena et al., 2016; Kim et al., 2013; Pattanayak et al., 2012), and disruption of biological rhythm (Cudney et al. 2016). Regarding manic symptoms and QoL, findings are more mixed, with some pointing that mania and hypomania are associated with impaired QoL (Vojta et al., 2001; Gazalle et al., 2007), whereas others report no negative impact (Gazalle et al. 2007), nor association (Zhang et al., 2000).

Even though QoL in BD patients is significantly higher between episodes (Gao et al., 2019; Hofer et al., 2017), it is still impaired in remitted euthymic patients (Michalak et al., 2005; Sierra et al., 2005; Gutiérrez-Rojas et al., 2008; Dias et al. 2008), meaning that other factors may play an important role in QoL besides mood symptoms. Some of these factors, associated with lower QoL, include lower levels of education (Hawke et al., 2013; Michalak et al., 2006, 2013; Yen et al., 2008) and lack of good social support (Hawke et al., 2013; Mackala et al., 2014; Michalak et al., 2013; Gutiérrez-Rojas et al., 2008; IsHak et al., 2012; Yen et al., 2008). Six important domains of QoL in BD patients were emphasised by Michalak and collaborators (2006): routine, independence, stigma and disclosure, identity, social support and spirituality. Also, in the same study, most BD participants ranked social support as most important, followed by mental health.

Self-reported quality of life in bipolar disorder: assessment in the Portuguese population

QoL is a highly subjective concept and therefore, challenging to accurately and reliably measure (Michalak et al., 2005). This challenge begins with the universal fluidity and openness to distortion that the broad concept entails (Michalak et al., 2005), as it offers a subjective representation of one's well-being (Dias et al., 2008). As per some studies, this challenge may increase in BD patients, essentially due to the lack of insight concomitant with high mood and manic states, possibly questioning the validity of self-reported measures (Burdick et al., 2005). At the same time, another study suggests that even the patients with impaired "awareness of mental disorder, awareness of medication status, and awareness of social consequences of the illness" are capable of acknowledging and reporting lower levels of QoL than healthy controls (Dias et al. 2008). Also, even though (hypo)manic symptomatology has less negative impact in perceived QoL when compared to depressive symptoms, this impact is still higher when compared to the general population (Jansen et al., 2013).

Also, although 'individualised' measures might hamper administration and interpretation of outcomes (Michalak et al., 2005), concepts like patient's empowerment, self-management, independence and resilience, related to their QoL, have been increasingly encouraged (Wand, 2015). Using nonspecific instruments to measure QoL in such a particular population presents some issues, as general scales may be insensitive to important characteristics of BD patients (Michalak et al., 2005), and scarcely assess unique aspects linked to QoL in bipolar patients, like routine, independence, spirituality or stigma (Michalak et al., 2006), for example, the impact of psychotic symptoms with spiritual or religious content on their understandings of religion⁄spirituality (Michalak et al., 2010). Also, the sense of self or identity can be specially damaged in BD (Inder et al., 2008; Proudfoot et al., 2009). In fact, diagnostic-specific tailored instruments can help determining patient's preferences (regarding values and priorities), allow more accurate comparisons between conditions and detect subtle variations in response to

treatment (Michalak et al., 2005). For these reasons, QoL measurement should be personalised and adapted to the population in question, increasing its specificity and reliability, through the development of disease-targeted instruments (IsHak et al., 2012; Mackala et al., 2014; Michalak et al., 2005, 2010; Murray and Michalak, 2012; Subero et al., 2013), contributing to the achievement of both the understanding of QoL determinants and outcomes optimisation strategies (IsHak et al., 2012). There are several non-disorder-specific scales that have been used to study QoL in populations with BD across cultures (Michalak et al., 2005), being the "Quality of Life in Bipolar Disorder" (QoL.BD) scale the first and only, to date, disorder-specific instrument to assess QoL in these patients (Michalak et al., 2010). It has rapidly become an international preferred tool for QoL measurement in BD populations (Xiao et al., 2016), since it has proven to be feasible, reliable and valid, with excellent internal reliability, appropriate test-retest reliability and expected direction and magnitude of correlations with external measures, as well as more sensitive to clinical change in BD (Michalak et al., 2010). Its development was initiated in 2004, by the Collaborative Research Team to study psychosocial issues in Bipolar Disorder (CREST.BD), through a four-year mixed-method programme of research including four studies: the first for item generation involved a literature review, accompanied by a qualitative investigation with patients, their families and experts; a second one was conducted for item reduction; thirdly, a large field sample study; and finally, another small-N item reduction study with both patients and experts (Michalak et al., 2010). This instrument was built to measure the results of treatment and/or recovery, in this clinical population, as complement to the instruments for evaluating the reduction of symptoms and relapse rates (Michalak et al., 2010). It has 56 items and 12 main factors: physical, sleep, cognitive, mood, leisure, social, finances, household, spirituality, self-esteem, identity, independence, plus two optional ones, work and education (Michalak et al., 2010). Each item

is rated on a 5-point Likert-type scale (1 – "Strongly Disagree"; 5 – "Strongly Agree"), with higher scores indicating higher levels of perceived quality of life.

The Brief QoL.BD is a reliable short scale (Michalak et al., 2010) that includes the 12 main domains of the original scale, each one reduced to one item (rated on a 5-point Likert-type scale [1 – "Strongly Disagree"; 5 – "Strongly Agree"], with higher scores indicating higher levels of perceived quality of life), based on high loadings on the relevant factor in exploratory factor analysis, as well as high commonalities across all 12 factors (Michalak et al., 2010). Both on T1 and T2, exploratory factor analysis using maximum likelihood extraction identified a single factor solution on which all items had significant loadings (Michalak et al., 2010). The distribution of total score was approximately normal with no evidence of floor or ceiling effects (Michalak et al., 2010). This version also showed moderate-to-large correlations with each of the 12 basic scales of the original version (Michalak et al., 2010). Correlations with the optional Work and Education scales (domains excluded from the Brief QoL.BD) were also moderate to large (Michalak et al., 2010). The Brief QoL.BD also showed expected relationships with external measures (36-item Medical Outcomes Study Short Form [SF-36]; Quality of Life Enjoyment and Satisfaction Questionnaire [Q-LES-Q]; Subjective Well-being [SWB]; Satisfaction with Life scale [SWL]; Positive and Negative Affect Schedule [PANAS]; Young Mania Rating Scale [YMRS]; Hamilton Depression Rating Scale [HAM-D]) at T1 (Michalak et al., 2010). With the exception of YMRS (r=-0.18), all bivariate correlations were large (Michalak et al., 2010). Simple T2–T1 deviation scores showed that change in HAM-D was most strongly associated with change in the 12-item Brief QoL.BD (Michalak et al., 2010). Also, when change scores for the 12 basic scales and the Brief QoL.BD were used as predictors in a stepwise linear regression predicting HAM-D, only the Brief QoL.BD was entered into the model (Michalak et al., 2010). Differential validity test of the Brief QoL.BD against existing QoL measures, through bivariate correlations showed that change in the Brief QoL.BD was the

strongest individual correlate of HAM-D (Michalak et al., 2010). Additionally, hierarchical linear regression analyses, to predict HAM-D was also conducted, and when the 15 existing scales (eight SF-36, six Q-LES-Q, and SWL) were entered at Step 1 and the Brief QoL.BD entered at Step 2, both model steps were significant. At Step 2, Brief QoL.BD was the sole significant predictor of HAM-D (Michalak et al., 2010).

