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Comparing Participants' Satisfaction with Behavioral Therapies for Chronic Insomnia
Mise en comparaison de la satisfaction des participants quant aux thérapies comportementales contre l'insomnie chronique

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Article abstract

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Mise en comparaison de la satisfaction des participants quant aux thérapies comportementales contre l'insomnie chronique

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Keywords

insomnia;
sleep education hygiene;
stimulus control therapy;
sleep restriction therapy;
multi-component therapy;
satisfaction with treatment

Abstract

Introduction: Extensive evidence supports the effectiveness of behavioral therapies for chronic insomnia, but there is limited information on patients' satisfaction with these, which is a key factor in therapy uptake, adherence and effectiveness. **Objective**: This study compared participants' satisfaction with the process and outcome attributes of single- and multi-component behavioral therapies for chronic insomnia. **Methods**: Data were obtained from 496 persons with chronic insomnia who chose or were randomized to one of three single-component behavioral therapies—sleep education and hygiene (SEH), stimulus control therapy (SCT), or sleep restriction therapy (SRT)—or a multi-component therapy (MCT) combining all three. At baseline, participants had experienced moderately severe insomnia on average for 11 years. Participants completed the measure of satisfaction within one week of treatment conclusion. The measure's subscales assessed participants' perception of the following attributes: suitability, utility and usefulness of mode and dose of therapy delivery; therapists' competence and interpersonal style; and treatment outcomes. The subscales demonstrated good psychometric properties. Analysis of variance was used in the comparisons. **Results**: Significant differences (all *p*-values $\leq$ .001) were found in the ratings of some process attributes and of all outcome attributes of the therapies. Education was rated as more suitable but less useful than behavioral instructions. Overall, results support patients' satisfaction with SCT, SRT, and MCT and, to a lesser extent, with SEH as a single-component therapy. **Discussion and conclusions**: SCT, SRT and MCT were viewed favorably as therapies for successfully managing insomnia.

Mots-clés

insomnie;
éducation à l'hygiène du sommeil;
thérapie du contrôle du stimulus;
thérapie de la restriction du sommeil;
thérapie multi-composantes ;
satisfaction à l'égard du traitement

Résumé

Introduction : Si des résultats probants démontrent l'efficacité des thérapies comportementales pour l'insomnie chronique, il existe peu d'information sur la satisfaction des patients à l'égard de ces traitements, alors que celle-ci affecte leur adoption, leur observance et leur efficacité. **Objectif** : Cette étude a comparé la satisfaction de participants souffrant d'insomnie chronique quant au processus et aux résultats de thérapies comportementales à une ou plusieurs composantes. **Méthodes** : Les données ont été recueillies auprès de 496 personnes souffrant d'insomnie chronique qui ont été assignées à l'une des trois thérapies comportementales à une composante, dont l'éducation à l'hygiène du sommeil (SEH), le contrôle du stimulus (SCT) et la restriction du sommeil (SRT), ou à une thérapie comportementale à plusieurs composantes (MCT : composée de SEH, SCT et SRT). En moyenne, les participants souffraient d'insomnie modérément sévère depuis 11 ans. La mesure de la satisfaction des participants a été recueillie durant la semaine suivant la fin du traitement. Les sous-échelles de l'instrument de mesure évaluaient leurs perceptions à l'égard de la pertinence et de l'utilité du mode et du dosage d'administration de chaque traitement, de la compétence et du style interpersonnel des thérapeutes, et des résultats du traitement. Les sous-échelles ont démontré de bonnes propriétés psychométriques. Pour des fins de comparaisons, des analyses de variance ont été utilisées. **Résultats** : Des différences significatives (tous les p <0,001) ont été notées pour certains aspects du processus et pour tous les aspects liés aux résultats des thérapies. L'éducation à l'hygiène du sommeil (SEH) a été jugée plus appropriée, mais moins utile que les instructions comportementales. Dans l'ensemble, les résultats soutiennent la satisfaction des patients à l'égard du SCT, du SRT et du MCT ainsi que, dans une moindre mesure, du SEH. **Discussion et conclusions** : Le SCT, le SRT et le MCT ont été évaluées comme des thérapies permettant de gérer l'insomnie avec succès.

