Use of Bright Light Therapy Among Psychiatrists in Massachusetts: An E-Mail Survey

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ABSTRACT

Background: Evidence on the use of bright light therapy for conditions beyond seasonal affective disorder continues to accrue; however, data on the prevalent use of bright light therapy in the community or in hospitals remain limited, particularly in the United States.

Method: We conducted a 5-minute e-mail survey of practicing psychiatrists in Massachusetts using the membership roster through the Massachusetts Psychiatric Society to evaluate prevalent use of bright light therapy as well as to solicit attitudes toward the treatment. Three e-mails were sent out over a 2-week period, and responses were obtained from March 2–24, 2013. An iPad raffle was used to incentivize survey completion.

Results: Of the 1,366 delivered e-mails, 197 responses were obtained. Of respondents, 72% indicated that they used bright light therapy in their practice, and, among these, all but 1 used bright light therapy for seasonal affective disorder. Only 55% of responding psychiatrists who use bright light therapy consider it to treat nonseasonal depression, and 11% of respondents who recommend bright light therapy would consider its use in inpatient settings. Lack of insurance coverage for light-delivery devices was identified as the largest barrier to using bright light therapy, being cited by 55% of respondents. Survey results suggest that limitations in practitioner knowledge of bright light therapy and the absence of bright light therapy in treatment algorithms are the 2 leading modifiable factors to encourage broader implementation.

Limitations: The principal limitation of our survey was the low response rate. As such, we consider these data preliminary.

Conclusions: Response bias very likely led to an overestimation in prevalent use of bright light therapy; however, this bias notwithstanding, it appears that bright light therapy is used significantly less often for nonseasonal depression than for seasonal affective disorder. Further, its use in inpatient settings is significantly less than in outpatient settings. We expect that efforts to educate practitioners on the use and efficacy of bright light therapy for various psychiatric disorders combined with its inclusion on treatment algorithms may foster greater prevalent use.

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Bright light therapy is among the first-line interventions for seasonal affective disorder (SAD), a practice buttressed by over 70 clinical trials.[1] Bright light therapy is also efficacious for nonseasonal major depression[2,3] and various sleep disorders, particularly those with circadian rhythm disturbances.[4] Since the American Psychiatric Association–sponsored publication in 2005 by Golden and colleagues,[2] data continue to expand on the efficacy of bright light therapy in nonseasonal depression among the chronically depressed,[5] elderly,[6] pregnant,[7] and nonperimenopausal women.[8] Studies investigating bright light therapy as an adjunct to serotonergic antidepressants have also revealed that the treatment hastens antidepressant response and remission when administered as a solo adjunct[9,10] or in conjunction with other chronotherapeutic interventions including wake therapy.[11]

Beyond its efficacy for select psychiatric illness, bright light therapy is eminently safe and more rapidly efficacious than medications or psychotherapy for seasonal and nonseasonal depression.[2,12] Furthermore, bright light therapy is one of a small handful of treatments—including intravenous ketamine, electroconvulsive therapy, and other chronotherapies—that treats depression in days.[13] Despite the myriad potential benefits for incorporating bright light therapy in the management of several psychiatric and circadian rhythm disorders, data remain limited as to its use, particularly in the United States. We conducted an e-mail survey of members of the Massachusetts Psychiatric Society regarding attitudes on the use of bright light therapy among psychiatrists, with an emphasis on its use in seasonal and nonseasonal depression.

A recent survey of psychiatrists in German-speaking countries revealed that bright light therapy is widely used in parts of Europe[14]; however, to our knowledge, no comparable study has been conducted in the United States. Personal experience, correspondence with peers, and other anecdotal data suggest that bright light therapy is significantly less utilized in the United States than in Europe, as was found in a previous survey.[14] Our current survey investigated attitudes on bright light therapy among practicing psychiatrists in the United States.