At a national level, the concern about the QoL impairment of mental disorders is reflected in the 2007-2016 National Mental Health Plan, which states that "the most recent epidemiological studies show that psychiatric disorders and mental health problems have become the main cause of disability and one of the main causes of morbidity in current societies.". QoL.BD has been translated and validated in several countries (Xiao et al., 2016). Currently, there is no specific measurement to assess QoL in Portuguese people with BD.

In this study we intend to validate the Brief QoL.BD to Portuguese, and to explore the association between QoL and other measured variables (e.g., anxiety, depression, negative and positive affect, and external shame). While validating this scale and identifying possible predictors of its measure, we also aim to describe the differences between the clinical and general populations, and between genders and types of BD in the clinical one, across those variables.

COVID-19 and Quality of Life

The current pandemic of the Coronavirus Disease 2019 (COVID-19), declared as an international public health emergency (WHO, 2020), on January 30th of 2020, was coincident with the time frame of the present study. Like other pandemics, such as the SARS epidemic (Reynolds et al., 2008) or the Influenza A virus (Liao et al., 2014), it entails both direct and indirect effects on mental health, as well as adverse psychological responses (Paulino et al., 2020), and psychological symptoms in the general population (Cao et al., 2020; S. Li et

al., 2020; Z. Li et al., 2020; Liu et al., 2020; C. Wang et al., 2020a; Y. Zhang & Ma, 2020). In a pilot Portuguese study, in the general population, about half (49.2%) reported moderate to severe psychological impact of this pandemic (Paulino et al., 2020). The length and constrained physical space of social isolation can be associated with a wide range of adverse psychological effects, such as depression, lowered self-esteem, alienation, and helplessness (Brooks et al., 2020), as well as it may impact mood stabilisation, through disconnection from family and friends, reduced access to in-person health care, limited engagement in meaningful activities, reduced opportunities to exercise, and preventing sunlight exposure (Stefana et al., 2020).

Specifically in populations with BD, the impact may be worse and long-lasting, as it hampers access to outpatient care, and harms treatment continuity, alliance, adherence, and the recovery progress, while aggravating stress levels (Stefana et al., 2020). Moreover, this population has high comorbidity with obesity, diabetes mellitus, coronary heart disease, and obstructive pulmonary disease, as well as smoking and substance use (de Hert et al., 2011), putting it in risk for severe acute respiratory syndrome (SARS-CoV-2) in case of infection with the coronavirus (Stefana et al., 2020). Additionally, BD is already associated with stigma, and if combined with COVID-19, whose contraction may imply the experience of ostracization, may aggravate the sense of isolation and hostility (Stefana et al., 2020). Lock-down (Mazza et al., 2020), job loss, and financial uncertainty (Stefana et al., 2020) may function as a trigger for more severe and unstable BD course, including increased risk of relapse, affective lability, impulsivity and risk-taking behaviour, as well as higher suicide attempt rates (Mazza et al., 2020). Karantonis and collaborators (2021) found no substantial differences between patients with BD and the general population in terms of mood symptoms, COVID-19 fear or lifestyle factors and social rhythms, while suggesting a degree of resilience in BD patients. However, found significantly higher pandemic related subjective cognitive dysfunction in the population

with BD (Karantonis et al., 2021). Considering these findings, we found it pertinent to control its impact on QoL, in this study.

Method

Samples

In the present cross-sectional study, data was collected in a clinical sample (n=110) and a general adult population sample (n=140). For the first one we established the following inclusion criteria: age between 18-65 years, Portuguese nationality, BD diagnosis and without other identified co-morbidities and medical conditions. For the general population, we established the following inclusion criteria: age between 18-65 years, Portuguese nationality, without any diagnosed medical condition (that could affect quality of life) and the absence of a psychological and/or psychiatric diagnosis. In this sample, sociodemographic statistically significant differences were found for the living area, working situation, meaningful relationship and civil status (cf. Table 1).

Table 1.

Descriptive statistics of socio-demographic features. Means (M), Standard Deviations (SD), independent samples t-test and chi-square differences between the clinical sample (n=110) and the general adult population (n=140).

	Clinical Sample (n = 110)	
	N	*%*
Diagnosis		
Bipolar I Disorder	52	47.3%
Bipolar II Disorder	20	18.2%
Other Specified Bipolar and Related Disorder	1	0.9%
Diagnosed with Bipolar Disorder[1]	37	33.6%
	(n = 95)	
	M	*SD*
Age of onset	23.93	9.954

	Clinical Sample (n = 110)		General Adult Population Sample (n = 140)			
	M	*SD*	*M*	*SD*	*t*	*p*
Age	43.81	11.723	43.57	10.213	.168	.867
Years of sch.	14.36	3.987	14.75	4.143	-.756	.45
	N	*%*	*N*	*%*	χ^2	*p*
Gender					.242	.623
Male	37	33.6	43	30.7		
Female	73	66.4	97	69.3		
	(n = 110)		(n = 140)			
	N	*%*	*N*	*%*	χ^2	*p*
Living Area					14.769	.000**
Urban	77	70	125	89.3		
Rural	33	30	15	10.7		
	(n = 108)		(n = 140)			
	N	*%*	*N*	*%*	χ^2	*p*
Academic Degree					7.12	.416
4th Grade	2	1.9	0	0		
6th Grade	4	3.7	2	1.4		

[1] Participants that only filled self-report questionnaires and had been previously diagnosed with Bipolar Disorder by a mental health professional, and had their diagnosis confirmed by the self-report questionnaire MDQ.

Basic Education (9th Gr.)	15	13.9	17	12.1		
Secondary Education	42	38.9	27	19.3		
Graduate Diploma (BSc)	42	38.9	52	37.1		
Master's Degree	15	13.9	29	20.7		
PhD	3	2.8	6	4.3		
Other	2	1.9	7	5		
	(n = 82)		(n = 140)			
	N	*%*	*N*	*%*	χ^2	*p*
Working Situation					78.401	.000**
Student	10	9.6	1	0.7		
Full Time	42	40.4	129	92.1		
Part Time	5	4.8	0	0		
On Sick Leave	13	12.5	1	0.7		
Retired due to Disability	10	9.6	2	1.4		
Retired	1	1	0	0		
Self-employed	1	1	0	0		
Unemployed	19	18.3	6	4.3		
Other	3	2.9	1	0.7		
	(n = 81)		(n = 139)			
	N	*%*	*N*	*%*	χ^2	*p*
Meaningful Relationship					9.848	.002**
Yes	46	56.8	107	77		
No	35	24.2	32	23		
	(n=83)		(n=140)			
	N	*%*	*N*	*%*	χ^2	*p*
Civil Status					12.32	.031*
Single	32	38.6	39	27.9		
Married	27	32.5	63	45		
Civil Union	5	6	22	15.7		
Separated	0	0	1	0.7		
Divorced	18	21.7	15	10		
Widowed	1	1.2	1	0.7		
	(n=75)		(n=140)			
	N	*%*	*N*	*%*	χ^2	*p*
Children					1.62	.203
Yes	41	54.7	89	63.6		
No	34	20.3	51	36.4		

Note. Years of sch. = years of schooling successfully completed.
** $p \leq .01$; * $p \leq .05$.

Procedure

Data collection

This study is part of a broader project - *Efficacy Of Contextual Behavioral Therapies In Bipolar Disorder – A Randomized Controlled Pilot Trial* (BD: ref:SFRH/BD/130116/2017), which was approved by the Faculty of Psychology and Educational Sciences of the University of Coimbra Ethics Committee and the ethic committees of: the Coimbra Hospital and University Centre (CHUC), Hospital Centre of Leiria (CHL), and Hospital Centre of Oeste – Caldas da Rainha (CHO). The project was also assessed by the Scientific Committee of ADEB (Association of support to Depressive and Bipolar Patients). The informed consent was obtained through a written consent form, and a copy of it was given to the participants signed by the lead investigator. Data confidentiality and anonymity were assured, as well as clear instructions about the use and coding of the data, being treated under the GDPR (General Data Protection Regulation) and collected exclusively for research purposes.

