Evaluation of the effectiveness of dark therapy on severe sleeping instabilities

The Evaluation of the effectiveness of Dark Therapy on severe sleeping instabilities in Bipolar Disorder Patients

The World Health Organization (WHO, 2018) state that 60 million worldwide suffer from Bipolar Disorder, including over 720, 000 patients in the UK. Bipolar disorder is characterized by manic and depressive episodes segregated by periods of stable mood. Till-date, the major symptom of bipolar, found difficult to diminish, is severe sleeping disturbance whereby lack of sleep exacerbates episodes of manic and irritability. Harvey, Talbot and Gershon (2009) found 100% of bipolar patients they studied undergo insomnia, documenting the importance of sleep for risk of relapse, cognitive and affective functioning. Thus, it is important to attempt to reduce sleep difficulty in order to weaken other symptoms of bipolar which will improve the psychiatric disorder as a whole.

Commonly prescribed as a medication for bipolar, Lithium is thought to act on a person’s central nervous system, and although doctors are unsure, it allegedly strengthens nerve cell connections in the brain which regulate mood and behaviour (Young & Hammond, 2007). However, psychologists found results questioning its effectiveness, the acute discontinuation of lithium treatment highly elevates an immediate relapse rate suggesting that patients who forget taking this medicine at fixed intervals will reap dramatic consequences (Cavanaugh, Smyth & Goodwin, 2004). Therefore, it is necessary to search for other easier methods of treatments such as Dark Therapy (DT), this is used as a mood stabilizer in bipolar in which complete virtual darkness is implemented. Phelps (2008) administered amber tinted glasses to bipolar patients to wear for certain hours suggesting it will

improve the patterns. They claimed that by blocking 90% of blue wavelengths and preserving the natural melatonin levels in the environment, virtual darkness, virtual darkness will be achieved helping patients sleep. Consequently, the tinted glasses resulted in better sleep supporting the claim for the importance of stabilizing the circadian effect. However, Phelp's study, follow up was not addressed and they did not employ a control condition hence making difficult to determine a cause and effect relationship. Despite this, other psychologists have found DT to reduce core symptoms of ADHD and insomnia, where they found that patients' sleep was advanced by 2 hours in just one week (Rybak et al, 2006).

There is still limited evidence to propagate the use of DT, therefore replicating Phelps's study will be valuable as methodological flaws with their study will be corrected which will help determine the reliability of their finding.

Aims and hypothesis

The aim of this experiment is to describe and evaluate the effectiveness of DT as a treatment for bipolar disorder and to demonstrate how the use amber tinted glass impact has an effect on sleep. It is predicted that the implementation of amber tinted safety glasses instructed to be worn 6pm to 8am for 15 weeks, will improve sleeping patterns in both bipolar patients as well as the control condition. Seeking to enable services like NHS and other mental health services to take into account of DT and administer the cost-effective amber tinted glasses to those suffering psychiatric disorders as well as those individuals suffering from sleeping difficulties.

Methodology

Participants

Aiming to recruit 50 male and female participants aged between 18-45 years, from Queen Elizabeth Psychiatric Hospital (QE) who suffer from bipolar disorder and the same number of control participants, recruited through volunteer sampling. Volunteer sampling will enable us to recruit a mixture of participants irrespective of individua; differences. The inclusion criteria require bipolar patients to have a DSM-IV diagnosis of Bipolar hence they'll be administered The Bipolar Affective Disorder Dimension Scale (BADDS) (Craddock, Jones, Kirov & Jones, 2004), also to be hospitalized within the QE Hospital, and to be fluent in English.

Design

A 2×3 mixed MANOVA will be utilized for analysis. The between participants factor will be group: bipolar patients and control and the within participants factor will be time during which measures will be taken; prior to treatment, on completion and 6 months follow up. The dependant variable will be 3 scores indicating severity of sleep disturbances before and after treatment.

Ethics

The study will be granted ethical approval by the psychology department in accordance to British Society- code of ethics and conduct (BPS, 2019). Participants will be asked to give informed consent to participate, will have the right to withdraw at any time, and will be informed of their data

protection rights. For data confidentiality, participants will be given an identity code instead of using their name.

