# Insomnia As The Main Precursor Sign And Facilitator Of The Occurrence Of The Manic Phase In Bipolar Disorders

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***Abstract*—The objective of this study is to describe and understand the specificity of the relationship between insomnia and bipolar disorders (BD), hypothesizing that this link is non-zero. Anamnestic data, semi-structured interviews with each of the patients and their caregivers, and the regular administration of the insomnia severity index made it possible to collect data from the patients. The results first show a very strong, negative linear correlation between the intensity of insomnia and its duration before each occurrence of manic and hypomanic phases in BD, by indexing insomnia as a factor of triggering or amplification of the manic phase. They then show that there is a relationship between the intensity of insomnia and the type of bipolar disorder that the patient presents. Finally, they index a latency period ranging from six to sixteen days between the onset of insomnia and the occurrence of manic or hypomanic phases in the patient.**

***Keywords—Insomnia, warning sign, facilitating factor, manic phase, bipolar disorder.***

## Introduction

The presence of sleep disorders (SD) in patients with mental disorders is common. The epidemiology is even higher in patients suffering from mood disorders, as they affect 90% of them during crisis phases, and this symptomatology remains as residual symptoms in 50% in this group of patients after a crisis mental disorder[1]. Regarding depression, 75% of the 300 million people who suffer from it in the world also have insomnia. A recent popular study showed that insomnia was a predictor of depression[2]. Several studies have shown that sleep deprivation, like a sleepless night, irreversibly alters the brain, to the point where it ages by two years the next day[3]. But according to other studies, this aging is reversible if there is sufficient recovery at night [4]. For Insern[5], insomnia, “the scourge of Western societies, is a complex pathology which combines a psychological component and a neurobiological component that are difficult to dissociate”. Several studies have shown the long-term negative impact of poor quality and/or lack of sleep on the state of physical and mental health, apart from quality of life, because it aggravates the somatic or psychiatric manifestations of diseases such as chronic pain, hypertension, depression, etc.[5]. Wainberg[6], states, “Poor sleep contributes to poor mental health and poor mental health contributes to poor sleep.” Several studies have shown that bipolar patients in remission present a pattern of TS, with longer sleep onset latency, longer sleep duration, with more nighttime awakenings, and decreased sleep efficiency[7]. There is an interaction between TB and TS. It may be, as already mentioned above, a sleep disorder which causes a mental disorder, or a mental disorder which causes a sleep disorder. What about this link in the case of bipolar disorder, this chronic mood disorder, characterized by the alternation of depressive episodes, and manic or hypomanic episodes [8]? We start from an observation made with a patient whom we followed on an outpatient basis, an observation facilitated by the patient's spouse who, during an interview, let us know that she noticed that a few days before the start of the crisis , her husband has attacks of insomnia. In this study, we set out to describe and understand the specificity of the relationship between insomnia and bipolar disorder (BD), hypothesizing that this link is non-nuclear.

## Methodology

The study is quasi-experimental, due to the fact that the situations of the subjects are invoked, because it was carried out on bipolar subjects followed on an outpatient basis. -the anamnesis,

focused on the study of each patient's file, made it possible to select patients diagnosed with bipolar disorder (DSM-V criterion), and to construct the sample; -semi-directive interviews with each of the patients and their caregivers, and the regular administration of the insomnia severity index (ISI) during follow-up and psychotherapy appointments, made it possible to collect data in relationship with the intensity of insomnia and its latency duration, before the onset of manic or hypomanic phases in patients.

The various patients retained and their relatives were contacted. Those willing are passed for informed consent. The study concerns a sample of 45 subjects, therefore 25 women and 20 men, diagnosed as bipolar, and followed for at least a year, at the psychology and psychiatry department of the Henri Pieron Integrative Medical-Psychological Center in Yaounde. With a general average starting age of 35, i.e. 35 for women and 34.5 for men.

Each patient was received in person at least once a month, and a telephone call every week when the patient was not seen physically, allowing continuous information to be collected on the patient's sleep during the last seven days, and this , for a period of twelve months. Those being in the same city were favored in the construction of the sample.

The data collected is of five types: gender, age, type of bipolar disorder, average insomnia intensity (ISI), average duration or latency of insomnia, which is the duration of insomnia before the onset of manic symptoms.