The recruitment of the clinical population took place between December of 2019 and January of 2021 and was supported by several hospitals (CHUC, CHL, CHO) and ADEB, an organization working with patients diagnosed with Bipolar Disorder. This diagnosis was later confirmed through either a semi-structured clinical interview, using CIBD (n=73, with 44 (60.3%) assessed by video call and 29 (39.7%) through face-to-face interviews guided by experienced clinical psychologists), or through a self-report questionnaire (n=37), the MDQ (which has a cut-off reference point to identify BD), on LimeSurvey, after confirmation that they had previously been diagnosed with bipolar disorder by a health professional. Data collection started in a face-to-face format, that was replaced by online format due to the COVID-19 pandemic's restrictions. The protocol included the informed consent (containing the aims of the study, the guarantee

of confidentiality and anonymity, and exclusion criteria), a sociodemographic questionnaire, and a battery of self-report questionnaires. After starting data collection, with the onset of the pandemic, it was considered relevant to control its effect and thus, a group of questions regarding the impact of the COVID-19 pandemic on their QoL was added, that was only filled by a few participants (n=32). The participants lacking the inclusion criteria and the ones who did not answer the entire protocol, were excluded, with the exception of those who had at least completed the Brief QoL.BD. Due to technical failures in digital data collection, some of the sociodemographic data was missing in the some initial collected questionnaire, hence the variability of sample size in some variables. When the error was detected it was immediately corrected, however, the data that was already submitted was considered and included in the study.

The recruitment of the general adult population took place between December of 2020 and June of 2021 and was carried out through an online self-report questionnaire (LimeSurvey), shared in different online platforms (Facebook, WhatsApp, Discord, and Reddit). Also, both a company and a hospital unit (Industrial enterprise and Unidade Local de Saúde Castelo Branco, respectively) collaborated by sending email with the questionnaire directly to their employees. Data was collected from two questionnaires, both including the informed consent (containing the aims of the study, the conditions of the participation – confidentiality and anonymity – and the inclusion criteria), a sociodemographic questionnaire, and a battery of self-report questionnaires. The first questionnaire was filled by 242 participants and distinguishes itself from the second one (n=164), since the last has an additional group of questions regarding the impact of the COVID-19 pandemic on their QoL. The participants lacking the inclusion criteria and the ones who did not answer the entire protocol, were excluded, with the exception of those who had at least completed the Brief QoL.BD. 140 participants were selected from

the total sample (n=406) in order to obtain a paired sample equivalent to the clinical sample in terms of age and years of schooling successfully completed. Regarding the COVID-19 impact, 60 participants were selected, in order to obtain a paired sample equivalent to the clinical sample in terms of age.

Validation and Translation of the Brief QoL.BD

Permission to validate and translate the Brief QoL.BD to European Portuguese was requested from the scale's original authors (Michalak et al., 2010) and obtained via e-mail. The translation was conducted independently by two clinical psychologists and one psychiatrist, resulting in three versions which were compiled into a final consensus version. Later, it was back translated by a different health professional from English to European Portuguese, and the questionnaire was showed to health professionals and people with Bipolar Disorder who described it as clear and easy to understand.

Data analysis

Statistical analyses were carried out using the SPSS program (Statistical Package for the Social Sciences version 22; Armonk, NY: IBM Corp.). The only measure without missing values was Brief QoL.BD, and we decided to keep all the participants to conduct the instrument's validation. Thus, the remaining measures had smaller samples, always ensuring the minimum acceptable for the analyses performed. Descriptive statistics were used to describe sociodemographic data and type of Bipolar Disorder diagnosis and to assess normality. Differences between genders and diagnoses in the clinical sample, as well as between the clinical and non-clinical samples were tested using independent samples t-test for continuous variables and chi-square for categorical variables (Field, 2013). Mean differences were considered statistically significant when $p \leq .05$ (Howell,

2007; Maroco, 2010b). Required assumptions were respected, with the exception of the homogeneity of variances' assumption (i.e., variances approximately equal across groups), in some cases. In these cases the p value of the Independent Samples t Test used was an approximate t statistic that is not based on assuming equal population variances. This alternative statistic, called the Welch t Test statistic, may be used when equal variances among populations cannot be assumed. Internal consistency indices were calculated for each instrument, considering Cronbach's values of less than .60 as inadmissible, between .60 and .69 weak, between .70 and .79 acceptable, between .80 and .89 high, and between .90 and 1 excellent (Pestana & Gageiro, 2008). Pearson correlation coefficients were conducted to explore convergent and divergent validity of the Brief QoL.BD and for the assessment of the correlations' magnitude, we considered a correlation coefficient lower than .20 a very low association, between .21 and .29 a low association, between .30 and .69 moderate, between .70 and .89 high and between .90 and 1 an excellent association (Pestana & Gageiro, 2008). Confirmatory factorial analyses (CFA) was performed using AMOS 24.0 software (Analysis of Moment Structures; Amos Development Corporation, Crawfordville, FL, USA). To assess overall model fit, a number of goodness of fit measures and recommended cut-points were used (Kline, 2005): Chi-Square ($\chi 2$), Normed Chi-Square ($\chi 2/df$), Comparative Fit Index (CFI $\geq$ .90, acceptable, and $\geq$.95, desirable), Tucker–Lewis Index (TLI $\geq$ .90, acceptable, and $\geq$ .95, desirable; Hu & Bentler, 1998), Root Mean Square Error of Approximation (RMSEA $\leq$ .07, good fit if GFI $\geq$ .92; Hair, Black, Babin, & Anderson, 2009), and rotated factor loadings of at least |0.4|, with a 95% confidence interval (CI). Also, modification indices were applied to improve the model. Outliers' analysis were performed by graphing the results (box diagrams), and although there were moderate outliers for some variables under study, after assessing that there were no significant

differences in outcomes, with and without outliers, we opted to keep them and ensure ecological validity. Simple linear regression analysis models were conducted to analyse the impact of the COVID-19 pandemic on the variance of the Brief QoL.BD score. A three stage hierarchical multiple regression was conducted with quality of life (Brief QoL.BD) as the dependent variable, to better understand which variables under study influenced its variance. HADS-DEP and HADS-ANX were entered at stage one, PANAS-PA and PANAS-NA at stage two, and OAS2 at stage three. The effect of civil status, work situation, gender, age, and years of schooling completed was controlled through prior correlations with the Brief QoL.BD, with dummy variables for the categorical ones. Normality, homogeneity and independence of the residue were validated through Skewness and Kurtosis values ($|Sk| < 3$ e $|Ku| < 10$, Kline, 2005), analysis of the normal probability graphic and Durbin-Watson statistic, respectively. Multicollinearity between variables was verified (VIF<5). Outliers were not found through the analysis of results graphs (box diagrams).

Measures

Information was collected through a sociodemographic questionnaire in both samples regarding: gender, age, civil status, living area, academic degree, years of schooling successfully completed and work situation, meaningful relationship and children.