Materials and procedure

Bipolar patients will be administered the BADDS, a numerical rating system assessing specific symptoms relevant to Bipolar from 1-100, to clarify illness severity. Psychologists have found excellent inter-rater reliability of BADDS especially for bipolar at 0. 96, concluding that it retains key information necessary to make DSM V diagnoses (Craddock, Jones, Kirov & Jones, 2004). Afterwards, both groups will be administered the General Sleep Disturbance Scale (GSDS), a 21-item scale designed to evaluate sleeping patterns (Shahid, Wilkison, Marcu & Shapiro, 2011). On completion of the treatment, bipolar patients will complete the Bipolar Recovery Questionnaire, a 45-item psychometric evaluation to asses recovery of bipolar symptoms, which has been found to be reliable and valid over a month-long test-retest period (Jones et al, 2013). The second measure will be the GSDS at 6 months follow up to reflect on differences in sleep after treatment.

After the intake measure is completed, they will be instructed of the DT procedure, to wear the amber tinted glasses given to them, from 6pm-8am every day until the 15-week period. However, the predicted effect of the glasses will not be told. Patients who are hospitalized will be supervised to guarantee they complete the treatment accurately. The control will keep a log of times they wear the glasses. Essentially, both groups will be instructed not to nap during daytime as the treatment will be hindered. On completion

they will complete all outcome measures and a follow up 6 months later at a selected laboratory.

Data analysis strategy

The independent variable (IV) group has two levels; patients and control whether other IV's time of testing contain 3 levels; the 3 separate times at which the patients will be measured hence as appropriate, we will conduct 2×3 mixed MANOVA. If the results are significant between DT and severity of sleeping disturbances as hypothesized, we will then individually examine the measure used a Bonferroni adjusted significance level of . 025. This will exemplify if the treatment and time of testing has any significant effect on the severity of sleeping difficulties. If the Bonferroni is significant, it may indicate that DT improves sleeping behaviour and bipolar symptoms on completion and if the result is continued at follow up. Similar result is also expected in the control group as DT is assumed to regulate sleeping behaviour in everyone.

References

- Cavangh, J. Symth, R. & Goodwin, G. M. (2004). Relapse into mania or depression following lithium discontinuation: a 7 year follow up. Acta Psychiatrica Scandinavica, 109 (2), 91-5.
- Craddock, N. Jones, I. Kirov & Jones, L. (2004). The Bipolar Affective Disorder Dimension Scale (BADDS) – a dimensional scale for rating lifetime psychopathology in Bipolar spectrum disorders. BMC Psychiatry, 4, 19.

- Harvey, A. G. Talbot, L. S & Gershon, A. (2009). Sleep disturbance in Bipolar Disorder Across the Lifespan. Clinical psychology, 16(2), 256. 277.
- Jones, S. Mulligan, L. D. Higginson, S. Dunn, G & Morrsion, A. P. (2013). The bipolar recovery questionnaire: psychometric properties of a quantitative measure of recovery experiences in bipolar disorder. Journal of affective disorders, 147 (1-3), 34-43.
- Phelps, J. (2008). Dark Therapy for bipolar disorder using amber lenses for blue light blockade. Medical hypotheses, 70, 224-229.
- Rybak, Y. E, Mcneeley, H. E. Mackenzie, B. E. Jain, U. R. Levitan, R. D. (2006). An open trial of light therapy in adult attention- deficit/ Hyperactivity disorder. Journal of clinical psychiatry, 67, 1527-35.
- Shahid, A. Wilkinson, K. Marcu, S & Shapiro, C. M. (2011). General Sleep Disturbance Scale. STOP, THAT and one hundred other sleep scales, pp181-183.
- World Health Organization (October, 2015). Retrieved from: http://www. who. int/mediacentre/factsheets/fs396/en/
- Young, A. H & Hammond, J. M. (2007). Lithium in mood disorders: increasing evidence base, declining use? British Journal of Psychiatry, 191, 474-6.