INTRODUCTION

Cognitive-behavioral therapy for insomnia (CBT-I), recognized as the first-line treatment for chronic insomnia (Riemann et al., 2017), incorporates behavioral components such as stimulus control and sleep restriction. These components, delivered independently or in combination, are recommended in professional guidelines (e.g., Pinto et al., 2010) as beneficial therapies for addressing the psychological and behavioral factors perpetuating chronic insomnia (Morin, 2015). Whereas extensive evidence supports the effectiveness of CBT-I and its components (e.g., van Straten et al., 2017), little is known about patients' satisfaction with them. Evidence of satisfaction provides feedback on treatment elements that are acceptable and those that require refinement (Alessi & Rash, 2017). Satisfaction can also affect the initiation, adherence, completion, and outcomes of evidence-based treatments. If not perceived favorably, evidence-based therapies will not be sought out, properly implemented and adhered to by patients, which could contribute to poor outcomes (Kendra et al., 2015).

The few studies that have examined patients' satisfaction with CBT-I (e.g., Constantino et al., 2007; Holmqvist, Vincent, & Walsh, 2014; Sunnhed & Jansson-Fröjmark, 2015; Vincent, Lewycky, & Finnegan, 2008) using self-report instruments measuring overall perception of the therapy found satisfaction to be high. However, these instruments did not allow for a detailed evaluation of the components of CBT-I and feedback on which therapy attributes are perceived favorably and unfavorably. Yet, such feedback is precisely what is needed to refine CBT-I and its components and enhance their attractiveness to potential users (Schulte, Leier, & Stirling, 2011).

This study aimed to fill the gap in knowledge regarding satisfaction with behavioral therapies by comparing how persons with chronic insomnia perceive these. Satisfaction was measured with a validated multi-dimensional instrument (Sidani, Epstein, & Fox, 2017) in a large, pragmatic, partially randomized preference trial (Sidani, Epstein, Bootzin, Miranda, & Cousins, 2015). The trial offered three single-component therapies—sleep education and hygiene (SEH), stimulus control therapy (SCT) and sleep restriction therapy (SRT)—and one multi-component therapy (MCT).

For the purposes of this study, satisfaction was defined as participants' acceptance of therapy reported upon treatment completion (Sekhon, Cartwright, & Francis, 2017). Participants were asked to evaluate therapy process and outcome attributes. More specifically, we focused on the following process attributes: suitability (appropriateness in addressing the health problem) and utility (usefulness in managing the health problem) of each therapy component; overall quality of the therapy (attitude toward and desire to continue using the therapy); therapists' competence (knowledge) and interpersonal style (therapeutic relationship with participants); and usefulness of delivery mode and dose in facilitating patients' understanding and application of the treatment recommendations. Therapy's outcome attributes were assessed on the basis of perceived improvement in the health problem and general functioning, as well as attribution of the outcomes to the therapy (Sidani & Epstein, 2016).

METHODS

DESIGN

Eligible consenting participants completed the Treatment Acceptability and Preference (TAP) scale to determine therapy preference. The TAP contained descriptions of the therapies' goal, components, activities, delivery mode and dose, effectiveness and risks; items to rate therapy acceptability; and a concluding question asking participants to indicate their preference for any of the therapies under evaluation (Sidani, Epstein, Bootzin, Moritz, & Miranda, 2009). Participants who indicated a preference were assigned to their therapy of choice, whereas those who did not

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indicate a preference were randomly assigned to one of the four behavioral therapies. This design was used to enhance enrollment and sample representativeness and to reduce attrition (Bradley-Gilbride & Bradley, 2010). There is evidence to the effect that participants report high satisfaction when they receive treatment they prefer (Lindheim, Bennett, Trentacosta, & McLear, 2014). Differences in therapy satisfaction between participants assigned to treatment randomly and those who chose a treatment were examined to determine the influence of preference on satisfaction.

Participants received the instrument measuring satisfaction by mail in the last week of treatment and were instructed to complete it within one week post treatment. The research assistant contacted them to remind them to return the completed measure in a postage-paid envelope within the specified time frame. The study protocol was approved by the Research Ethics Board of the participating institution.

THERAPIES

Sleep Education and Hygiene (SEH): As a single-component therapy, SEH was designed to inform persons with insomnia of factors that perpetuate insomnia and general strategies to promote a good night's sleep. These included a list of recommendations to follow during the day (e.g., engage in physical activity and avoid napping), in the evening (e.g., avoid caffeine), and around bedtime (e.g., eliminate noise in the bedroom) (Irish, Kline, Gunn, Buysse, & Hall, 2015). Participants read the booklet and applied the sleep hygiene recommendations on their own. They had no contact with the study therapists.