Quantitative data on the use of bright light therapy are complicated by regulatory, logistical, proprietary, and financial factors. First, light-delivery devices do not qualify as durable medical equipment by US regulatory agencies (42 US Code § 1395x, subsection n), and they are not approved by the US Food and Drug Administration (FDA) for any medical conditions, including mood or circadian rhythm disorders. As a result, a very limited number of insurance companies reimburse patients for the cost of these devices. Logistically, although physicians may recommend or be said to "use" bright light therapy, they do not prescribe it in a strict sense. Accurate prescribing patterns of physicians may be obtained in several ways (eg, European countries with population-wide registries or among subsets of the US population such as the Veterans Administration or

Clinical Points

- Virtually all respondents who recommend the use of bright light therapy recommend its use in seasonal depression, whereas only half of those who recommend bright light therapy do so for nonseasonal depression.
- Cost was identified as the leading barrier to recommending the use of bright light therapy—a factor that was cited by over half of the respondents.
- The leading modifiable barrier to recommending bright light therapy use is lack of knowledge regarding this treatment modality.

Medicare); however, the same cannot be achieved in relation to light-delivery devices. This lack of prescribing patterns prevents population or nationwide surveys of bright light therapy use parallel to the methodologies implemented for medication prescriptions.

Next, proprietary light-delivery devices are produced by private companies, and their manufacture is not overseen federally. Patients may also purchase light-delivery devices either directly from manufacturers or through secondary online or brick-and-mortar vendors, further confounding accurate assessments of prevalent use. On a practical and more fundamental level, one cannot patent light, which doubtless hinders industry-sponsored research in this arena. Manufacturers continue to evaluate novel light-delivery devices such as light visors, light books, or other hand-held devices resembling e-readers or light-diffusing devices that emit biologically informed light spectra. It remains conceivable that a company may yet obtain patent protection for such a light-delivery device.

We expected that a lower proportion of psychiatrists in Massachusetts would recommend the use of bright light therapy compared to those reported in Europe. Secondary analyses compared the proportion of respondents who consider bright light therapy efficacious either as monotherapy or as adjunctive therapy for the conditions defined by Fischer and colleagues.[14]

METHOD

The Massachusetts Psychiatric Society provided a list of member e-mails for this research project, and we employed an English version of a previous survey used by Fischer and colleagues (Appendix 1).[14]

The majority of the original questionnaire was kept intact in order to allow for direct comparisons between the data reported previously and current findings. Demographic information including level of training, practice type and setting, duration of medical practice, and gender were also requested on a voluntary basis. A Web domain (http://www.bmcchronotherapeutics.com) was created to host this survey, and the questionnaire was managed via a secure account through Adobe FormsCentral (https://new.acrobat.com/en_us/products/formscentral.html?s_tnt=66820:1:0). A request to complete the survey was sent out via the primary author's personal institutional e-mail account to limit the chances that the e-mail would be filtered out by recipients' accounts. Two follow-up e-mails were sent at roughly 1-week intervals to solicit additional respondents—one by the primary author and another by the executive director of the Massachusetts Psychiatric Society. Responses were obtained from March 2–24, 2013.

To incentivize completion, we indicated that a 32 GB iPad would be raffled off to a respondent at the conclusion of the online survey, and this information was also included in the title of the third e-mail invitation. The survey allowed respondents to indicate an e-mail address and name to be entered for the iPad raffle. It was explained that all response information would be anonymized, and names and e-mail addresses would be destroyed following identification of an iPad recipient. We anticipated a response rate greater than 30%. All data were analyzed using R, a free software environment for statistical computing (www.r-project.org/). This study was found exempt by the Boston University Medical Campus Institutional Review Board, Boston, Massachusetts.

RESULTS

Of the 1,401 e-mail recipients, 35 were undeliverable. Of the 1,366 delivered e-mails, 197 responses were obtained, yielding a response rate of 14.4%. Table 1 illustrates the data obtained from questions related to use in clinical settings. Of respondents, 142 (72%) recommend the use of bright light therapy. Among these, all but 1 (99%) recommend the use of bright light therapy for SAD, and 78 (55%) recommend its use for nonseasonal major depression. All but one of those who recommend bright light therapy do so in outpatient settings, and only 11% of those who recommend its use would do so among inpatients.

Table 2 elaborates on various factors that limit the use of bright light therapy. Lack of insurance coverage was the most commonly selected limitation (100 respondents, 55%), followed by limited knowledge (65 respondents, 36%), and patient preference (64 respondents, 35%). Table 3 catalogs provider perception of bright light therapy efficacy for specific disorders and parallels the data presented by Fischer and colleagues.[14] Bright light therapy was consistently thought to be efficacious as an adjunctive treatment more often than as monotherapy. Adjunctive bright light therapy was considered efficacious for SAD by 181 respondents (95% of those who responded to any adjunctive category), for subsyndromal SAD by 175 (92%), and recurrent nonseasonal major depression by 101 (53%), whereas monotherapy bright light therapy was considered efficacious for SAD by 140 (73% who responded to any monotherapy category) and for recurrent nonseasonal major depression by 21 (11%). We report the cumulative demographics of those who completed our survey in Table 4. Over 90% of respondents answered each of the voluntary demographic questions.