**Results and analysis**

Data table

| Subjects | | sex | Age | Bipolar disorder type (BD) I (M/Md/MD) II(Dm) autres | | | Int. Avrag. Ins. **(ISI)** x/28 (x) | latence moy. Ins. (y) |
|---|---|---|---|---|---|---|---|---|
| 1. | T Elise | F | 71 | | **x** | | 17 | 18 |
| 2. | B Elisabeth | F | 34 | x | | | 22 | 11 |
| 3. | T junior | M | 27 | x | | | 24 | 7 |
| 4. | N argentine | F | 40 | | | x | 16 | 15 |
| 5. | G Samira | F | 18 | | x | | 15 | 17 |
| 6. | N Ulrich | M | 21 | | | x | 16 | 18 |
| 7. | N merlin | M | 44 | x | | | 20 | 10 |
| 8. | T Suzanne | F | 25 | | x | | 19 | 14 |
| 9. | A Natacha | F | 40 | x | | | 25 | 7 |
| 10. | M divine | F | 18 | x | | | 23 | 8 |
| 11. | B Allan | M | 18 | | x | | 22 | 10 |
| 12. | O Maeva | F | 25 | x | | | 22 | 4 |
| 13. | F Miguelle | F | 29 | | | x | 17 | 22 |
| 14. | N Murielle | F | 32 | x | | | 24 | 4 |
| 15. | M Yvan | M | 29 | | | x | 21 | 7 |
| 16. | M Yves | M | 30 | | x | | 24 | 3 |
| 17. | N Jennifer | F | 19 | x | | | 19 | 10 |
| 18. | N Stéphan | M | 40 | | | x | 21 | 9 |
| 19. | G Bernadette | F | 67 | x | | | 24 | 4 |
| 20. | Mohamadou | M | 41 | x | | | 25 | 12 |
| 21. | C Florence | F | 52 | | x | | 19 | 8 |
| 22. | C Diane | F | 37 | x | | | 18 | 11 |
| 23. | B Carlène | F | 30 | | | x | 16 | 15 |
| 24. | B Rebecca | F | 13 | x | | | 20 | 13 |
| 25. | A Olivier | M | 47 | x | | | 17 | 15 |
| 26. | A Sylvie | F | 52 | | x | | 18 | 10 |
| 27. | M junior | M | 26 | | x | | 24 | |
| 28. | J Clarisse | F | 50 | x | | | 25 | 4 |
| 29. | K Emanuel | M | 48 | x | | | 26 | 3 |
| 30. | K Maurice | M | 56 | | x | | 15 | 16 |
| 31. | K Pierre | M | 50 | | | x | 17 | 16 |
| 32. | M Jacquinot | M | 33 | x | | | 23 | 3 |
| 33. | M Marthe | F | 51 | x | | | 25 | 5 |
| 34. | M Vanessa | F | 32 | x | | | 25 | 6 |
| 35. | N André | M | 26 | x | | | 23 | 10 |
| 36. | N Agnès | F | 40 | | x | | 16 | 18 |
| 37. | M Cyrille | M | 37 | | x | | 13 | 18 |
| 38. | S Vanessa | F | 34 | x | | | 18 | 13 |
| 39. | O Ingrid | F | 30 | x | | | 14 | 19 |
| 40. | T Nathan | M | 28 | | | x | 13 | 19 |
| 41. | T Freddy | M | 38 | x | | | 18 | 16 |
| 42. | T Nischa | F | 29 | | | x | 14 | 19 |
| 43. | U Patrick | M | 21 | x | | | 19 | 12 |
| 44. | W Yoela | F | 18 | | x | | 15 | 19 |
| 45. | D Leonel | M | 30 | x | | | 12 | 19 |
| Total each type BD | | | | 24 | 12 | 09 | $\bar{x}$=19,36 ; | $\bar{Y}$=11,5 |
| Average intensities by BD type | | | | $\bar{x}_i$=21, 29 | $\bar{x}_{ii}$=18,08 | $\bar{x}_a$=16,78 | | |

➢ Average insomnia intensity: average of the insomnia intensity of the different periods of insomnia per subject;

➢ Average latency: average duration of insomnia before the start of the manic phase per subject.

Figure 1: Scatter plot (x, intensity; y, latency)