SEH is foundational for other therapies because it explains the mechanisms underlying insomnia and the effects of SCT and SRT. Therefore, SEH was covered in the other therapies (Bootzin & Epstein, 2011). In the first session of these therapies, the therapists covered the content of SEH (hereafter referred to as SEH education), handed out the booklet for future reference (hereafter referred to as SEH booklet), and encouraged participants to follow the sleep hygiene recommendations.

Stimulus Control Therapy (SCT): SCT consists of specific instructions aimed at re-associating bed with sleep. The instructions are as follows: go to bed only when sleepy; avoid activities other than sleep (e.g., reading) in bed; get out of bed if unable to fall asleep or back to sleep within 15-20 minutes and engage in quiet activities until sleepy; and wake up at the same time (Bootzin & Epstein, 2011). In the first session of this single-component therapy, the study therapists provided the SEH education and the SEH booklet, discussed the SCT instructions, and encouraged participants to implement the SEH recommendations and the SCT instructions. In subsequent sessions, the therapists reviewed the instructions and involved participants in discussing barriers to their implementation and problem-solving to overcome the barriers.

Sleep Restriction Therapy (SRT): SRT focuses on developing a consistent sleep-wake schedule that meets an individual's sleep needs. These needs are estimated from sleep parameters documented in a sleep diary, which inform the total sleep time to prescribe, guided by available algorithms (Manber et al., 2012). In the first session of this single-component therapy, the study therapists provided the SEH education and the SEH booklet, explained the rationale behind SRT, negotiated the sleep-wake schedule for each participant, and asked participants to follow the schedule. In subsequent sessions, the therapists engaged participants in discussing challenges in maintaining the schedule and strategies to address them. In addition, the therapists modified the sleep-wake schedule, if needed, as proposed in the published algorithms.

Multi-Component Therapy (MCT): The MCT included SEH, SCT, and SRT. The therapies' recommendations were given in the first session, while subsequent sessions focused on challenges in implementing the treatment recommendations and how to deal with them.

SCT, SRT, and MCT were delivered by trained Master's prepared therapists (advanced practice nurses, psychologists) across four group sessions lasting 60-90 minutes and two individual sessions lasting 15-20 minutes. The face-to-face group sessions involved 8-10 participants and the individual sessions were delivered over the

telephone. The sessions were offered once a week over a six-week period.

SAMPLE

Consistent with recommendations for pragmatic trials, broad eligibility criteria were pre-set for this study to enhance the sample's representativeness of the target population (Zwarenstein & Treweek, 2009). Persons with chronic insomnia were eligible if they were community-dwelling, English-speaking, and cognitively intact (score > 24 on the Mini-Mental State Exam; Crum et al., 1993) adults ($\geq$ 21 years of age); experienced insomnia for $\geq$ 3 months, as difficulty falling or staying asleep for $\geq$ 30 minutes, on $\geq$ 3 nights per week; and viewed insomnia as bothersome and interfering with daytime function, ascertained with relevant items of the Insomnia Interview Schedule (Morin, 1993). Persons with a self-reported diagnosis and receiving treatment for sleep apnea were excluded because behavioral therapies are not recommended for insomnia associated with sleep apnea.

Different strategies were used for recruitment. These included advertisements in local newspapers, announcements on local TV or radio programs, and distribution of brochures in ambulatory care and sleep clinics located in acute care hospitals and community health centers.

The sample for this study consisted of 496 persons who met all the eligibility criteria, consented to take part, and completed the measure of satisfaction at post-test (96% of the 517 persons who initiated treatment). In all, 238 participants expressed a preference and were assigned to the therapy of their choice and 258 expressed no preference and were randomized across the four therapies. The sample broke down by treatment group as follows: 246 MCT, 94 SCT, 81 SRT, and 75 SEH. Group sizes were adequate to detect small-to-moderate between-group differences in satisfaction with treatment at a significance level of $\leq$ .01 and power of .80 (Cohen, 1992).

VARIABLES AND MEASURES

Participants' demographic characteristics: Standard questions were administered to collect data on participants' demographic characteristics including age, gender, marital and employment status, education, and race.