Independent χ^2 tests were performed to compare responses to the index question (Do you recommend bright light therapy?) and responses to each of the potential

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Table 1. Data Obtained From the Survey of Use of Bright Light Therapy in Clinical Settings (N = 197)

Question	Respondents, n (%)[a]	Results[b]
1. Do you recommend bright light therapy to your patients?	197 (100)	Yes: 142 (72)[c]
a. For how long have you been recommending bright light therapy?	124 (63)	10.8 ± 8.3, 0.2–50, y
b. Do you recommend the use of bright light therapy to patients with SAD?	142 (72)	Yes: 141 (99)[c]
To what portion of your patients with SAD do you recommend bright light therapy?	134 (68)	83 ± 29, 5–100, %
How long does it usually take for clinical response to bright light therapy in SAD?	91 (46)	2.4 ± 2 wk, 0.5 wk–3 mo
c. Do you recommend the use of bright light therapy to patients with nonseasonal major depression?	142 (72)	Yes: 78 (55)[c]
To what portion of your patients with nonseasonal major depression do you recommend bright light therapy?	86 (44)	24 ± 26, 0–100, %
How long does it usually take for clinical response to bright light therapy in nonseasonal major depression?	31 (16)	2.9 ± 1.9 wk, 0.5 wk–2 mo
d. How long do you recommend a patient use bright light therapy in a single treatment period?	135 (69)	≥ 1 mo: 100 (74)[c,d]
e. Do you recommend bright light therapy for inpatients, outpatients, or both?	142 (72)	Outpatients: 141 (99)[c] Inpatients: 16 (11)[c]
2. What light-delivery device do you recommend (eg, box, lamp, visor, pad)?	123 (62)	Box or lamp: 101 (71)[c,d]
a. What light intensity do you recommend?	118 (60)	10,000 lux: 85 (72)[c] 2,500 lux: 12 (10)[c] Other/nonresponse: 21 (18)[c]
b. What session duration do you recommend?	139 (71)	< 30 min: 13 (9)[c,d] 30 min: 104 (75)[c,d] ≥ 1 h: 10 (7)[c,d] Other: 12 (9)[c,d]

[a]Number who responded to this question (percent of total respondents who responded to this question). If respondents answered yes to the first question, they were shown the remainder of questions found in Table 1; however, if respondents answered no to that question, they were not shown the remaining questions in Table 1. All of those who answered yes to the index question (72% of respondents) also responded to questions 1b, 1c, and 1e.
[b]Values presented as n (%) and mean ± SD, range.
[c]Percent yes calculated as (number yes) ÷ (number responses to this question).
[d]Responses to these questions were highly variable, as they were free-text entry. For 1d, common responses were provided in weeks, months, number of seasons, or specific months. Question 2 responses tended to specify type (eg, box, lamp, visor), manufacturer, or model name, although many indicated simply that they deferred to patient preference. Most respondents to 2b selected 1 of the 2 options provided (ie, 30 min or 2 h), whereas others provided specific lengths of time (eg, 1 h) or ranges.
Abbreviation: SAD = seasonal affective disorder.

limitations. The 4 limitations associated with bright light therapy nonuse that met our a priori level of significance of .05 are shown in Table 5; limited knowledge of bright light therapy and its absence in treatment algorithms are the 2 limitations most highly associated with nonuse. We performed similar χ^2 tests related to demographics, and the only demographic feature associated with bright light therapy use with an $\alpha < .05$ was level of training ($\chi^2_1 = 30.6$, $P < 1 \times 10^{-7}$); practicing psychiatrists were more likely to recommend bright light therapy than those respondents in residency (81% versus 35%, respectively).