The following instruments (CIBD and MDQ) were administered in the clinical sample only, to confirm the BD diagnosis:

The **Clinical Interview for Bipolar Disorders** (CIBD; Azevedo, J., et al. 2020) is a semi-structured clinical interview to assess the diagnosis of BD and Related Disorders in adults, through standardised questions based on the DSM-V criteria. CIBD is an integrative and

comprehensive assessment tool, which has the advantage of including both clinical and patient assessments.

The **Mood Disorder Questionnaire** (MDQ; Hirschfeld, R., et al., 2000) is a self-report inventory, derived from both the DSM-IV criteria and clinical experience, used to both screen for history of manic or hypomanic symptoms (13 "*yes"/"no*" items) across life, and assess the level of their functional impairment (1 - "*no problem*" to 4 - "*serious problem*") on a 4-point scale. Also, it has a scoring method to screen for BD (7 or more items checked, and moderate to severe problems resulting from the mood symptoms). The original version achieved a Cronbach's alpha coefficient of .90.

The following self-report instruments were administered to both samples, in addition to the Brief QoL.BD:

The **Satisfaction With Life Scale - SWLS** (Diener, Emmons, Larsen & Griffin, 1985; Portuguese version: Laranjeira, 2009) measures subjective well-being through five items, measured on a 7-point Likert-type scale (1 – "*Completely disagree*"; 7 – "*Completely agree*"), where higher scores indicate higher levels of subjective well-being. The original scale showed .87 reliability and the Portuguese version, .89. In this study, the Portuguese version of the SWLS was used, showing a good reliability in the clinical sample (α = .89, n=41).

The **Positive and Negative Affect Scale - PANAS** (Watson, Clark & Tellegen, 2009; Portuguese version: Galinha & Pais -Ribeiro, 2005), consists of a scale of 20 items/emotions, uniformly divided into two subscales: PANAS-PA and PANAS-NA (positive and negative affect, respectively), rated on a 5-point Likert-type scale (1 – "*Not at all or very slightly*"; 5 – "*Extremely*"), where higher scores indicate higher levels of positive or negative affect. For the Portuguese adaptation of this scale, the authors replicated the original methodology, for a more accurate representation of the Portuguese emotional lexicon, respecting cultural and linguistic differences, without compromising the scale's original structure. Its values of reliability (α_{PA}=

.86 and α_{NA}= .89) were of identical magnitude to the originals (α_{PA}= .88 and α_{NA}= . 87). The present study used the Portuguese version, which showed an acceptable to excellent reliability in the clinical sample (α_{PA}= .91 and α_{NA}= . 74).

The **Hospital Anxiety and Depression Scale - HADS** (Zigmond & Snaith, 1983; Portuguese translation and adaptation: Pais-Ribeiro et al., 2007), was developed to assess emotional changes in an hospital setting. It contains two subscales: HADS-ANX and HADS-DEP (anxiety and depression, respectively) , each with 7 items, scored separately, on a scale from 0 – 3 points, with total scores ranging from 0 to 21 points for each subscale and the higher the score, the greater the level of anxiety and/or depression. Six of the items are inverted, in order to minimise biased or standardised responses. The cut-off point differs from study to study, and in the Portuguese version, it was considered to be 11 points for both subscales. The Portuguese version achieved values of α_A= .76 and α_D= .81, similar to those obtained by Bjelland and collaborators (2002) in a review, with ranges from .76 to .93 for anxiety and .67 to .90 for depression. This study used the Portuguese version and achieved a good reliability in the clinical sample (α_A= .85 and α_D= .85).

The **Other As Shamer Scale 2 - OAS2** – Short version of the OAS (Goss, K., Gilbert, P., & Allan, S., 1994; short Portuguese version: Matos, M., Pinto-Gouveia, J. , & Duarte, C., 2011), is an abbreviated version and it measures external shame. It has 8 items, rated on a 5-point Likert-type scale (1 – "*Never*"; 5 – "*Almost always*"), where higher scores indicate a greater perception of others' view of the subject as negative, that is, higher levels of external shame. The alpha value of OAS2 was .82, proving to be a good measure of external shame, similarly to OAS (α = .89). This study used the abbreviated Portuguese version (OAS2), which had an excellent reliability in the clinical sample (α = .94).

In addition, some participants from both samples answered a self-report questionnaire:

The **Impact of COVID-19 on QoL**, based on the Brief QoL.BD, assesses the impact of the pandemic, on a scale from 1 to 10 (1 - "*does not affect anything*"; 10 - "*affects a lot/disabling*", and DA (0) - "*does not apply*"), on the 12 domains of the Brief QoL.BD (Physical, Sleep, Humour, Cognition, Leisure, Social, Spirituality, Finances, Household, Self-esteem, Independence and Identity), plus an additional "Studies/Work" domain in both samples and an additional item "Impact on your Bipolar Disorder" for the clinical sample. This scale showed an excellent reliability in the clinical sample ($\alpha = .90$).

Results

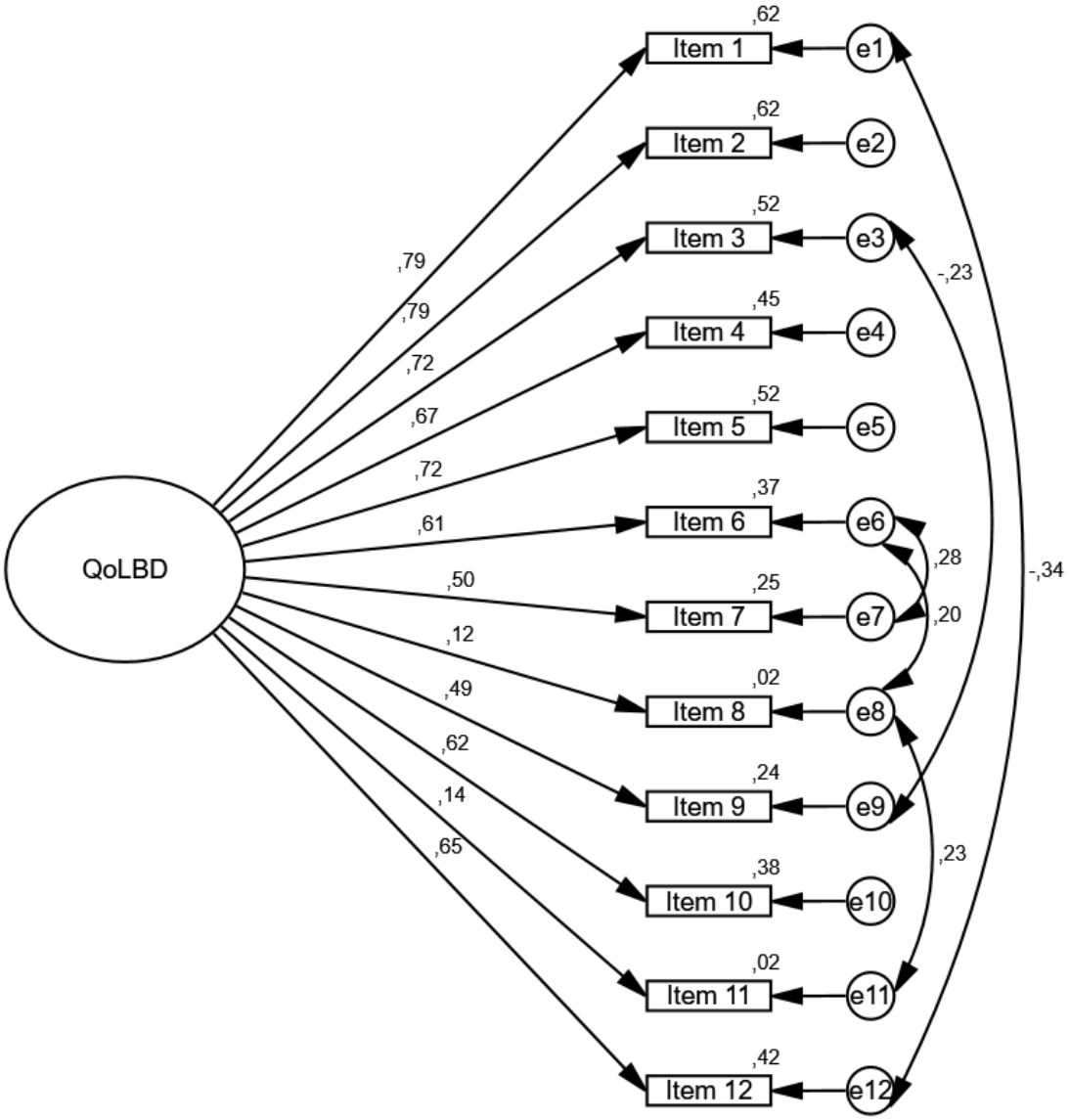
Psychometric study of the Brief QoL.BD

Construct validity (confirmatory factor analysis; CFA)