Participants' clinical characteristics: Relevant items of the Insomnia Interview Schedule (Morin, 1993) were used to assess symptoms, duration and perception of insomnia. The Insomnia Severity Index measured perceived insomnia severity, with higher scores indicating severe insomnia; it has shown excellent psychometric properties (Morin, Belleville, Bélanger, & Ivers, 2011).

Satisfaction with treatment: Satisfaction was assessed with the subscales of the Multi-Dimensional Treatment Satisfaction Measure (MDTSM) developed by Sidani et al. (2017). The subscales allow participants to appraise the process and outcome attributes of therapy received. The subscales relate to the following process attributes: suitability and utility of each component of the therapy, attitude toward therapy, desire to continue using therapy, competence and interpersonal style of therapist, usefulness of therapy format (in this study: booklet, group face-to-face sessions, and individual telephone sessions) and dose (in this study: length of booklet, duration and number of group and individual sessions) in helping participants understand and apply treatment recommendations. The subscales focusing on appraisal of outcome attributes included: self-perceived improvement in insomnia symptoms and daytime function, and attribution of outcomes to therapy received. Items were rated on a five-point response scale ranging from *not at all* (0) to *very much* (4). Total subscale scores were obtained by computing the mean of the item scores for each subscale, with high scores indicating high satisfaction. The MDTSM subscales demonstrated good internal consistency reliability (Cronbach's alpha coefficients $\geq$ .70) and good validity, as evidenced by the small-to-moderate correlation between the subscales and measures of treatment adherence and outcomes (Sidani et al., 2017).

Participants rated the process attributes relevant to the therapy received 1) for SEH: suitability, utility, usefulness of format and dose of SEH booklet only; 2) for SCT: suitability and utility of SEH booklet and education and SCT, as well as therapists' competence and interpersonal style, and usefulness of SEH booklet and class and phone sessions; 3) for SRT: suitability and utility of SEH booklet and education and SRT, as well as attributes related to therapists and class and phone sessions; and 4) for MCT: all process attributes. All participants appraised the outcome attributes of their respective therapy.

Data Analysis

Independent sample t-tests were used to examine differences in satisfaction between participants assigned to treatment at random and by preference. Since no statistically significant differences were found (results not reported here), method of treatment assignment was not included in further analyses. In addition to descriptive statistics, repeated-measures analysis of variance was used to examine within-group differences in the perception of the components of SCT, SRT, and MCT. One-way analyses of variance, followed by post-hoc analyses using Tuckey's test, were run to compare between-group differences in the scores on the subscales measuring satisfaction with process attributes and with outcome attributes. The p-level was set at < .01 to minimize the potential for type I error. The partial eta-square (η^2) was computed to determine size of differences.

Results

Participants' Demographic and Clinical Characteristics

Participants assigned to the four therapy groups were comparable in their demographic characteristics and experience of insomnia. On average, participants were middle-aged (54.3 ± 15.7 years; range: 21-90). Most participants were women (64.4%), not married (50%), and employed full-time (41.5%) or part-time (15.9%). They reported an average of 15.9 years (± 3.6; range: 0-35) of formal education. The majority (84.2%) self-identified as white.

Participants experienced chronic insomnia for a mean of 10.6 years (± 11.52), manifested through a combination of symptoms: difficulty falling asleep (70.7%), difficulty staying asleep (92.4%), and early-morning awakening (75.8%). Based on self-report, it took them 41.7 minutes (± 34.3), on average, to fall asleep and they stayed awake for 50.1 (± 36.7) minutes across all awakenings, per night. Participants perceived insomnia to be bothersome (7.1 ± 1.2) and to interfere with their daytime function. They had insomnia of moderate severity based on a mean Insomnia Severity Index score of 17.5 (± 4.2; range: 8-28).

Within-Group Differences

The mean (SD) scores for the subscales assessing satisfaction with processes and outcomes are given in Table 1. Results are presented by therapy.

SEH. Participants deemed the booklet they received to be suitable but only slightly useful in managing insomnia. They reported a rather unfavorable attitude and low desire to continue using it. Participants indicated that the SEH booklet was reasonable in length and its information helpful in understanding the recommendations to promote a good night's sleep. They perceived the SEH as minimally effective in improving their insomnia symptoms, sleep, and engagement in daytime function. They attributed any improvement in outcomes over the six-week treatment period to the SEH therapy only to a very limited extent.

