

3. 意識的にリラックス

本格的なリラックス法の習得には練習が必要です。簡単にできる方法をいくつか覚えておくと、役立ちます。

「緊張している」と感じたら意識的に行ってみましょう。

簡単にできること

- ① 入浴後や寝る前に、軽いストレッチや柔軟体操
- ② ゆっくりとした腹式呼吸を繰り返す
- ③ 静かな環境で、30分程目を閉じて瞑想

習得には少し練習が必要

- ④ 自律訓練法
- ⑤ 緊張と弛緩を繰り返す筋肉の弛緩法

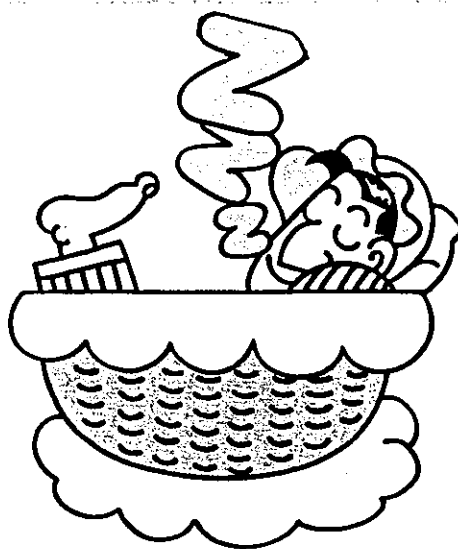
4. 不安や面倒は棚上げ

疲れていると悲観的になりやすく、夜は難しいことを考えるのにはむきません。人生に悩みはつきもの、と割り切って、問題解決はできるだけ昼間に。



実行するためのヒント どのようなことならできそうですか

- 気がかりや心配事はメモにとって明日にのぼす
- 家族や友人と世間話をする
- 気楽なテレビをみたり雑誌を眺める
- 花の手入れやペットの世話などをする
- 頭を使わない手仕事などをする



ストレスに対処する

強すぎるストレスも不眠の原因に。生活やストレス対処の仕方ですトレスに強くなれます。



ストレスに強くなる方法と考え方

ステップ1 何が自分のストレスかを見極める

どんな時にストレスを感じ、どう反応しているかを記録してみる

ステップ2 ストレスの要因にどう対処するかを考える

避けられないもの、解決できるもの、受け入れることに分ける

ステップ3 現実的な対応で変えられるものはその方法で試す



あなたの問題はどこにありそうですか。チェックしてみましょう。

(リラクゼーション)

- 自由時間がほとんどない
- ゆっくりした入浴は週3日以下
- 残業は週3日以上
- 枕が変わると熟睡できない

(楽しみの有無)

- ひとりで楽しむ趣味がない
- 仕事が面白くない
- 忙しいのに退屈だと思う
- 運動はかえって疲れる

(気持ちの転換)

- 悩み事を抱え込むほう
- 嫌なことはいつまでも気になる
- 休日に家で仕事をすることが多い
- 旅行や長期休暇には罪悪感がある

(時間管理や対処法)

- 今日の仕事や家事を残すと寝られない
- いつも忙しくて時間がない
- 他人に仕事を任せられない
- 気持ちや考えを表すのがへた

実行するためのヒント どんなことならできそうですか

(気持ちの転換)

- ・他人に話す
- ・別な活動に集中
- ・家では仕事をしない
- ・休日は外出やスポーツ

(楽しみや趣味)

- ・したかったことを始める
- ・ささいな楽しみを重視
- ・短期、長期の目標をもつ
- ・考えるより行動する

(時間や仕事の管理)

