



ELSEVIER

Contents lists available at ScienceDirect

Journal of Affective Disorders

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

Review

Bright white light therapy in depression: A critical review of the evidence

Björn Mårtensson^{a,*}, Agneta Pettersson^b, Lars Berglund^c, Lisa Ekselius^d^a Department of Clinical Neuroscience, Psychiatry, Karolinska Institutet, Stockholm, Sweden^b Swedish Council on Technology Assessment in Health Care, Stockholm, Sweden^c Uppsala Clinical Research Center, Uppsala University, Uppsala, Sweden^d Department of Neuroscience, Psychiatry, Uppsala University, Uppsala, Sweden

ARTICLE INFO

Article history:

Received 15 December 2014

Received in revised form

3 April 2015

Accepted 3 April 2015

Available online 11 April 2015

Keywords:

Light therapy

Depression

Meta-analysis

Review

ABSTRACT

Background: Light therapy is an accepted treatment option, at least for seasonal affective disorder (SAD). Our aim was to critically evaluate treatment effects of bright white light (BWL) on the depressive symptoms in both SAD and non-seasonal depression.

Methods: The systematic review was performed according to the PRISMA guidelines. PubMed, Embase, and PsycINFO were searched (December 1974 through June 2014) for randomized controlled trials published in peer-reviewed journals. Study quality was assessed with a checklist developed by the Swedish Council on Technology Assessment in Health Care. Only studies with high or medium quality were used in the meta-analyses.

Results: Eight studies of SAD and two studies of non-seasonal depression met inclusion and quality criteria. Effects on SAD were estimated in two meta-analyses. In the first, week by week, BWL reached statistical significance only at two and three weeks of treatment (Standardized Mean Difference, SMD: -0.50 ($-0.94, -0.05$); -0.31 ($-0.59, -0.03$) respectively). The second meta-analysis, of endpoint data only, showed a SMD of -0.54 (CI: $-0.95, -0.13$), which indicates an advantage for BWL. No meta-analysis was performed for non-seasonal depression due to heterogeneity between studies.

Limitations: This analysis is restricted to short-term effects of BWL measured as mean changes in scores derived from SIGH-SAD, SIGH-SAD self-report, or HDRS rating scales.

Conclusions: Most studies of BWL have considerable methodological problems, and the results of published meta-analyses are highly dependent on the study selection. Even though quality criteria are introduced in the selection procedures of studies, when the results are carefully scrutinized, the evidence is not unequivocal.

© 2015 Elsevier B.V. All rights reserved.

Contents

1. Introduction	2
2. Methods	2
2.1. Literature search	2
2.2. Study selection	2
2.3. Procedures	2
2.4. Outcome measures	3
2.5. Data analysis	3
3. Results	3
3.1. Literature search	3
3.2. Seasonal affective disorder	3
3.3. Non-seasonal depression	3
4. Discussion	4

* Corresponding author at: Psychiatry (R5), Karolinska University Hospital Solna, S-171 76 Stockholm, Sweden. Tel.: +46 73 9661815.

E-mail address: bjorn.martensson@ki.se (B. Mårtensson).

4.1. Seasonal affective disorder	4
4.2. Non-seasonal depression	6
4.3. Limitations	6
5. Conclusion	6
Role of funding source	6
Conflict of interest	6
Acknowledgements	6
References	6

1. Introduction

Light therapy has become a standard treatment for seasonal affective disorder (SAD) and may also be considered as an option for treating non-seasonal depression (Kuiper et al., 2013; Wirz-Justice, 1998). Light therapy is of great interest as an alternative to pharmacological treatment, and has as a research field been claimed to be active (Terman, 2007).

Several international recommendations and guidelines for treatment of depression (American Psychiatric Association, 2010; Anderson et al., 2008; Bauer et al., 2013; National Collaborating Centre for Mental Health, 2009; NIMH—National Institute for Mental Health, 2011; Ravindran et al., 2009) advocate light therapy as a treatment option. The Canadian CANMAT guidelines summarize that there is level 1 evidence for the efficacy of light therapy in seasonal major depressive disorder and as such it is recommended as a first-line treatment (Ravindran et al., 2009). The British NICE recommendations seem to be more uncertain about the evidence base (National Collaborating Centre for Mental Health, 2009). The World Federation of Societies of Biological Psychiatry (WFSBP) in their recent guidelines (Bauer et al., 2013) agrees with the uncertainty expressed in the NICE guidelines.