SCT. Participants evaluated the SEH booklet and education as more suitable than the SCT instructions, $F(2,88) = 17.8$, $p < .001$, $\eta^2 = 0.29$. They considered the SEH education and the SCT instructions to be more useful than the SEH booklet, $F(2,87) = 3.5$, $p = .032$, $\eta^2 = 0.07$, in managing insomnia. They expressed a favorable attitude toward SCT and the desire to continue using it. They rated therapists' competence and interpersonal style highly and were highly satisfied with format and dose of therapy, but only moderately satisfied with the dynamics of

Table 1
Mean (SD) Scores for Satisfaction with Treatment

Domain of satisfaction	Attributes		SEH	SCT	SRT	MCT
Processes	Suitability	Booklet	2.23 (0.81)	2.86 (0.76)	2.86 (0.78)	2.72 (0.82)
		Education		2.89 (0.81)	2.86 (0.85)	2.83 (0.78)
		SCT		2.56 (0.90)		2.64 (0.83)
		SRT			2.27 (0.84)	2.22 (0.90)
	Utility	Booklet	1.61 (0.97)	2.66 (0.95)	2.56 (1.05)	2.41 (1.00)
		Education		2.81 (0.89)	2.76 (0.99)	2.66 (0.97)
		SCT		2.77 (0.93)		2.88 (0.96)
		SRT			2.97 (0.99)	2.78 (1.07)
	Attitude toward treatment		1.96 (0.99)	2.89 (0.79)	2.90 (0.68)	2.83 (0.75)
	Desire to continue using therapy		1.80 (1.29)	2.88 (1.07)	3.19 (1.02)	3.09 (0.99)
	Therapist	Competence		3.40 (0.67)	3.47 (0.61)	3.45 (0.69)
		Interpersonal style		3.52 (0.68)	3.60 (0.68)	3.71 (0.48)
	Format and dose	Booklet	2.76 (0.71)	3.25 (0.63)	3.29 (0.66)	3.11 (0.74)
		Group		3.24 (0.70)	3.20 (0.80)	3.30 (0.68)
		Individual		3.20 (0.85)	3.48 (0.56)	3.32 (0.70)
	Dynamics	Group		2.98 (0.94)	3.05 (0.85)	3.19 (0.92)
		Individual		2.69 (1.07)	2.93 (0.86)	2.79 (0.96)
Outcomes	Satisfaction with outcomes	Sleep	1.44 (1.09)	2.33 (0.99)	2.77 (0.82)	2.54 (0.84)
		Daytime function	1.17 (1.10)	2.06 (1.21)	2.41 (1.09)	2.07 (1.11)
	Attribution of outcomes to therapy		1.42 (1.14)	2.61 (0.93)	2.93 (0.73)	2.75 (0.85)

SEH = sleep education and hygiene, SCT = stimulus control therapy, SRT = sleep restriction therapy, MCT = multi-component therapy

face-to-face group and individual telephone sessions. Participants indicated low-moderate levels of satisfaction with improvement in the outcomes they experienced over the treatment period, and attributed this to SCT only to a moderate extent.

SRT. Participants judged the SEH booklet and education as more suitable, $F(2,73) = 23.9$, $p < .001$, $\eta^2 = 0.14$, but less useful, $F(2,70) = 4.2$, $p = .018$, $\eta^2 = 0.10$, than the SRT recommendations in managing insomnia. They had a favorable attitude toward SRT and a high desire to continue using it. They were highly satisfied with therapists, format and dose, and dynamics of group and individual sessions. Participants were moderately satisfied with outcomes over the course of treatment and attributed these to SRT to a moderate-to-large extent.

MCT. Participants viewed the SEH booklet and education as more suitable, $F(3,226) = 47.8$, $p < .001$, $\eta^2 = 0.39$, but less useful, $F(3,223) = 22.8$, $p < .001$, $\eta^2 = 0.23$, than SCT and SRT in facilitating the management of insomnia. They expressed a favorable attitude and a high desire to continue using the treatment. They reported high levels of satisfaction with therapists, format and dose, as well as dynamics of group and individual sessions. They indicated low-to-moderate levels of satisfaction with outcomes achieved upon completing the MCT, which they attributed to MCT to a moderate-to-large extent.