- ・すべきことを書き出す
- ・簡単な仕事は人に任せる
- ・作業の優先順位をつける
- ・単純化して雑用を減らす

4週間後 再度、睡眠と習慣をチェックします



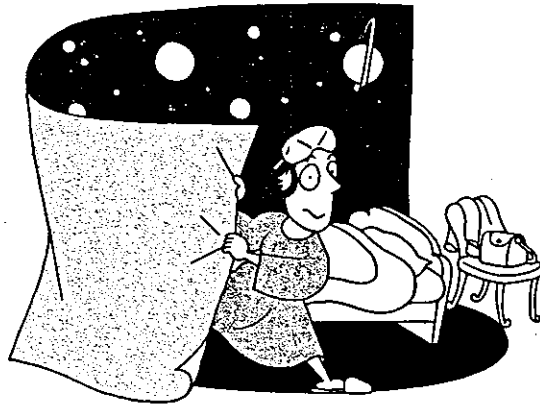
どこがどんなふうになりましたか

目標は習慣になるまで
継続させましょう。慣れ
たら次の目標に挑戦

夕食から寝るまでは	3時間以上	2時間程度	1時間程度
コーヒー、濃い緑茶などを1日に	3杯以内	4-5杯	6杯以上
寝つきをよくするために飲酒	あまりない	ときどき	よくある
休日はふだんより1時間以上朝寝坊	あまりない	ときどき	よくある
午後3時過ぎに昼寝を30分以上する	あまりない	ときどき	よくある
定期的な運動は	している		していない
目覚めたらすぐに起きる	よくある	ときどき	あまりない
長く眠るため、早く寝床に入る	あまりない	ときどき	よくある
前日の睡眠不足を昼寝で補う	あまりない	ときどき	よくある
ベッドでテレビを見たり仕事をする	あまりない	ときどき	よくある
眠れないと寝床で本を読んだりする	あまりない	ときどき	よくある
昼もベッド上でくつろぐ	あまりない	ときどき	よくある
寝室の環境（騒音・温度・照明など）	問題ない		問題あり
寝室で難しい話や考えごとをする	あまりない	ときどき	よくある
就寝直前まで、仕事や勉強をする	あまりない	ときどき	よくある
のんびりした入浴は	よくある	ときどき	あまりない
仕事や人間関係の悩みを抱え込む	あまりない	ときどき	よくある
睡眠薬を使うことが	ない	ときどき	よくある
() 点 ← 右の合計	() 個 × 3 点 =	() 個 × 2 点 =	() 個 × 1 点 =

数える

- 現在の睡眠時間は 約 () 時間/日
- 寝床に入る時刻は () 時頃 寝つく時刻は () 時頃
- 目覚める時刻は () 時頃 起きだす時刻は () 時頃
- 昼間の眠気 ほとんどない ときどきある よくある
- 目覚めの気分 だいたいよい まちまち だいたい悪い
- 早く目が覚める ほとんどない ときどきある よくある



ぐっすり眠る

4週間で行う自己コントロール法 実践用ワークシート

2004年3月31日

監修 山上敏子 (久留米大学文学部)

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SHORT PAPER

Brief behavior therapy for sleep-habit improvement in a work place by correspondence

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Abstract

The effects of mediated minimal behavioral intervention on poor sleepers were examined. A behavioral sleep education trial was applied to 114 Japanese workers. The program was designed as a complete self-help approach by means of mediated intervention. The self-checking of sleeping habits, goal setting, self-monitoring, and reinforcement were used as behavior modification techniques. A manual was also referred to. After the intervention, six kinds of sleep-related behaviors were significantly improved. As for sleep, total sleep time was significantly increased, sleep latency, time in bed after sleep offset shortened, and sleep efficiency was also increased. These results suggest that a simple behavioral approach is effective in the improvement of sleep quality.

Key words: behavioral therapy, health education by correspondence, self-help manual, sleep habits.

INTRODUCTION

The efficacy of behavioral treatment for chronic insomnia patients has been proven, and all types of behavioral approach to the condition are expected to be fruitful.¹ Nonetheless, there are currently no actual intervention studies on behavior therapy in Japan. In the present research, the authors have developed a mediated educational program using minimal behavioral modification techniques. The purpose of the present study was to clarify the effect of this intervention. The research was aimed at overall improvement in, with reference to sleep

habits and the quality of sleep in terms of sleep latency, total sleep time, and sleep efficiency.

METHODS

The program was carried out as a current health educational campaign for all workers. The participants were 114 office workers, 52 males (mean age: 39.7 ± 11.0 years) and 62 females (mean age: 35.2 ± 9.7 years). They were recruited by means of a letter consisting of an explanation of the program and an application form. Behavioral strategies used in the program were self-checking for daily sleep-related habits, goal setting for behavioral changes, self-monitoring and operant reinforcement. The program ran for 1 month, and support was provided for participants to learn about sleep hygiene and to master behavioral techniques by way of the manual and application format. Rewards were presented post intervention.