DISCUSSION

It is surprising that 72% of respondents indicated that they recommend the use of bright light therapy, particularly in view of the limited discussion it receives. We suspect that this finding may be a result of our low response rate despite incentivizing survey completion with a drawing for a free iPad. The minimal estimate of those who recommend bright light therapy is 10% (142 affirmative responses divided by 1,366 delivered e-mails). Bright light therapy is used most commonly for SAD and subsyndromal SAD; however, its use for nonseasonal depression is significantly less. Even among this cohort in whom a significant majority considers the use of bright light therapy for seasonal depression, only 10% consider it as monotherapy for nonseasonal depression, with half of respondents considering the adjunctive use of bright light therapy for nonseasonal depression.

Table 2. Limitations to Use of Bright Light Therapy[a]

Limitation	Respondents, n (%)[b]
Not covered by insurance	100 (55)
Limited knowledge of bright light therapy	65 (36)
Patient preference	64 (35)
Patient compliance concerns	57 (31)
Cumbersome to use	49 (27)
Limited efficacy	36 (20)
Not on treatment algorithms	31 (17)
Not approved by the US Food and Drug Administration	17 (9)
Unclear mechanism of action	17 (9)
Concerns of cost[c]	9 (5)
Side effects[c]	7 (4)

[a]Respondents could select as few or as many of the options above as they wanted. Of the respondents, 181 (92%) selected at least 1 option. The mean number of items selected was 2.4.
[b]Number of respondents who selected this option. Percent of respondents calculated as (number who selected this option) ÷ (number who selected any option = 181).
[c]Cost-related concern was the most common write-in answer, followed by concern of side effects such as risk of manic overshoot, headache, eye strain, or retinal safety.

The use of bright light therapy tends to be considered much more commonly in outpatient settings than in inpatient settings despite the rapidity of efficacy[9–11] and the ability to monitor treatment adherence in a controlled setting. It appears that inpatient use of bright light therapy is largely

Table 3. Use of Bright Light Therapy in Specific Clinical Conditions (N = 197)[a]

Condition	Monotherapy Yes, n (%)	Adjunct Yes, n (%)
Nonseasonal major depressive disorder, single episode	22 (11)	90 (47)
Nonseasonal major depressive disorder, recurrent	21 (11)	101 (53)
Seasonal affective disorder	140 (73)	181 (95)
Subsyndromal seasonal affective disorder ("winter blues")	171 (90)	175 (92)
Negative symptoms in schizophrenia	4 (2)	22 (12)
Neurotic, stress-related, and somatoform disorders (including anxiety, posttraumatic, and acute stress disorders)	8 (4)	28 (15)
Primary (nonorganic) sleep disorders	57 (30)	95 (50)
Jet lag syndrome	108 (56)	121 (64)
Antepartum or postpartum depression[b]	4 (2)	3 (2)
Bipolar depression[b]		6 (3)

[a]All but 5 respondents provided at least 1 response (yes or no) to the use of bright light therapy as monotherapy; therefore, the percent listed in parentheses under monotherapy equals (number yes) ÷ (192). Similarly, 7 respondents provided no responses related to adjunctive use of bright light therapy; percent under adjunct equals (number yes)/(190).
[b]Use of bright light therapy in antepartum or postpartum depression was the most common write-in for monotherapy bright light therapy, whereas bipolar depression was the most common write-in for adjunctive bright light therapy.

Table 4. Demographics of the Respondents to the Survey of Use of Bright Light Therapy (N = 197)

Question	Respondents, n (%)	Responses[a]
Level of training	196 (99)	Postresidency: 159 (81)[b] Resident: 37 (19)[b]
Percent of practice outpatient	188 (95)	80 ± 33, 0–100, %
Percent of practice inpatient[c]	183 (93)	17 ± 32, 0–100, %
Practice setting	192 (97)	Urban: 104 (54)[b] Suburban: 80 (42)[b] Rural: 7 (4)[b]
How long practicing medicine (including residency)	183 (93)	23.3 ± 15.4, 1–57 y
Gender	194 (98)	Male: 108 (56)[b] Female: 85 (44)[b] Other/deferred: 1 (< 1)[b]
Entered contact information to be entered for iPad drawing	166 (84)	NA

[a]Values presented as n (%) and mean ± SD, range.
[b]Percent equals (number with particular response) ÷ (number responding to this question).
[c]Respondents were counted as having responded to inpatient if 100% of their practice was reported to be outpatient, as the response was necessarily 0% inpatient.
Abbreviation: NA = not applicable.