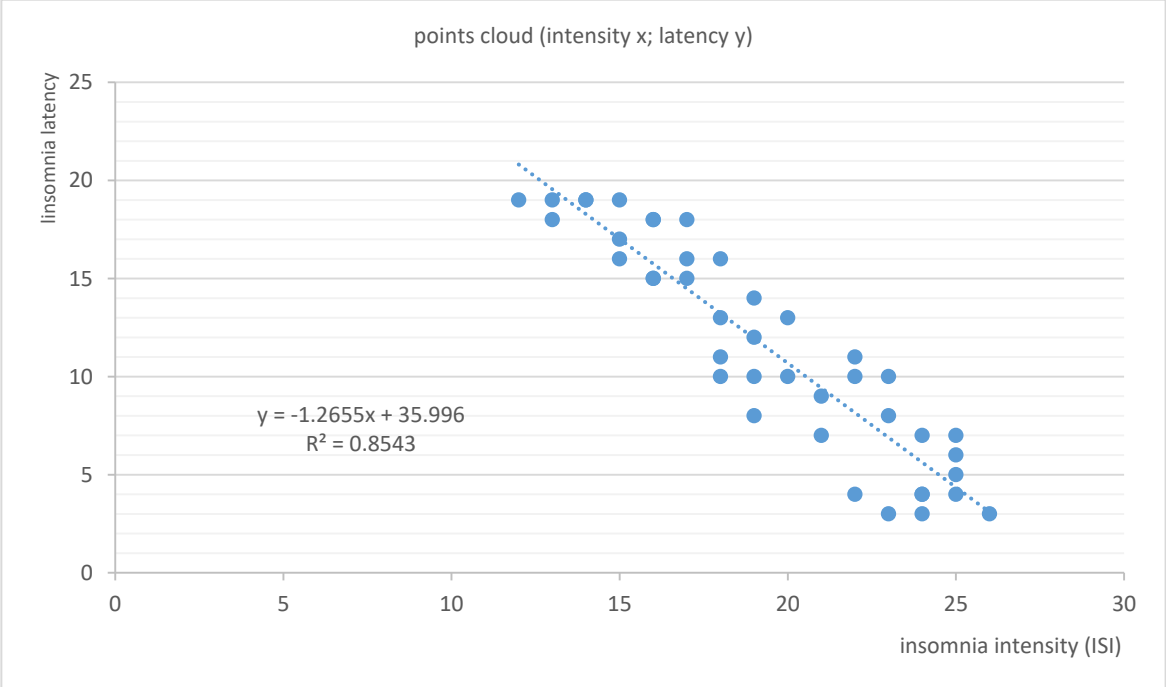


Table I: correlation data (intensity x; latency y)

| r | $r^2$ | Standard deviation | Bidirectional hypothesis | N | α/2 | dl | $r_{lu}$ | $r_{lu}$ |
|---|---|---|---|---|---|---|---|---|
| -0,924 | 0,854 | 6,12039081 | H0: ρ = 0 ; Ha: ρ ≠ 0 | 45 | 0.025 | 43 | 0,2875 | 0,2875 |
| $r_{lu\ 0,2875} < r_{cal\ 0,924,}$ H0 rejeted ; average latency 11.5 days; average difference latency 4.7 | | | | | | | | |
| Latency confidence interval = 11,5 +/- 4,7 ≈ 11,5 +/- 4,7≈ **[6 ; 16]** | | | | | | | | |
| $Y = -1{,}27x + 36$ | | | | | | | | |

Discussion

The correlation coefficient between the intensity (x) and latency (y) of insomnia is r = - 0.924. This shows that there is an apparent link, of very strong intensity (0.924), between these two variables.

The form of the relationship is linear, which means that indeed, there is a relationship of type Y = aX + b between these two variables. In other words, we can predict the latency of a patient's insomnia, if we know the intensity of the insomnia they present.

The negative r (r = - 0.924) shows that these two variables grow in opposite directions. In other words, the higher the intensity of insomnia, the shorter the latency duration 0.924.

For the significance and inference of this sample information to the population, we have:

r read (0.2875) < r cal (0.924), H0 rejected. Which means that indeed, there is a relationship, of a linear nature, between the intensity of insomnia and their latency or duration, before the triggering of the manic phase, in BD.

Therefore, we can conclude with 95% certainty that there is a linear relationship between the intensity of insomnia presented by the patient and the duration of it before the onset of the active phase in the patient suffering from bipolar disorder. Insomnia acts here as a trigger, or as an amplifier of the manic or hypomanic crisis. This relationship makes it possible, from the following regression equation: Y = -1.27x+36, to predict the approximate date of the onset of manic or hypomanic phases in bipolar patients.

An apparent relationship also seems to exist between the intensity of insomnia and the type of bipolar disorder, because patients with TBI seem to have a higher average intensity of insomnia ($\bar{X}$I=21.29), those with TBII have this average intensity ($\bar{x}$II=18.08), and others, having cyclothymia, have this lower intensity ($\bar{x}$a=16.78). However, the sample size

does not allow this link to be tested effectively. A future study could focus on this relationship, with work on larger samples.

These results add to the available knowledge on the sleep of bipolar patients in the remission phase, sleep interspersed by a longer sleep onset latency and sleep duration[7; 9]. These results are also in the same direction as the work of Donde Coquelet[1] which index TS as important elements in the early diagnosis of BD, as the one of Brown[10] about insomnia as a predictor of subsequent depression.

Conclusion

This study offers clinicians both a position and a scientific tool that allows them to improve their knowledge and performance in the care of bipolar disorders in particular, and mood disorders in general. Knowing that the occurrence of insomnia in a bipolar patient, whatever its origin, is a sign of an imminent manic phase allows us to anticipate both the medical and psychological protocols to be put in place. The regression equation helps predict when manic symptoms may occur.

Conflicts of Interest

None

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