Between-Group Differences

The results of between-group comparisons on process and outcome attributes are presented in Table 2. The ANOVA and post-hoc test results showed statistically significant differences of moderate-large size across the four therapy groups on suitability and utility of the SEH booklet, as well as usefulness of delivery mode and dose, and attitude toward and desire to continue using the respective therapies. Participants in the single-component SEH group had the lowest mean scores, and those in the single-component SRT group had the highest. There were no statistically significant differences in mean ratings of the respective therapy groups regarding perceived suitability and utility of SEH education, SCT, and SRT; usefulness of delivery mode and dose, and therapists' competence. Although statistically significant, the between-group difference in therapists' interpersonal style was only of a very small size.

Discussion

This study broadens knowledge of satisfaction with behavioral therapies by describing participants' perceptions of single- and multi-component therapies for managing chronic insomnia at treatment completion. It was informed by a clear conceptualization and appropriate operationalization of satisfaction with treatment. In contrast to previous research that measured overall satisfaction with treatment, this study examined patients' satisfaction with treatment process and outcome attributes, thereby yielding information on aspects of therapy they appraised favorably and unfavorably. This information is useful in refining therapies.

Generally speaking, our study findings support patients' satisfaction with SCT, SRT, and MCT and, to a lesser extent, SEH as a single-component therapy. However, the mean scores for satisfaction with processes and outcomes of SEH, SCT, SRT, and MCT hovered around the midpoint (i.e., 2 on the rating scale of 0 to 4), which were lower than the mean scores reported in previous research (e.g., Holmqvist et al., 2014; Sunnhed & Jansson-Fröjmark, 2015). Methodological factors, such as differences in measures and sample size could account for the inconsistency in findings across studies. In addition, the lower mean scores found in our study may reflect participant and/or therapy characteristics.

Regarding participant characteristics that might have contributed to the relatively low satisfaction ratings, we note that the participants in our study were typical of persons with chronic insomnia (Morin & Benca, 2012). On average, they were middle-aged, employed, white women who experienced the combination of symptoms (i.e., difficulty falling and staying asleep, early-morning awakening) indicative of moderate insomnia, which had adversely interfered with their daytime function for almost 11 years. As such, they likely sought treatment for their sleep problem from

Table 2
Results of Between Therapy Groups Comparison of Satisfaction with Processes and Outcomes

Domain of satisfaction	Attributes of satisfaction		*F*	*df*	*p*	η^2
Processes	Suitability	Booklet	10.89	3, 470	<.001	.065
		Education	0.19	2, 413	>.05	.001
		SCT	0.49	1, 331	>.05	.001
		SRT	0.24	1, 323	>.05	.001
	Utility	Booklet	18.15	3, 465	<.001	.105
		Education	0.87	2, 413	>.05	.004
		SCT	0.87	1, 332	>.05	.003
		SRT	1.88	1, 321	>.05	.006
	Attitude toward treatment		27.43	3, 491	<.001	.144
	Desire to continue using therapy		30.90	3, 492	<.001	.159
	Therapist	Competence	0.26	2, 417	>.05	.001
		Inter-personal style	3.80	2, 417	.023	.018
	Format and dose	Booklet	8.96	2, 471	<.001	.054
		Group	0.69	2, 409	>.05	.003
		Individual	2.74	2, 407	>.05	.013
	Dynamics	Group	1.87	2, 404	>.05	.009
		Individual	1.29	2, 405	>.05	.006
Outcomes	Satisfaction with outcomes	Sleep	33.89	3, 487	<.001	.168
		Daytime function	17.26	3, 492	<.001	.097
	Attribution of outcomes to therapy		47.75	3, 490	<.001	.226

SCT = stimulus control therapy, SRT = sleep restriction therapy, MCT = multi-component therapy. Note that credibility was not assessed for participants assigned to single-component SEH therapy.

multiple healthcare providers over the years. In this regard, a recent narrative review of 22 qualitative studies revealed that persons with insomnia expressed a sense of frustration related to healthcare providers' misunderstanding of their problem and prescription of treatments (usually medication and SEH) that did not correspond to their perspective and experience of insomnia (Araújo, Jarrin, Leanza, Vallières, & Morin, 2016). Accordingly, the prescribed treatments might not have met our participants' expectations, which could have resulted in treatment dissatisfaction and only a minimal improvement in outcomes (Lawlor et al., 2017). Persons with chronic insomnia are also likely to seek alternative treatments from other sources, including relatives, friends and the Internet. Unfavorable experiences with alternative treatments could have added to existing skepticism about treatments (this point was expressed by some of our participants informally), rendered participants highly critical of treatment, and nurtured a low sense of self-efficacy in following treatment recommendations. All of this could account for the rather low mean satisfaction ratings obtained by the therapies examined in our study.