CFA was performed as a confirmatory method of the underlying factorial structure of the Brief QoL.BD in the clinical sample – people with Bipolar Disorder. Previous studies demonstrated a single-factor solution of the Brief Qol.BD (Michalack et al., 2010), thus, we tested the same structure (see figure 1). After applying modification indices (Figure 1), the model fit showed a good adjustment ($\chi 2/df = 1.194$; CFI = .98; TLI = .97; RMSEA = .042). Factor loadings were all above |0.4| except for the items 8 ("*Had enough money for extras*") and 11 ("*Travelled around freely [e.g., driving, using public transport]*"), both bellow |.15| (cf. Figure 1). Although loading values were unacceptable for both items, we decided to keep them since each one represents a domain of the 12 that make up the original scale (Finances and Independence, respectively).

Figure 1.

(Final) confirmatory factor analysis (standardised) coefficients for the Brief Quality of Life in Bipolar Disorder (QoL.BD).



Note. QoLBD = Quality of Life in Bipolar Disorder.

Reliability (internal consistency)

Internal consistency analysis was assessed through Cronbach's alpha, as it is considered the best test reliability estimation and the quality of the items was examined by calculating the items' correlation with the total score, except for the item itself

(Nunnally, 1978). Regarding the clinical sample (cf. Table 2), the Brief QoL.BD (12 items) showed a very good reliability with .84 (n=110), unaffected by the removal of any of its items. Item-total correlations are adequate, ranging from .29 (item 11) to .75 (item 1 and 5). In the non-clinical sample the Brief QoL.BD also showed a very good reliability with .91 (n=140).

Table 2.

Study of item properties and internal consistency for the clinical sample (n=110)

Brief QoL.BD (α=.84)	M	DP	r	α
1. "*Felt physically well*" (Physical)	3.33	1.17	.75	.73
2. "*Awoken feeling refreshed*" (Sleep)	3.01	1.07	.74	.73
3. "*Enjoyed things as much as I usually do*" (Mood)	3.26	1.11	.73	.73
4. "*Had good concentration*" (Cognition)	3.08	1.08	.69	.73
5. "*Been interested in my leisure activities*" (Leisure)	3.36	1.15	.75	.73
6. "*Been interested in my social relationships*" (Social)	3.07	1.17	.70	.73
7. "*Practised my spirituality as I wished*" (Spirituality)	3.02	1.21	.59	.73
8. "*Had enough money for extras*" (Finances)	2.82	1.2	.31	.75
9. "*Kept my home tidy*" (Household)	3.25	1.12	.53	.74
10. "*Felt accepted by others*" (Self-esteem)	3.42	1.12	.66	.73
11. "*Travelled around freely (e.g., driving, using public transport)"* (Independence)	2.91	1.36	.29	.75
12. "*Had a clear idea of what I want and don't want*" (Identity)	3.42	1.10	.65	.73

Note. Brief QoL.BD = Brief Quality of Life in Bipolar Disorder Scale.

Convergent and Divergent Validity

Both convergent and divergent validity were assessed in the clinical sample (cf. Table 4). Convergent validity was assessed through SWLS and PANAS-PA, showing a positive significant moderate correlation of .45 and .52, respectively ($p < .01$). Divergent validity was supported by negative significant moderate correlations with PANAS-NA ($r = -.53$), HADS-DEP ($r = -.65$), HADS-ANX ($r = -.60$), and OAS2 ($r = -.45$).

Table 4.

Correlations between Brief QoL.BD and HADS-ANX. HADS-DEP, OAS2, SWLS, PANAS-PA, PANAS-NA.

		HADS ANX	HADS DEP	OAS2	SWLS	PANAS PA	PANAS NA
Brief QoL.BD	Pearson Correlation	-.604**	-.653**	-.452**	.453**	.523**	-.529**
	N	95	95	79	41	94	94

Note. Brief QoL.BD = Brief Quality of Life in Bipolar Disorder Scale; HADS-ANX = Hospital Anxiety and Depression Scale – Anxiety subscale; HADS-DEP = Hospital Anxiety and Depression Scale – Depression subscale; OAS2 = Other as Shamer Scale 2; SWLS = Satisfaction With Life Scale; PANAS-PA = Positive Affect subscale of the Positive and Negative Affect Scale; PANAS-NA = Negative Affect subscale of the Positive and Negative Affect Scale.
** $p \leq .01$; * $p \leq .05$.

Predicting quality of life from depression and anxiety, positive and negative affect, and external shame

A three stage hierarchical multiple regression was conducted with quality of life (Brief QoL.BD) as the dependent variable (cf. Table 5). Depression (HADS-DEP) and anxiety (HADS-ANX) were entered at stage one of the regression, positive (PANAS-PA) and negative affect (PANAS-NA) were entered at stage two, and external shame (OAS2) at stage three. Prior to this analysis, correlations between the Brief QoL.BD and some of the demographics (civil

status, work situation, gender, age, and years of schooling) were calculated and no statistically significant correlations were found.

Table 5.

Summary of Hierarchical Regression Analysis for Variables predicting QoL

Variable	β	t	R	R^2	ΔR^2
Step 1			.659	.435	.435
Depression	-.418	-3.874**			
Anxiety	-.316	-2.930**			
Step 2			.692	.479	.044
Depression	-.242	-1.871			
Anxiety	-.256	-1.965			
Positive Affect	.239	2.224*			
Negative Affect	-.148	-1.267			
Step 3			.705	.497	.019
Depression	-.202	-1.545			
Anxiety	-.235	-1.820			
Positive Affect	.250	2.350*			
Negative Affect	-.097	-.810			
External Shame	-.165	-1.659			

Note. N=79; ** $p \leq .01$; * $p \leq .05$

The hierarchical multiple regression revealed that at Stage one, both HADS-DEP (depression) and HADS-ANX (anxiety) contributed significantly to the regression model (F (2.76) = 29.211, $p < .01$), and accounted for 43.5% of the variation in the Brief QoL (quality of life). Introducing the PANAS-PA and PANAS-NA (positive and negative affect), this variables explained an

additional 4.4% of variation in the Brief QoL (quality of life) and this change in R^2 was significant, F (2.74) = 3.115, p=.05. Finally, when the fifth independent variable was included in stage three of the regression model, OAS2 (external shame) was not a significant predictor of the Brief QoL (quality of life), explaining an additional 1.9% of its variation. In this last model, change in R^2 was not significant, F (1.73) = 2.745, p=.101.