Table 5. χ^2 Tests Accounting for Bright Light Therapy Nonuse

Variable	χ^2_1	% of Those Who Recommend Bright Light Therapy Citing This Limitation	% of Those Who Do Not Recommend Bright Light Therapy Citing This Limitation
Limited knowledge of bright light therapy	59.6 $P < 1 \times 10^{-13}$	17	75
Patient preference	29.0 $P < 1 \times 10^{-7}$	44	4
Not in treatment algorithms	13.2 $P < .001$	10	31
Patient compliance concerns	7.7 $P < .01$	35	15

unexplored in clinical settings. Although this questionnaire did not specify whether "inpatient" referred to medical/surgical or psychiatric hospitals, we suspect that bright light therapy could have applications in both settings.

Insurance coverage and cost stood out as the most salient barriers to clinical use of bright light therapy; however, we understand that many insurance companies will cover the cost of light-delivery devices with a letter from prescribing physicians, particularly for SAD. Beyond this, it may be prudent for psychiatric clinics to provide rental light-delivery devices to patients for a period of time, thus alleviating the upfront cost of the device,[15] and inpatient settings may do well to invest in a small fleet of light-delivery devices given the absence of recurring costs and potential to hasten treatment response and perhaps even shorten length of hospital stay. Were Medicare to approve light-delivery devices as durable medical equipment and the FDA to approve them for the management of depression, insurance companies might be more likely to provide coverage for these devices—particularly given the cost savings in the long run for the insurance company, as they represent a one-time cost rather than recurring monthly or trimonthly costs for medication refills.

Finally, Table 5 illustrates that gaps in knowledge of bright light therapy—in terms of data on efficacy, logistics of use, and potential side effects—is a potentially remediable barrier to broader use of bright light therapy by practicing psychiatrists. Consistent with a recent review of depression clinical practice guidelines that found limited mention of bright light therapy or other chronotherapeutic interventions,[16] our data suggest that its inclusion may contribute to greater prevalent use. Readers are referred to additional online resources from nonprofit organizations regarding bright light therapy and allied chronotherapies such as the Society for Light Treatment and Biological Rhythms (http://www.slbtr.org/) and the Center for Environmental Therapeutics (http://www.cet.org/).

Responding to Bias

The largest limitation of this survey centers on the low response rate. We suspect that those with the strongest feelings regarding bright light therapy would be more likely to complete a survey on the treatment. As such, the proportion of respondents who reported using bright light therapy most likely represents an inflated estimate of the true proportion of the population who use the treatment. It was surprising that 72% of respondents reported bright light therapy use, which is actually higher than the number of hospitals using bright light therapy per the European survey to which we anticipated comparing our results (69.8%).

We considered several possible methods to correct for our low response rate. We were unable to obtain cumulative demographic data regarding Massachusetts Psychiatric Society members in order to compare demographics of respondents to assess generalizability. We elected not to follow

up on a random sampling of nonrespondents to investigate reasons for nonresponse, as Massachusetts Psychiatric Society members had already received 3 unsolicited e-mails. We further suspected that if the potential for an iPad were insufficient incentive for their response to 3 e-mails, then a fourth would almost certainly yield even less. The first half of respondents was slightly more likely to recommend bright light therapy than the second half of respondents (75% versus 68%, respectively), and, more specifically, the 148 who responded prior to the third e-mail that was entitled "Drawing for free iPad in 4 days" were more likely to indicate bright light therapy use than the 50 survey respondents after this e-mail (74% versus 65%, respectively), suggesting that the potential to win an iPad elicited a cohort of respondents that was slightly less favorably disposed to bright light therapy. Finally, response rates from 2 previous, voluntary surveys disseminated among Massachusetts Psychiatric Society members were 11% and 16%, suggesting that the response rate for our survey was roughly equivalent to those of previous surveys.

Because this survey was Web-based, it is possible that younger e-mail recipients were more likely to respond than those with less technological savvy. Several survey recipients responded to the e-mail saying that the hyperlink was inoperable; however, this appeared to be a function of the safety settings of the recipients' e-mail clients, as the site was accessible when the URL was copied and pasted into the Internet browser. Only 35 of the 1,401 e-mails were undelivered; hence, this was unlikely to have biased responses significantly. Finally, we also considered that our Massachusetts sample of those who not only are practicing in a state with a heavy academic influence (ie, the highest academic medical centers per capita in the United States) but also are affiliated with an active psychiatric society could bias toward those with a greater awareness of recent evidence on the use of bright light therapy.