A systematic review of treatment of depression by the Swedish Council on Technology Assessment in Health Care (SBU) concluded that light therapy does not seem to be more effective than placebo (SBU—Statens beredning för medicinsk utvärdering (The Swedish Council on Technology Assessment in Health Care), 2004). Following that review, two meta-analyses that attracted attention were published (Golden et al., 2005; Tuunainen et al., 2004). This prompted SBU, in 2007, to update their evaluation of the evidence concerning the efficacy of light therapy in SAD and non-seasonal major depression (SBU—Statens beredning för medicinsk utvärdering/The Swedish Council on Technology Assessment in Health Care, 2007). The main conclusion from this update was that treatment with bright light showed effects on depression scores in SAD, however, followed over time they seemed to be of a transient nature. As new studies have been published since 2007 we decided to conduct an updated critical review and meta-analysis in order to summarize the field. Our aim was to estimate treatment effects of bright white light administered in the morning on the depressive symptoms in both SAD and non-seasonal depression.

2. Methods

2.1. Literature search

We searched the medical databases PubMed, PsycINFO, and EMBASE for randomized clinical trials published between December 1974 and June 2014. The terms used for searching in PubMed included “depression”, and “light therapy”, and “randomized trial”. The terms used in the search strategy in PsycINFO were “depression”, and “phototherapy”, and “randomized controlled trial”, and in EMBASE they were “depression”, and “phototherapy”, and

“randomized controlled trial”. Languages accepted were English, German, and French.

2.2. Study selection

The studies had to fulfill the following inclusion criteria:

- published as an original article in a peer-reviewed journal
- designed as a randomized controlled trial
- use of morning bright white light (BWL) as one of the treatment alternatives
- use of a credible placebo condition (in case of dim red light 500 lx was required as a maximum)
- administering of BWL by light room or by some kind of light box
- subjects should be adults (subjects of at least 18 years of age) with a diagnosis of SAD or major depression
- use of either DSM-III, DSM-III-R, DSM-IV, or RDC (Spitzer et al., 1978) for diagnostic classification
- rating of symptoms with either SIGH-SAD (Williams et al., 2002; Williams et al., 1992), SIGH-SAD-SR (Williams et al., 1998), or HDRS (Hamilton, 1960)
- use of ten or more evaluable subjects in each treatment arm

2.3. Procedures

Two reviewers (BM, LE) independently considered all study citations to assess their relevance for the analysis. All studies judged on the basis of titles and abstracts to be of potential interest by at least one of the reviewers were read in full. The external and internal validity of each study was assessed independently by the reviewers using a check-list developed by SBU (Berglund et al., 2003). The following measures were considered: randomization procedure, blinding, recruitment and selection of participants, diagnostic procedure, control treatment, attrition analysis, outcome measures, detailed information related to treatment procedures (e.g. adherence, participants' expectation ratings, concurrent use of sedatives or hypnotics), registration of adverse events, statistical methods, and center effects in the case of multi-center studies. Each of the measures was graded as either “acceptable”, “with some flaws” or “unacceptable”. Studies were rated as having high, medium, or low quality. Studies with very few methodological flaws were graded as high quality and studies with severe deficits as low quality. The checklist was used in a semi-quantitative way, and as some studies have found larger effects when randomization was unreliable, blinding was accomplished, or non-completers were unaccounted for (Berglund et al., 2003), we paid more attention to these measures. In case of disagreement the two reviewers discussed the article in order to reach consensus. Only studies of high and medium quality were included in the analyses.

Download English Version:

<https://daneshyari.com/en/article/6231513>

Download Persian Version:

<https://daneshyari.com/article/6231513>

[Daneshyari.com](https://daneshyari.com)