The most important predictors of the Brief QoL (quality of life) were HADS-ANX (anxiety) and HADS-DEP (depression), uniquely explaining 43.5% of its variation. Together the five independent variables accounted for 49.7% of the variance in Brief QoL.

Differences in the QoL between the clinical and non-clinical samples

When compared, the clinical sample scored significantly lower than the general adult population one in the items: 1. "*Felt physically well*" (Physical); 3. "*Enjoyed things as much as I usually do*" (Mood); 4. "*Had good concentration*" (Cognition); 6. "*Been interested in my social relationships*" (Social); 8. "*Had enough money for extras*" (Finances); 9. "*Kept my home tidy*" (Household); 10. "*Felt accepted by others*" (Self-esteem); 12. "*Had a clear idea of what I want and don't want*" (Identity; cf. Table 6).

Table 6.

Descriptive statistics of the Brief QoL.BD item scores. Means (M). Standard Deviations (SD). and independent samples t-test differences between the clinical sample (n=110) and the general adult population (n=140).

	Clinical sample (n = 110)		General adult population sample (n = 140)			
	M	*SD*	*M*	*SD*	*t*	*p*
1. "*Felt physically well*" (Physical)	3.33	1.166	3.67	.992	-2.471***	.014*
2. "*Awoken feeling refreshed*" (Sleep)	3.01	1.071	3.19	1.063	-1.3	.195

3. "*Enjoyed things as much as I usually do*" (Mood)	3.26	1.114	3.57	1.046	-2.243	.026*
4. "*Had good concentration*" (Cognition)	3.08	1.076	3.56	.891	-3.79***	.000*
5. "*Been interested in my leisure activities*" (Leisure)	3.36	1.147	3.62	1.076	-1.826	.069
6. "*Been interested in my social relationships*" (Social)	3.07	1.171	3.53	.933	-3.336***	.001**
7. "*Practised my spirituality as I wished*" (Spirituality)	3.02	1.211	3.28	.982	-1.877	.062
8. "*Had enough money for extras*" (Finances)	2.82	1.198	3.46	1.140	-4.301	.000**
9. "*Kept my home tidy*" (Household)	3.25	1.119	3.58	.997	-2.485	.014*
10. "*Felt accepted by others*" (Self-esteem)	3.42	1.120	3.72	.882	-2.382***	.021*
11. "*Travelled around freely (e.g.. driving. using public transport)"* (Independence)	2.91	1.358	2.84	1.344	.426	.670
12. "*Had a clear idea of what I want and don't want*" (Identity)	3.42	1.104	3.74	.910	-2.436***	.016*

*** Equal variances not assumed; ** $p \leq .01$; * $p \leq .05$.

When compared, the clinical sample scored significantly higher than the general adult population one in all the negative scales (PANAS-NA, OAS2, HADS-ANX, HADS-DEP), and lower in almost all positive scales (SWLS, Brief QoL.BD; cf. Table 7). No statistically significant differences were found in the PANAS-PA scale.

Table 7.

Descriptive statistics of scales' scores. Means (M), Standard Deviations (SD), and independent samples t-test differences between the clinical sample (n=110) and the general adult population (n=140).

	Clinical sample		General adult population sample			
	(n = 110)		(n = 140)			
	M	*SD*	*M*	*SD*	*t*	*p*
Brief QoL.BD	37.95	8.43	41.75	8.68	-3.484	.001**
	(n = 41)		(n = 137)			
	M	*SD*	*M*	*SD*	*t*	*p*
SWLS	17.66	7.299	23.62	6.61	-4.943	.000**
	(n = 95)		(n = 126)			
	M	*SD*	*M*	*SD*	*t*	*p*
HADS-ANX	8.42	4.37	6.46	3.76	3.578	.000**
HADS-DEP	7.08	4.62	4.79	3.76	4.062	.000**
	(n = 94)		(n = 125)			
	M	*SD*	*M*	*SD*	*t*	*p*
PANAS-PA	22.38	8.17	24	6.79	-1.557***	.121
PANAS-NA	21.69	10.01	16.62	5.93	4.364***	.000**
	(n = 79)		(n = 124)			
	M	*SD*	*M*	*SD*	*t*	*p*
OAS2	10.15	7.83	5.79	5.65	4.287***	.000**
	(n = 32)		(n = 60)			
	M	*SD*	*M*	*SD*	*t*	*p*
Impact of COVID-19	63.83	25.56	59.44	29.19	.716	.476

Note. Brief QoL.BD = Brief Quality of Life in Bipolar Disorder Scale; SWLS = Satisfaction With Life Scale; HADS-ANX = Hospital Anxiety and Depression Scale – Anxiety subscale; HADS-DEP = Hospital Anxiety and Depression Scale – Depression subscale; PANAS-PA = Positive Affect subscale of the Positive and Negative Affect Scale; PANAS-NA = Negative Affect subscale of the Positive and Negative Affect Scale.; OAS2 = Other as Shamer Scale 2.
*** Equal variances not assumed; ** $p \leq .01$; * $p \leq .05$.

Gender Differences in the Clinical Sample

There are no statistically significant gender differences in the in the clinical sample regarding age and years of schooling successfully completed. Statistically significant differences were

found in HADS-ANX. HADS-DEP and PANAS-NA, where men scored lower than women in all three (cf. Table 8).

Table 8.

Gender Differences in the Clinical Sample. Means (M). Standard Deviations (SD) and independent samples t-test differences between female (n=73) and male (n=37) gender.

	Male		Female			
	(n = 37)		(n = 73)			
	M	*SD*	*M*	*SD*	*t*	*p*
Age	43.3	11.72	44.07	11.796	.325	.746
Years of sch.	14.27	3.87	14.4	4.07	.166	.869
Brief QoL.BD	38.59	7.97	37.62	8.69	-.573	.568
	(n = 12)		(n = 29)			
	M	*SD*	*M*	*SD*	t	p
SWLS	19.42	7.49	16.93	7.23	-.992	.327
	(n = 32)		(n = 63)			
	M	*SD*	*M*	*SD*	t	p
HADS-ANX	7.03	3.4	9.13	4.65	2.495***	.015*
HADS-DEP	5.63	4.13	7.83	4.72	2.239	.028*
	(n = 32)		(n = 62)			
	M	*SD*	*M*	*SD*	t	p
PANAS-PA	23.09	7.09	22.02	8.71	-.604	.547
PANAS-NA	18.69	7.13	23.24	10.95	2.427***	.017*
	(n = 28)		(n = 51)			
	M	*SD*	*M*	*SD*	t	p
OAS2	9.54	6.97	10.49	8.32	.515	.608

Note. Years of sch. = years of schooling successfully completed; Brief QoL.BD = Brief Quality of Life in Bipolar Disorder Scale; SWLS = Satisfaction With Life Scale; HADS-ANX = Hospital Anxiety and Depression Scale – Anxiety subscale; HADS-DEP = Hospital Anxiety and Depression Scale – Depression subscale; PANAS-PA = Positive Affect subscale of the Positive and Negative Affect Scale; PANAS-NA = Negative Affect subscale of the Positive and Negative Affect Scale.; OAS2 = Other as Shamer Scale 2.

