Psychiatry Research 268 (2018) 165–168

Contents lists available at ScienceDirect

Psychiatry Research

journal homepage: www.elsevier.com/locate/psychres

Short communication

The impact of clinical comorbidities and residual depressive symptoms in sleep quality in euthymic/interepisodic bipolar subjects

Paulo Rocha[a,b,*], Humberto Correa[a,b,c]

[a] Instituto de Ciências Biológicas - Programa de Pós-Graduação em Neurociências - Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil
[b] Departamento de Saúde Mental - Faculdade de Medicina - Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil
[c] Programa de Pós-Graduação Em Medicina Molecular - Faculdade de Medicina - Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil

ARTICLE INFO

Keywords:
Bipolar disorder
Sleep
Euthymia

ABSTRACT

Sleep disturbances are feasibly linked with poorer outcome in BD. This study aims to cross-sectionally investigate clinical factors associated with sleep disruption in euthymic BD patients. We assessed sleep quality in a sample of 209 euthymic BD patients with the Pittsburgh Sleep Quality Index. After multiple logistic regression analysis controlling for several confounding factors, the variables number of clinical diseases and Hamilton global score remained significant and independently associated with poor sleep quality. Our results suggest that euthymic BD patients presenting poor sleep quality are more likely to have clinical comorbidities and manifest subsyndromal depressive symptomatology.

1. Introduction

Bipolar Disorder (BD) is a common psychiatric condition that leads to functional disability, poor quality of life, increased suicide risk and reduced life expectancy (Costa et al., 2015; Gitlin and Miklowitz, 2017; Kessing et al., 2015; Xiao et al., 2016). Since classic Kraepelin´s description of manic-depressive insanity to current psychiatric diagnosis criteria, sleep disturbances are typically described during major mood episodes in BD (Kraepelin, 1921; APA, 2013). A recent study showed that reduced sleep need and insomnia are the most frequent disturbances when in mania and both insomnia and hypersomnia are the most frequent disturbances when in depression (Kanady et al., 2015). BD patients may share several elements predisposing to sleep dysfunction, from genetic factors, clinical/psychiatric comorbidities and the use of psychotropic medications (Melo et al., 2016). In fact, previous evidences have showed association of chronic medical conditions and sleep problems in BD (Geoffroy et al., 2014). However, the reasons for the frequent sleep disturbances in bipolar patients are not entirely understood. Lately, researchers have described sleep disturbances to be frequent during the “so-called” euthymic, remitted or interepisodic phases of BD, with poor sleep quality being reported in as much as 70% of bipolar euthymic subjects (Melo et al., 2016; Rocha et al., 2013). Furthermore, several aspects of sleep quality such as latency, duration and efficiency are disrupted in euthymic BD patients, which may explain their frequent sleep complaints (Rocha et al., 2013; Geoffroy et al., 2015). To a large extent, researchers' interest in this topic was due to the emergence of evidence that sleep disturbances during euthymia correlate with poorer outcome in BD (Gruber et al., 20092011).

Sleep quality is an essential clinical concept as sleep-related disturbances are frequent in the general population and arise as a common feature along with several chronic medical conditions as well as psychiatric disorders (Buysse et al., 1989). It is considered a subjective measure of sleep function. Along with several other sleep parameters, some previous studies have demonstrated interepisodic BD patiens frequently display poor sleep quality (Rocha et al., 2013; Saunders et al., 2013). Thus, the aim of this study is to investigate the possible relation of poor sleep quality and sociodemographic, psychiatric and clinical variables in a sample of euthymic BD patients.

2. Methods

2.1. Ethics statement

We required informed consent and agreement from all the subjects who joined this study, after explanation of the procedures of the research protocol. Institutional Ethics Board (Universidade Federal de Minas Gerais) analysis and approval of the research protocol (ETIC 553/08) was adequately achieved. Data collection occurred from 2009–2013.

* Corresponding author at: Avenida Professor Alfredo Balena, 190, sala 267, Belo Horizonte, Minas Gerais Postal Code 30130-100, Brazil.
E-mail address: paulombrasil@gmail.com (P. Rocha).

https://doi.org/10.1016/j.psychres.2018.07.002
Received 31 March 2018; Received in revised form 23 May 2018; Accepted 3 July 2018
Available online 12 July 2018

2.2. Study protocol and procedures

This study comprised 209 BD patients, all of them in regular medical care at psychiatric outpatient ambulatory services. Psychiatric diagnosis and comorbidities were implemented by the Brazilian version of the MINI-PLUS (Amorim, 2000), a semi-structured psychiatric diagnostic instrument based in the DSM-IV-TR criteria. BD patients had their medical histories reviewed to endorse psychiatric diagnosis. Euthymia was established as a score lower than 7 in both Hamilton Rating Scale for Depression (HRSD) and the Young Mania Rating Scale for the last four weeks (YMRS), as well as the lack of criteria for depressive and manic/hypomanic episodes in the MINI-PLUS interview, based on DSM-IV criteria (Amorim, 2000; APA, 2000; Hamilton, 1960; Young et al., 1978). We also used medical notes to achieve a clinical validation of the euthymia state (lack of criteria for depressive and manic/hypomanic episodes for the last four weeks).

Our BD sample were all in regular treatment throughout the period of their assessment. The method described in a previous study (Wojnar et al., 2009) was used for the assessment of clinical comorbidities, a recognized risk factor for sleep disorders. This method generates a score based on the number of clinical diseases presented by each individual and is used to facilitate comparison between groups and avoid data loss due to small number of observations (Taylor et al., 2007). Thus, clinical comorbidities were measured by counting the number of chronic medical conditions reported which was used as a continuous variable (ranging from 0 to 4) for statistical purposes. Sociodemographic and other clinical variables were assessed to better delineate the sample studied.