Drug names: ketamine (Ketalar and others).

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Author contributions: Drs Oldham and Ciraulo conceived of this survey jointly, and Dr Oldham wrote the first draft of this manuscript and performed statistical calculations. Dr Ciraulo provided involved textual edits and contributed to data organization and presentation.

Potential conflicts of interest: None reported.

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Supplementary material: See accompanying pages.

REFERENCES

1. Lam RW, Levitt AJ, Levitan RD, et al. The Can-SAD study: a randomized controlled trial of the effectiveness of light therapy and fluoxetine in patients with winter seasonal affective disorder. *Am J Psychiatry*. 2006;163(5):805–812.
2. Golden RN, Gaynes BN, Ekstrom RD, et al. The efficacy of light therapy in the treatment of mood disorders: a review and meta-analysis of the evidence. *Am J Psychiatry*. 2005;162(4):656–662.
3. Even C, Schröder CM, Friedman S, et al. Efficacy of light therapy in nonseasonal depression: a systematic review. *J Affect Disord*. 2008;108(1–2):11–23.
4. Gooley JJ. Treatment of circadian rhythm sleep disorders with light. *Ann Acad Med Singapore*. 2008;37(8):669–676.
5. Goel N, Terman M, Terman JS, et al. Controlled trial of bright light and negative air ions for chronic depression. *Psychol Med*. 2005;35(7):945–955.
6. Lieverse R, Van Someren EJ, Nielen MM, et al. Bright light treatment in elderly patients with nonseasonal major depressive disorder: a randomized placebo-controlled trial. *Arch Gen Psychiatry*. 2011;68(1):61–70.
7. Wirz-Justice A, Bader A, Frisch U, et al. A randomized, double-blind, placebo-controlled study of light therapy for antepartum depression. *J Clin Psychiatry*. 2011;72(7):986–993.
8. McEnany GW, Lee KA. Effects of light therapy on sleep, mood, and temperature in women with nonseasonal major depression. *Issues Ment Health Nurs*. 2005;26(7):781–794.
9. Martiny K. Adjunctive bright light in non-seasonal major depression. *Acta Psychiatr Scand suppl*. 2004;110(s425):7–28.
10. Benedetti F, Colombo C, Pontiggia A, et al. Morning light treatment hastens the antidepressant effect of citalopram: a placebo-controlled trial. *J Clin Psychiatry*. 2003;64(6):648–653.
11. Martiny K, Refsgaard E, Lund V, et al. A 9-week randomized trial comparing a chronotherapeutic intervention (wake and light therapy) to exercise in major depressive disorder patients treated with duloxetine. *J Clin Psychiatry*. 2012;73(9):1234–1242.
12. Oldham MA, Ciraulo DA. Bright light therapy for depression: a review of its effects on chronobiology and the autonomic nervous system. *Chronobiol Int*. 2014;31(3):305–319.
13. Bunney BG, Bunney WE. Rapid-acting antidepressant strategies: mechanisms of action. *Int J Neuropsychopharmacol*. 2012;15(5):695–713.
14. Fischer R, Kasper S, Pjrek E, et al. On the application of light therapy in German-speaking countries. *Eur Arch Psychiatry Clin Neurosci*. 2012;262(6):501–505.
15. Cheung A, Dewa C, Michalak EE, et al. Direct health care costs of treating seasonal affective disorder: a comparison of light therapy and fluoxetine. *Depress Res Treat*. 2012;2012:628434.
16. Kuiper S, McLean L, Fritz K, et al. Getting depression clinical practice guidelines right: time for change? *Acta Psychiatr Scand suppl*. 2013;128(444):24–30.

Supplementary material follows this article.

THE PRIMARY CARE COMPANION FOR CNS DISORDERS

Supplementary Material

Article Title: Use of Bright Light Therapy Among Psychiatrists in Massachusetts: An E-Mail Survey

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List of Supplementary Material for the article

1. Appendix 1
2.
3.
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5.

Disclaimer

This Supplementary Material has been provided by the author(s) as an enhancement to the published article. It has been approved by peer review; however, it has undergone neither editing nor formatting by in-house editorial staff. The material is presented in the manner supplied by the author.

Bright Light Therapy Survey

This survey is hosted by Acrobat FormsCentral, and all data submitted below is sent to a secure account there.