*** Equal variances not assumed; ** $p \leq .01$; * $p \leq .05$.

Differences between Bipolar I and II Disorders

When compared, the two BD types have no statistically significant differences in age or years of schooling successfully completed. Statistically significant differences were found in QoL.BD, showing that BD I scored higher than BD II and we also found that HADS-ANX and

HADS-DEP was significantly lower in BD I (cf. Table 9). In order to better understand the impact of HADS-ANX and HADS-DEP in QoL in both BD types, simple linear regressions were performed showing that HADS-DEP alone explained 28.9 % of the Brief QoL.BD in participants with BD I (R^2 = .289; F(1.46) = 18.696, p < .001), and 45.5% in BD II (R^2 = .455; F(1.12) = 10.017, p = .008). Also, HADS-ANX alone explained 31.2 % of the Brief QoL.BD in participants with bipolar I disorder (R^2 = .312; F(1.46) = 20.814, p < .001), and 34.6% in participants with bipolar type II (R^2 = .346; F(1.12) = 6.341, p = .027).

Table 9.

Differences between bipolar type I and II. Means (M), Standard Deviations (SD), and independent samples t-test differences between bipolar I (n=52) and bipolar II (n=20) disorders.

	Bipolar I		Bipolar II			
	(n = 52)		(n = 20)			
	M	*SD*	*M*	*SD*	*t*	*p*
Age	42.92	11.77	48.30	10.13	-1.8	.076
Years of sch.	13.92	4.13	14.83	4.296	-.822	.414
Brief QoL.BD	40.23	7.88	34.1	8.98	2.844	.006**
	(n = 24)		(n = 8)			
	M	*SD*	*M*	*SD*	t	p
SWLS	18.42	7.95	19.13	6.38	-.228	.821
	(n = 48)		(n = 14)			
	M	*SD*	*M*	*SD*	t	p
HADS-ANX	7.29	3.95	9.79	4.63	-1.999	.05*
HADS-DEP	6.1	4.58	9.79	5.07	-2.583	.012*
	(n = 48)		(n = 14)			
	M	*SD*	*M*	*SD*	t	p
PANAS-PA	24.02	8.27	19.64	8.26	1.744	.086
PANAS-NA	19.56	10.18	23.57	10.54	-1.287	.203
	(n = 44)		(n = 9)			
	M	*SD*	*M*	*SD*	t	p
OAS2	9.32	7.56	14.22	7.76	-1.766	.083
	(n = 52)		(n = 20)			
	N	*%*	*N*	*%*	χ^2	*p*
Gender					1.696	.193

Male	15	28.85	9	45		
Female	37	71.15	11	55		
	(n = 52)		(n = 20)			
	N	*%*	*N*	*%*	χ^2	*p*
Living Area					.074	.786
Urban	32	61.54	13	65		
Rural	20	38.46	7	35		
Academic Degree					8.002	.332
4th Grade	1	1.9	1	5		
6th Grade	3	5.8	0	0		
Basic Education (9th Gr.)	9	17.3	2	10		
Secondary Education	12	23.1	2	10		
Graduate Diploma (BSc)	21	40.4	10	50		
Master's Degree	3	5.8	4	20		
PhD	2	3.8	0	0		
Other	1	1.9	1	5		
	(n = 52)		(n = 19)			
	N	*%*	*N*	*%*	χ^2	*p*
Working Situation					11.216	.190
Student	5	9.6	0	0		
Full Time	17	32.7	10	52.6		
Part Time	1	1.9	3	15.8		
On Sick Leave	10	19.2	2	10.5		
Retired due to Disability	5	9.6	2	10.5		
Retired	1	1.9	0	0		
Self-employed	1	1.9	0	0		
Unemployed	10	19.2	1	5.3		
Other	2	3.8	1	5.3		
	(n = 51)		(n = 18)			
	N	*%*	*N*	*%*	χ^2	*p*
Meaningful Relationship					.209	.648
Yes	28	54.9	7	38.89		
No	23	45.1	11	61.11		
	(n = 51)		(n = 20)			
	N	*%*	*N*	*%*	χ^2	*p*
Civil Status					5.532	.237
Single	24	47	4	20		

Married	13	25.5	9	45		
Civil Union	3	5.9	1	5		
Divorced	10	19.6	6	30		
Widowed	1	2	0	0		
	(n = 49)		(n = 19)			
	N	*%*	*N*	*%*	χ^2	*p*
Children					3.389	.066
Yes	24	48.98	14	73.68		
No	25	51.02	5	26.32		

Note. Years of sch. = years of schooling successfully completed; Brief QoL.BD = Brief Quality of Life in Bipolar Disorder Scale; SWLS = Satisfaction With Life Scale; HADS-ANX = Hospital Anxiety and Depression Scale – Anxiety subscale; HADS-DEP = Hospital Anxiety and Depression Scale – Depression subscale; PANAS-PA = Positive Affect subscale of the Positive and Negative Affect Scale; PANAS-NA = Negative Affect subscale of the Positive and Negative Affect Scale.; OAS2 = Other as Shamer Scale 2.
** $p \leq .01$; * $p \leq .05$.

Impact of COVID-19 on QoL

The clinical (n=32) and non-clinical (n=60) samples used for the analysis regarding the Impact of COVID-19 showed statistically significant differences in the years of schooling successfully completed (t(88) = 3.844. p < .001; *M* = 15.02. *SD* = 2.896 and *M* = 12.20. *SD* = 3.448. respectively). In spite of that, this variable showed no statistically significant correlation neither with the Brief QoL.BD nor the Impact of COVID-19. On the other hand, Impact of COVID-19 showed a significant moderate negative correlation with Brief QoL.BD of -.399 (p < .01), when the entire sample (n=92) was considered. When calculated separately for each sample, the correlation lost significance in the clinical sample alone and gained magnitude in the non-clinical sample alone, with a negative significant moderate correlation of -.494 (p < .01). When assessing perceived COVID-19 impact in their lives, the clinical and non-clinical samples showed no statistically significant differences.

Simple linear regression model analyses were calculated for both samples separately, with the impact of COVID-19 as the independent variable, that showed that it explained 24% of the QoL in the non-clinical sample ($R^2 = .24$; F(1.58)=18.347. p < .001), and did not explain the variance

of QoL in the clinical sample (p = .396). Later, a multiple linear regression model analysis was calculated with both years of schooling and impact of COVID-19 as independent variables and the years of schooling successfully completed did not explain the variance of QoL in neither the clinical or non-clinical samples (p = .921 and p = .509, respectively).

Discussion

Given the increasing attention towards QoL, as an important outcome measure in BD (Michalak et al., 2005; Lorenzo-Luaces and Amsterdam, 2018; Murray and Michalak, 2012; Morton et al. 2017), several studies suggest the development of a disorder-specific instrument to measure it in this particular population (IsHak et al., 2012; Mackala et al., 2014; Michalak et al. , 2005, 2010; Murray e Michalak, 2012; Subero et al., 2013). The Brief Quality of Life in Bipolar Disorder (Brief QoL.BD) is a short version of the first and only self-report instrument to assess changes in quality of life (QoL) in the different phases of bipolar disorder (BD), whereas in Portugal there is no equivalent measure. Thus, our primary aim was to adapt and assess the validity and reliability of the Portuguese Brief QoL.BD. Additionally, to address the associations between QoL and the other variables under study, and to describe the differences between the populations under study.

The Portuguese version of Brief QoL.BD demonstrated satisfactory psychometric properties. Just like the original Brief QoL.BD (Michalak et al., 2010), our version corroborated a one-factor solution and a good fit, through confirmatory factor analysis. Even though two items (8. "*Had enough money for extras*" and 11. "*Travelled around freely [e.g., driving, using public transport]*") showed unacceptable factor loadings, they were kept since each one represents a domain of the 12 that make up the original scale (Finances and Independence, respectively). Both of them important for a more complete assessment of the construct. Also, we believe this particular items might have been affected by the effect of the COVID-19 pandemic, responsible for traveling constrains and affected income - the effect of the pandemic will be discussed further below.