We selected the Pittsburgh Sleep Quality Index for evaluation of sleep disruption, which has already been validated to the Brazilian Portuguese (Bertolazi et al., 2011). It assesses sleep quality and disturbances in a period of 30 days (Buysse et al., 1989). According to the original validation, global scores > 5 indicates poor sleep quality. The higher the score, the worse the sleep quality. Since its development, the PSQI has been broadly used to assess sleep quality both in medical and scientific settings in different groups of patients, extending from those with psychiatric and sleep disorders, to those patients suffering from various chronic medical illness.

2.3. Statistical analysis

We performed statistical analysis in the software Statistical Package for the Social Sciences (IBM SPSS 22.0). All p-values were 2-sided and a p-value < 0.05 was considered statistically significant. Qui-square and Exact Fisher tests were used for categorical variables. Student T and Mann–Whitney tests were used whether continuous variables had parametric or non-parametric distributions. We used Shapiro–Wilk test to assess distribution of continuous variables. . In this study, BD patients presenting PSQI global scores > 5 were considered as “poor sleepers”, while global scores ≤ 5 were considered as “good sleepers”. Univariate and Multivariate analysis were performed to test the association of socio-demographic, clinical and psychiatric factors possibly associated with poor sleep quality in our sample. Hosmer–Lemeshow and area under the ROC curve tests were used to respectively estimate fitness and accuracy of the multivariate model.

3. Results

In univariate analysis, the Hamilton depression scale global score ($p < 0{,}001$), past alcohol use ($p = 0{,}044$), use of clinical medication ($p = 0{,}031$), use of anticonvulsants ($p = 0{,}039$), use of benzodiazepines ($p = 0{,}015$) significantly associated with poor sleep quality in our BD sample (Table 1). All the variables reaching p values $< 0{,}25$ in univariate analysis were also eligible for multivariate analysis (Illness length, $p = 0{,}133$; Number of hypo/manic episodes, $p = 0{,}172$; Young global score, $p = 0{,}189$; Number of clinical diseases, $p = 0{,}080$; Hypothyroidism, $p = 0{,}080$; Generalized Anxiety, $p = 0{,}072$; Panic, 0,188, Coffee, $p = 0{,}201$). After multiple logistic regression analysis controlling for several confounding factors, the variables number of clinical diseases ($p = 0{,}042$) and Hamilton depression scale global score ($p < 0{,}001$) remained independently associated with poor sleep quality in BD (Table 1). The assumptions for binary logistic regression were checked. The Hosmer–Lemeshow test is widely used in logistic regression in order to test the goodness of fit of the model. The result of the Hosmer–Lemeshow test in this study ($\chi 2$: 2,568, $p < 0{,}922$) indicates that our multivariate logistic regression model adequately explains the observed data. ROC curve showed an accuracy of 0,780 (78,0%) [CI 95% from 0,695–0,865 ($p < 0{,}001$)].

4. Discussion

Our study evaluated clinical and psychiatric factors associated with poor sleep quality in a sample of BD patients full filling criteria for euthymia. We found evidences of significant association of poor sleep quality with subysyndromal depressive symptoms and the number of clinical comorbidities in a sample of euthymic BD patients. Importantly, these results remained significant after controlling for several relevant covariates in a multivariate model. These findings should be considered in view of some limitations. Initially, our sleep assessment may be susceptible to memory bias, since we used the PSQI, which is considered a subjective sleep parameter. Second, even though we managed to select BD patients full filling criteria for euthymia, one cannot completely exclude the influence of mood disturbances on sleep status. Third, causal inferences should be avoided at first, as this is a cross-sectional study. Fourth, severity of clinical diseases were not assessed. In the other hand, a positive aspect of our study is that our sample was formed by BD patients in regular treatment, with similar rates of psychiatric and clinical comorbidity reported in previous studies. Thus, our results may be applicable to the most common BD patients in psychiatric services.

Additionally, we controlled for psychiatric medication, which could potentially influence sleep status both causing poor sleep/insomnia (psychostimulants and antidepressants) as well as improving sleep quality (benzodiazepines, mood stabilizers). In fact, previous studies found association between poor sleep quality and the use of antidepressants and anticonvulsants during euthymia, which we did not find in our sample after multivariate analysis (Keskin et al., 2018; Sylvia et al., 2012). We did not find significant association between psychiatric comorbidities and sleep quality in our study after multivariate analysis. Although previous evidences reported some conditions as anxiety, somatoform and impulse control disorders to be more frequent in euthymic BD subjects with poor sleep (Harvey et al., 2005; Keskin et al., 2018), other studies have not replicated these findings (Saunders et al., 2013).

We found significant association of subsyndromal depressive symptoms and poor sleep quality ($p < 0{,}001$; OR 1,72). In line with our findings, some previous studies found depressive symptoms to be associated with sleep disturbances in euthymic BD samples, although some of these previous studies did not control for psychiatric medication and had smaller samples (Cretu et al., 2016; Samalin et al., 2017). Interestingly, the association of sleep disturbances with subsyndromal depressive symptoms during the interepisodic phase of the disorder aligns with the classical association of sleep and mood symptoms during the major mood episodes of BD and major depression. Thus, it may raises debate regarding the core concept of euthymia in BD. It is not for other reason many authors refer to euthymia as an “interepisodic” phase of the disorder. In fact, some recent studies have shown significant association between subsyndromal depressive symptoms and negative functional and cognitive results in the “so-called” euthymic phase of BD (Gitlin et al., 2011; Gitlin and Miklowitz, 2017; Gruber et al., 2009; Samalin et al., 2017). Furthermore, recent evidences suggest subsyndromal depressive symptoms during euthymia significantly