In terms of therapy characteristics, participants found single-component SEH suitable and convenient but minimally useful in improving their insomnia. Their experience with this therapy confirmed existing evidence to the effect that it is minimally effective in improving sleep and daytime function (Morin et al., 1999). In other words, SEH is not an effective and viable single-component therapy in the practice setting.

Participants reported a favorable experience with MCT, which is the therapy that most often has been investigated and has been demonstrated to be effective in improving sleep outcomes (e.g., Brasure et al., 2016). They were slightly more satisfied with its processes than with its outcomes. They rated the SCT and SRT components as more helpful than the SEH component, and the group and individual sessions as slightly more useful than the booklet in understanding sleep and insomnia and in learning about strategies to manage their sleep problem. Overall, they liked the treatment. They perceived a moderate level of improvement in outcomes, with a slightly higher improvement in insomnia symptoms than in daytime function. Higher levels of satisfaction with treatment processes than with outcomes have been reported in other studies that investigated satisfaction with cognitive-behavioral therapy for anxiety disorders (Smith, Norton, & McLean, 2013) and pain treatment (Wong, Chow, Chen, Wong, & Fielding, 2015). The lower levels of satisfaction with the outcomes of MCT found in this study are not surprising in light of the participants' reported challenges (disclosed informally to therapists during therapy sessions) in implementing the combined SCT and SRT recommendations. This finding highlights the need to investigate reasons for low satisfaction with treatment and to revise MCT accordingly.

Participants in our study who completed SCT or SRT were moderately to highly satisfied with treatment processes. However, SCT recipients were less satisfied with the perceived improvement in insomnia symptoms and daytime function than were SRT recipients. In fact, participants who received SRT had the highest mean ratings of satisfaction with treatment outcomes. This is consistent with evidence supporting the effectiveness of single-component SCT and SRT (Epstein, Sidani, Bootzin, & Belyea, 2012) and the superiority of SRT in effectively and efficiently improving sleep (Armstrong, Sidani, Bootzin, & Epstein, 2014). In addition to its effectiveness as reported in previous studies and experienced by this study's participants, the simplicity of single-component SRT could have contributed to its favorable perception. Compared with SCT (six behavioral instructions) and MCT (all SCT and SRT instructions), SRT comprises one instruction: develop and maintain a consistent sleep-wake schedule. Participants might have felt less overwhelmed by the number of instructions to follow and more confident in their ability to initiate behavioral change. Consequently, they might have anticipated fewer challenges in implementing the change. The challenges in implementing treatment recommendations may be associated with unfavorable therapy perceptions and potentially low adherence and less than optimal outcomes, as suggested by Bouchard, Bastien, and Morin (2003) and Vincent et al., (2008). If replicated, these findings have

implications for practice: Persons with chronic insomnia could be offered single-component behavioral therapy, topped up with additional components as needed.

Study Limitations

Participants might have completed the measure of satisfaction in a socially desirable way to please the therapists and/or researchers. The extent to which participants' experiences of improvement in outcomes over the six-week treatment period contributed to their satisfaction with therapy outcomes was not examined in this study but requires further investigation.

Future Directions

Future research is required to replicate the findings in different samples of persons with chronic insomnia exposed to a range of single- and multi-component therapies. In addition, future studies could: 1) measure and control for social desirability bias, which may influence participants' responses to self-report measures of satisfaction; 2) determine the effects of treatment adherence on satisfaction with therapy processes and outcomes; and 3) use qualitative research methods to explore patients' perspectives on satisfaction with specific aspects of therapy and on potential changes to enhance acceptance of single- and multiple-component therapies for persons with insomnia.

Conclusions

As a single-component therapy, SEH was not viewed favorably. However, persons with insomnia rated sleep education and hygiene as suitable. This finding is consistent with the perspective considering SEH a foundational element to be incorporated in other single- and multi-component CBT-I because it provides information on the rationale behind many therapies and sleep hygiene recommendations to promote a good night's sleep. SCT, SRT and MCT were viewed favorably and can be used to successfully manage insomnia in primary-care settings.

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