The assessment of the internal consistency revealed a good reliability, similar to the original of .87 (Michalak et al., 2010), for both the clinical and general populations (.84 and .91, respectively). Positive significant correlations between quality of life and both satisfaction with

life (used in the original version; Michalak et al., 2010) and positive affect (also used in the original version; Michalak et al., 2010) assured convergent validity and negative significant moderate correlations with negative affect (also used in the original version; Michalak et al., 2010), depression (with well-known negative correlations with QoL; Michalak et al., 2013; Bauer et al., 2001; Yatham et al., 2004; Sierra et al., 2005; Saragoussi et al., 2018), anxiety (known to negatively impact subjective well-being; Cramer et al., 2005) and external shame (found to be a significant predictor of low QoL; Persons et al., 2010) supported divergent validity.

Discriminative validity was supported by significant differences between the total score of the Brief QoL.BD when comparing the clinical and general populations, as described in previous literature (Maina et al., 2007; Jansen et al., 2013).

As predicted, quality of life and satisfaction with life were significantly lower in the BD population (similarly to Gutiérrez-Rojas et al., 2008; Michalak et al., 2005; Xiang et al., 2013), as well as anxiety, depression, shame, and negative affect were higher (consistent with existing literature; Maina et al., 2007; Jansen et al., 2013).

One of the domains of quality of life that revealed to be significantly lower in the clinical population was the physical one, which is the only domain frequently described as significantly impaired compared to the general population – possible explanations might include adverse effects of psychotropic drugs, less selfcare, neglect of physical condition, poorer medical care, and poorer nutrition (Xiang et al.. 2013). Some of the significantly lower domains were common to other validation studies of this measure, such as the physical, mood, cognition, finances and identity (Provencher et al., 2020; Modabbernia et al., 2015; Inder et al., 2008; Proudfoot et al., 2009), while others were not: social, household, and self-esteem. The impact of the current pandemic in QoL domains was taken into consideration, as it has been shown to be associated with financial uncertainty (Stefana et al., 2020), lowered self-esteem, and

alienation (Brooks et al., 2020). However, neither significant correlations nor significant explanatory value were found in the clinical sample, regarding perceived impact of COVID-19 and quality of life. Future research is needed to further explore this scale in the Portuguese population with BD in post-pandemic conditions.

Some demographic characteristics were found significantly different between populations. For instance, a higher percentage of individuals with BD work part time, are on sick leave, retired due to disability or unemployed, reflecting more precarious work situations. This data is similar to previous descriptions of the higher work (Dean et al., 2004b) and functional (Sierra et al., 2007; Xiang et al.. 2013) impairment in BD populations. Also, a significantly smaller percentage of the clinical population were in a meaningful relationship, suggesting possible difficulties in maintaining meaningful relationships, also congruous with previous descriptions (Rihmer & Kiss, 2002).

Female sex showed significantly higher anxiety, depression, and negative affect, which was expected as it consists of a common risk factor associated with those measures (Morton et al., 2017; Yen et al., 2008). Also, participants with type II BD showed significantly lower quality of life when compared to individuals with type I BD and significantly higher anxiety and depression, as described by Maina and collaborators (2007), as well as a significantly higher impact of depression and anxiety in their perception of quality of life, which is consistent with the findings that type II BD is more difficult to stabilize (American Psychiatric Association, 2013), making it more difficult to function and possibly contributing to a lower perception of quality of life (Maina et al., 2007).

Considering the atypical pandemic context of this cross-sectional study, the impact of COVID-19 on the quality of life was controlled through the assessment of the impact of this pandemic in the 12 domains of the Brief QoL.BD. Even though BD presents higher pandemic-related risks than the general population (Stefana et al., 2020; de Hert et al., 2011;Mazza et al., 2020),

we did not find the impact of the COVID-19 to be statistically significant in the clinical population, alike other findings (Karantonis et al., 2021), meaning that lower QoL was explained by other factors. Interestingly, this impact was significant in the non-clinical sample, as shown in other studies (Paulino et al., 2020; Cao et al., 2020; S. Li et al., 2020; Z. Li et al., 2020; Liu et al., 2020; C. Wang et al., 2020a; Y. Zhang & Ma, 2020), which might be explained by the previous burden subjacent to the mood episodes and constrained life that people with BD already faced previously to the COVID-19 pandemic. Also, for some BD the pandemic actually helped them in their daily-life difficulties, because working from home contributed to greater stability for some of them.

Regarding the predictors analysis for QoL, the most significant predictors were anxiety and depression, that uniquely explained 43.5% of the variation in quality of life. Together anxiety, depression, positive and negative affect and external shame accounted for 49.7% of the variance in quality of life. Despite these findings, other factors besides mood symptoms may play an important role in QoL and deserve a closer look in future research, since even though QoL in BD patients is significantly higher between episodes (Gao et al., 2019; Hofer et al., 2017), it is still impaired in remitted euthymic patients (Michalak et al., 2005; Sierra et al., 2005; Gutiérrez-Rojas et al., 2008; Dias et al. 2008). Some of these factors that have been already pointed out in research include: lower levels of education (Hawke et al., 2013; Michalak et al., 2006, 2013; Yen et al., 2008) and lack of good social support (Hawke et al., 2013; Mackala et al., 2014; Michalak et al., 2013; Gutiérrez-Rojas et al., 2008; IsHak et al., 2012; Yen et al., 2008).

Limitations, clinical implications and future studies

Despite these results, the present findings should be considered in light of some limitations. Namely, a small sample size (given the fact that it consists of a clinical sample) and size inconsistency between analysis (due to completion inconsistencies of participants and technical

failures). Additionally, for the clinical sample, the phases of BD where not discriminated - whether patients were assessed during or between episodes – or the type of episode they were in or out at the time of the assessment. Thus, self-report bias must be considered, since the diverse symptoms present in this disorder have different consequences for the patients' insight. Therefore, future research is needed to understand how the scale behaves across different phases of BD. Also, in all comparisons between samples, groups have not been strictly matched (with sociodemographic statistically significant differences in the living area, working situation, meaningful relationship and civil status), since only age and years of schooling were taken into account. Therefore, future research may consider more sociodemographic variables when pairing the samples. Another limitation to be acknowledged is the fact that the effect of medical and psychiatric comorbidities was not controlled, considering that comorbidity may be an important contributor to functional impairment, quality of life and bipolar disorder outcome.

Regarding the predictors analysis, because of its cross-sectional design, it is not possible to tease apart the direction of causality in the relationship between QoL and the other variables considered. Therefore, longitudinal studies are needed to explore the relationship between BD symptoms and QoL over time (Morton et al.. 2017), considering that improvements in wellbeing and functioning may moderate symptoms in BD (Murray and Michalak, 2012), as well as decrease QoL.

In regard of the psychometric study of the scale, future research is needed to analyse the test-retest reliability of the Portuguese version of the Brief QoL.BD, as well as replicate all analyses post-pandemic. Future studies are also required to validate the full version - QoL.BD - for the Portuguese population.

Conclusion

The Portuguese version of the Brief QoL.BD proved to be a reliable and valid questionnaire to use in people with bipolar disorder. Given its good psychometric properties, its use is encouraged and recommended for the assessment of quality of life in BD populations, both in clinical and research settings. Additionally, this brief version entails a short filling time, contributing to a more convenient time-saving and user-friendly use. Finally, this study contributes with new, useful, informative data, from a disorder-specific instrument, of the Portuguese BD population, which may be used for future reference in upcoming studies.

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