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Initially, each participant examined their own sleep-related habits and evaluated the results themselves. Then, they selected three target behaviors from 13 realistic examples of behavior change on the application form. They received a monitoring sheet and an educational pamphlet that was published by the first author. Then, they monitored and recorded their target behavior every day for 1 month.

The primary outcome measures were behavior and sleep change post treatment. The data were collated from the application form and the post treatment questionnaire. The results were analyzed for 75 subjects whose data were complete for the change of daily habits and sleep, and for 96 participants who had kept their records and answered the post treatment questionnaires. A paired *t*-test was used in the analysis.

RESULTS

As 102 participants (89.5%) had recorded their target behaviors, the attendance ratio was as high as 89.5%. The record's performance ratios with these 102 participants was 77.5%. Through comparison of the pre and post questionnaire of 75 subjects, total sleep time was increased from 5.96 to 6.18 h ($P < 0.01$), sleep latency tended to decrease from 40.2 to 33.0 min ($P < 0.06$), the time taken to fall asleep tended to become earlier from 01:19 to 01:00 hours ($P < 0.06$), and sleep efficiency also tended to change from 86.9 to 89.4%

($P < 0.06$). In terms of sleep-related behaviors, six out of the 10 habits improved significantly: for example, activities before going to bed, daily caffeine intake, reading or watching TV in bed, getting out of bed quickly, relaxation by having a bath and doing regular exercise (Table 1).

DISCUSSION

Kunitsuka and Adachi have already examined and found the effects of a mediated minimal behavioral intervention on weight control² and on the improvement of six lifestyles.³ This was the first trial of the same approach for sleep-related habits and sleep improvement. Behavioral therapy for chronic insomnia is established to be the first choice of treatment,⁴ and sleep hygiene education is important for public health and prevention of sleep-related problems.⁵ This program is an application of behavioral methods on sleep-hygiene education. The learning components consisted of a bibliotherapy, through a self-help manual, self-checking of sleep habits, target setting and self-monitoring. To reinforce behavioral modification, post-treatment rewards were presented for all record keepers. Participants were volunteers from the general workforce and not screened with any criteria relating to sleep problems. The intervention appeared to prompt and reinforce the initiation, the practice of improved behaviors, and result in a desirable change of sleep habits. Therefore, it is possible that these approaches

Table 1 Change of sleep and habits

n = 75	Baseline	Post treatment	<i>t</i>
Sleep parameters			
Total sleep time (h)	5.96 ± 0.75	6.18 ± 0.75	2.66**
Sleep efficiency (%)	86.9 ± 11.2	89.4 ± 8.6	1.94****
Sleep latency (min)	40.2 ± 36.0	33.0 ± 31.8	1.98****
Fall asleep time	25.19 ± 1.10	25.00 ± 1.44	1.91****
Time in bed after sleep offset (min)	31.8 ± 42.6	22.8 ± 27.6	1.80****
Sleep habits			
Activities before sleep	2.37 ± 0.80	2.49 ± 0.69	2.01***
Caffeine intake	2.19 ± 0.67	2.33 ± 0.68	2.17***
Oversleeping in the weekends	1.44 ± 0.74	1.56 ± 0.72	1.76****
Reading or watching TV in bed	2.19 ± 0.83	2.36 ± 0.78	2.19***
Quickly getting out of bed	1.99 ± 0.85	2.19 ± 0.73	2.30***
Relaxation with a bath	1.91 ± 0.72	2.33 ± 0.74	4.88*
Regular exercise	1.59 ± 0.92	1.80 ± 0.99	2.97**

Results are represented as mean ± SD. * $P < 0.001$; ** $P < 0.01$; *** $P < 0.05$; **** $P < 0.1$. Habits were evaluated to be improved when points increased.

could have more significant results for insomniac sufferers. Although the improvements of sleep parameters were limited, this intervention is cost-effective and worthwhile to develop as a practical and convenient means of group education.

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SHORT PAPER

Long-term effects of brief behavior therapy on sleep habits: Improvement in a work place by correspondence

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Abstract

The long-term effect of mediated minimal behavioral intervention on poor sleepers was examined. Through comparison of the baseline and a 1-year follow-up questionnaire of 36 subjects who participated in a self-help sleep-behavior modification program, total sleep time was increased by 0.49 h ($P < 0.05$), sleep efficiency was improved by 6.1% ($P < 0.05$), and both sleep latency and time-in-bed after sleep offset tended to decrease. As for sleep-related behaviors, oversleeping in the weekends improved significantly ($P < 0.05$), dinner time, relaxation with bath, and regular exercise tended to also improve ($P < 0.1$). These results suggest that a simple behavioral approach produced long-term effects in the improvement of sleep quality.