Do you recommend bright light therapy (BLT) to your patients

- ◯ Yes
- ◯ No

For how long have you been recommending BLT?

Do you recommend the use of BLT to patients with seasonal affective disorder (SAD)?

- ◯ Yes
- ◯ No

To what portion of your patients with SAD do you recommend BLT?

How long does it usually take for clinical response to BLT in SAD?

Do you recommend the use of BLT to patients with non-seasonal major depression (NS-MD)?

- ◯ Yes
- ◯ No

To what portion of your patients with NS-MD do you recommend BLT?

How long does it usually take for clinical response to BLT in NS-MD?

How long do you recommend a patient use BLT in a single treatment period?

- ◯ 1 week
- ◯ 2 weeks
- ◯ Longer

Adapted with permission from Fischer R.

Do you recommend BLT for inpatients, outpatients, or both?
If both, check both boxes.

- ☐ Inpatients
- ☐ Outpatients

The following three questions pertain to the type of BLT you recommend.

What light delivery device do you recommend (*e.g.,* box, visor, pad, etc.)?
Specify make and model if known.

What light intensity do you recommend?

- ○ 2,500 lux
- ○ 10,000 lux
- ○ Other

What session duration do you recommend?

- ○ 30 minutes
- ○ 2 hours
- ○ Other

Which of the following limit(s) your use of BLT?

- ☐ Limited efficacy
- ☐ Not approved by the FDA
- ☐ Not on treatment algorithms
- ☐ Unclear mechanism of action
- ☐ Not covered by insurance
- ☐ Limited knowledge of BLT
- ☐ Patient preference
- ☐ Cumbersome to use
- ☐ Patient compliance concerns
- ☐ Other(s)

Adapted with permission from Fischer R.

For each of the following conditions (ICD-9 codes in parentheses), please indicate whether you consider BLT efficacious as **monotherapy**.

	Yes	No
Non-seasonal major depressive disorder, single episode (296.2)	○	○
Non-seasonal major depressive disorder, recurrent (296.3)	○	○
Seasonal affective disorder (296.3) *(Major depressive disorder, recurrent, with seasonal pattern)*	○	○
Sub-syndromal seasonal affective disorder (311) *("Winter blues")*	○	○
Negative symptoms in schizophrenia (295)	○	○
Neurotic,* stress-related,** and somatoform disorders (300s) **Primary anxiety disorders* ***Post-traumatic and acute stress disorders*	○	○
Primary (non-organic) sleep disorders (307.4)	○	○
Jet lag syndrome (307.45) *(Circadian rhythm sleep disorder, jet lag type)*	○	○

Please indicate any other conditions in which you consider BLT efficacious as **monotherapy**.

For each of the following conditions (ICD-9 codes in parentheses), please indicate whether you consider BLT efficacious as **adjunctive treatment**.

	Yes	No
Non-seasonal major depressive disorder, single episode (296.2)	○	○
Non-seasonal major depressive disorder, recurrent (296.3)	○	○
Seasonal affective disorder (296.3) *(Major depressive disorder, recurrent, with seasonal pattern)*	○	○
Sub-syndromal seasonal affective disorder (311) *("Winter blues")*	○	○
Negative symptoms in schizophrenia (295)	○	○
Neurotic,* stress-related,** and somatoform disorders (300s) **Primary anxiety disorders* ***Post-traumatic and acute stress disorders*	○	○
Primary (non-organic) sleep disorders (307.4)	○	○
Jet lag syndrome (307.45) *(Circadian rhythm sleep disorder, jet lag type)*	○	○

Please indicate any other conditions in which you consider BLT efficacious as **adjunctive treatment**.

The following questions request demographic data.
We emphasize that these data are optional. They will be used anonymously and only for statistical purposes.

Which of the following describes your current level of training?

○ Resident
○ Attending
○ Other

What percent of your practice is outpatient?

What percent of your practice is inpatient?

Adapted with permission from Fischer R.

Which of the following, if any, best describes your practice?

- ◯ Urban
- ◯ Suburban
- ◯ Rural

Including residency, how long have you practiced medicine (in years)?

Please identify your gender.

- ◯ Male
- ◯ Female
- ◯ Other/Deferred

If you would like to be entered for a chance to win a free new-in-box iPad, please include your name and e-mail here. This identifiable information will be used ONLY for the purpose of the iPad raffle and destroyed promptly after the iPad recipient is selected at random and contacted.

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