Key words: behavior therapy, mediated health education, self-help approach, sleep habits.

INTRODUCTION

Adachi *et al.*¹ have shown the effect of brief behavior therapy by correspondence in 75 Japanese office workers; total sleep time and sleep efficiency were increased, and sleep latency, time-in-bed after sleep offset, and six types of sleep-related habits were significantly improved. The program ran for 1 month and required a complete self-help approach. The behavioral strategies were used as a self-checking method for daily sleep-related habits, goal setting for behavioral changes, self-monitoring and operant reinforcement, and were part of a current health educational campaign in a workplace.² Support was provided for the participants to learn about sleep hygiene and to master behavioral techniques, by

way of a manual. In this research, for examination of long-term effects of this program, the participants were followed up 1 year later with a questionnaire.

METHODS

A follow-up letter was delivered to 65 of 75 subjects, as detailed in a previous report,¹ who were working in October 2002; 39 participants answered (response rate: 60.0%). The 75 subjects were volunteers from the general workforce and were not screened with any criteria relating to sleep problems.¹ The objective of the follow-up study was described at the beginning of the letter. The primary outcome measures were behavior and sleep change at follow-up. The change of 10 sleep-related habits and eight sleep parameters from baseline, post-treatment, and follow-up were observed. The data were collated from the application form and from the post-treatment and follow-up questionnaire. The results were analyzed for 36 subjects (19 males and 17 females)

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Table 1 Change of sleep and habits 1 year after the initial study

n=36	Intervention period		Follow-up 1 year later	F	P
	Baseline	Post-treatment			
Sleep parameters					
Total sleep time (h)	5.60±1.05	5.79±1.12	6.09±1.19**	3.21	0.046
Sleep efficiency (%)	81.4±14.6	87.0±11.9**	87.5±10.6**	5.83	0.005
Sleep latency (min)	41.0±41.6	26.8±26.2**	29.2±30.0*	4.49	0.015
Time in bed after sleep offset (min)	41.0±51.4	26.7±34.7	23.6±37.4*	2.58	0.083
Sleep habits					
Dinner time	2.28±0.70	2.42±0.60	2.47±0.77*	2.94	0.060
Oversleeping in the weekends	1.33±0.63	1.53±0.77	1.75±0.73**.*	8.51	<0.001
Relaxation with bath	1.83±0.74	2.17±0.74**	1.92±0.65	4.10	0.0021
Regular exercise	1.57±0.92	2.03±1.01**	1.60±0.91****	6.14	0.004

Results are presented as mean ± SD. Higher points means that sleep habits are better. Versus baseline * $P < 0.1$, ** $P < 0.05$; versus post treatment *** $P < 0.1$, **** $P < 0.05$.

whose data was complete for the change of daily habits and sleep. The ANOVA and Tukey's HSD test were used for data analysis.

RESULTS

The mean age of 19 males and 17 females was 42.2 ± 10.4 and 32.5 ± 8.8 years, respectively. Through comparison of the baseline and follow-up questionnaire of 36 subjects (Table 1), total sleep time was significantly increased from 5.60 to 6.09 h, sleep efficiency also improved from 81.4 to 87.5% ($P < 0.05$), sleep latency tended to decrease from 41.0 to 29.2 min ($P < 0.1$), and time-in-bed after sleep offset tended to decrease from 41.0 to 23.6 min ($P < 0.1$). In terms of sleep-related behaviors, oversleeping on the weekends improved significantly ($P < 0.05$), dinner time, relaxation with a bath, and regular exercise tended to also improve ($P < 0.1$). By comparison with the post-treatment, total sleep time was prolonged, and time-in-bed after sleep offset tended to decrease. Other than that, the effect of sleep efficiency and sleep latency were maintained.

DISCUSSION

Behavioral therapy for chronic insomnia has been established as the first choice of treatment,³ and sleep hygiene education is important for the prevention of sleep-related problems.⁴ The mediated behavior intervention used in the present study was practical, and a convenient self-control program consisted of a bibliotherapy (through a self-help manual), self-checking of sleep

habits, target setting and self-monitoring. The authors reported previously on the post-treatment effects of 75 subjects' sleep parameters in which the total sleep time was increased from 5.96 to 6.18 h ($P < 0.01$), sleep latency tended to be decreased from 40.2 to 33.0 min ($P < 0.06$), the time taken to fall asleep tended to become earlier from 1.19 to 1.00 h ($P < 0.1$), and sleep efficiency tended to improve from 86.9 to 89.4% ($P < 0.06$). As for sleep-related habits, six of 10 behaviors, that is, activities before going to bed, daily caffeine intake, reading or watching TV in bed, getting out of bed quickly, relaxation by having a bath and regular exercise, had improved.

As the subjects whose data was collected in this follow-up study were limited to only 48% ($n = 36$ of 75), there is a possibility that the results have a bias. However, for these 36 subjects, the total sleep time and sleep efficiency were significantly improved, and sleep latency and time-in-bed after sleep offset tended to be shorter. Several meta-analytic reviews showed that post-treatment effects of behavior therapy for chronic insomnia are well maintained for 6 months.³ Present study results also presented the long-term effects on four sleep parameters, and on two types of sleep-related habits. More specific approaches for individual sleep problems should be investigated as they may produce more expectable effects.

ACKNOWLEDGEMENTS

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SHORT PAPER

Self-monitoring and bibliotherapy in brief behavior therapy for poor sleepers by correspondence

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Abstract

To clarify the specific effects of self-monitoring in brief behavioral intervention by correspondence, two kinds of behavioral treatment were used. Group M (n=70) consisted of bibliotherapy, self-checking for habits, goal-setting, self-monitoring and operant reinforcement. In group B (n=18), self-monitoring was excluded from these components. As a result, total sleep time and three kinds of sleep qualities improved in both group M and group B participants. The improvements of sleep latency, sleep efficiency, sleep-related habits and program-adherence rates were better in group M participants. These results suggested that self-monitoring might improve sleep-related behaviors and program adherence.

Key words: behavior therapy, bibliotherapy, education by correspondence, self-help approach, self-monitoring.

INTRODUCTION

Behavior therapy has proven to be efficient as a non-pharmacologic treatment of chronic insomnia.¹ Life-habit modification is expected to be effective for sleep problems,^{1,2} but there are limited studies on the effect of sleep hygiene education.³ Adachi *et al.*⁴ reported that brief behavior therapy by correspondence significantly contributed to an increased total sleep time and improved six types of sleep-related habits in 75 Japanese workers. The intervention was for 1 month and was a convenient self-help approach with the use of minimal behavioral techniques. Although we considered that bibliotherapy, self-checking, goal-setting, and self-monitoring were essential components for habit modification, the specific effects of each component were

unclear. Therefore, in order to clarify the effects of self-monitoring as a daily task, two types of groups were used in this research.

METHODS

This research was carried out as part of our current health educational campaign.⁵ The participants were 114 workers from a newspaper company, and were registered voluntarily in either the brief behavioral therapy group (group M, n=84) or the group who received the same therapy including bibliotherapy but without self-monitoring (group B, n=30). The educational components for group M were exactly the same as that used in a previous program,⁴ that is, bibliotherapy using a self-help manual, self-checking for daily habits, practical goal-setting for behavioral changes, daily self-monitoring of targeted behaviors, and operant reinforcement with post-treatment rewards.⁵ The outcome measures were sleep and behavior changes, and program adherence rates. The changes in total sleep time, sleep latency,

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sleep efficiency, 10 sleep-related habits, and sleep qualities (mood in the morning, sleep satisfaction, and daytime sleepiness) from pre to post-treatment were observed. Program adherence rates were evaluated by the ratio of retained subjects. Data were collated from the application forms and from post-treatment questionnaires. Finally, the results were analyzed for 88 subjects (group M: $n=70$, group B: $n=18$; age 35.1 ± 9.5 years); some data were missing because 18 subjects provided incomplete forms/questionnaires and 8 subjects dropped out. The characteristics, such as mean age, gender distribution, the work style and the rate of users who help them sleep (group M: 5.7%, group B: 11.1%) were not significantly different between the two groups. The Student's *t*-test, paired-*t*-test, and Chi-squared test were used in the analysis of the results.

RESULTS

Baseline sleep parameters, sleep habits and sleep qualities were not significantly different in the two groups. Through comparison of the pre- and post-treatment questionnaires, the total sleep time increased from 5.80 to 5.97 hours ($P < 0.05$), sleep latency tended to decrease from 34.7 to 29.5 min ($P < 0.1$), and sleep efficiency tended to improve from 86.1 to 87.8% ($P < 0.1$) in group M participants (Table 1). In group B participants, only total sleep time was increased from 6.22 to

6.55 h ($P < 0.05$). The changes in total sleep time did not differ between the two groups.

As for sleep-related habits, four types of behavior such as 'oversleeping on the weekend', 'activities before sleep', 'quickly getting out' and 'relaxation with bath' had improved significantly in group M participants ($P < 0.05$). 'Quickly getting out' and 'relaxation with bath' were slightly improved for group B participants ($P < 0.1$). Sleep quality, indicated by mood in the morning, sleep satisfaction and daytime sleepiness were improved significantly in both groups, and sleep satisfaction tended to be more improved in group B participants than in group M participants ($P < 0.1$). The program adherence rate in group M participants was higher than that in group B participants (group M: 94.0%, group B: 76.7%, Chi-squared = 7.09; $P < 0.05$).

DISCUSSION

The difference in behavioral educational components between the two groups in the present study was the presence or absence of self-monitoring. Total sleep time in group B increased as it did for group M; sleep quality also improved in both groups. However, the improvements of sleep latency, sleep efficiency, sleep-related habits and program adherence rates were better in group M than in group B participants. Thus, the difference may reflect specific effects of self-monitoring in this program. Because it is possible that there was some motivation

Table 1 Change of sleep parameters, habits and qualities in the two study groups

	Group M ($n=70$, 20 males, 50 females)			Group B ($n=18$, 6 males, 12 females)			<i>t</i> (Group M vs B)	
	Pre	Post	tri	Pre	Post	tri	Pre	tri
Sleep parameters								
Total sleep time (h)	5.80 (0.98)	5.97 (1.06)	0.17*	6.22 (0.85)	6.55 (1.02)	0.33*	1.64	0.91
Sleep latency (min)	34.7 (26.1)	29.5 (24.2)	-5.3***	35.0 (31.3)	36.1 (33.6)	1.1	0.04	0.90
Sleep efficiency (%)	86.1 (10.3)	87.8 (9.3)	1.7***	87.7 (7.6)	89.0 (8.8)	1.4	0.61	0.16
Sleep habits (points)								
Oversleeping in the weekend	1.43 (0.69)	1.66 (0.74)	0.23**	1.67 (0.69)	1.61 (0.70)	-0.06	1.30	1.68***
Activities before sleep	2.01 (0.95)	2.23 (0.79)	0.22*	2.39 (0.85)	2.56 (0.70)	0.17	1.52	0.25
Quickly getting out	1.94 (0.84)	2.31 (0.78)	0.37**	1.83 (0.79)	2.11 (0.83)	0.28***	0.49	0.45
Relaxation with bath	1.80 (0.78)	2.29 (0.79)	0.49**	1.89 (0.76)	2.22 (0.73)	0.33***	0.45	0.84
Sleep qualities (points)								
Mood in the morning	1.74 (0.61)	2.06 (0.69)	0.32**	1.75 (0.68)	2.13 (0.50)	0.38*	0.06	0.32
Sleep satisfaction	1.87 (0.65)	2.04 (0.71)	0.18**	1.59 (0.51)	2.06 (0.43)	0.47**	1.64	1.98***
Daytime sleepiness	1.70 (0.74)	1.91 (0.74)	0.21*	1.65 (0.61)	2.06 (0.56)	0.41**	0.26	0.96

Data in parentheses are SDs. Tri, mean (Post-Pre). Sleep habits and sleep qualities points are from 1 (poor) to 3 (good). * $P < 0.1$; ** $P < 0.05$; *** $P < 0.01$.

bias between the two groups, it is difficult to draw a conclusion based solely on these data. However, as significant improvements of sleep and sleep quality were observed even in group B participants, brief behavior therapy without self-monitoring may be useful as a simpler and more practical educational intervention. Future studies could examine long-term effects of these behavioral techniques in randomized control trial studies.

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