

# Feasibility of Single-Session Online Cognitive Behavioral Therapy for Insomnia: Brief Report

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### Abstract

This brief report presents the initial results of the ongoing study. The study aims to assess the feasibility of an online, single-session Cognitive-Behavioral Therapy (CBT) intervention for insomnia. The intervention was implemented following the training of therapists using a Therapist Manual developed by the authors. Four patients and two therapists participated in the study. Survey responses were transcribed into data tabulation spreadsheets for analysis. Quantitative data were analyzed using descriptive statistics, while qualitative data underwent thematic analysis. All patients reported low sleep quality and the presence of some level of anxiety, specifically anticipatory anxiety connected to sleep. Patients and therapists expressed divergent perceptions of the treatment, with patients holding positive views and expectations of improvement. In contrast, therapists presented less favorable perceptions regarding the feasibility of the intervention in terms of time and efficacy. However, despite integrity issues during the application, the intervention proved to be feasible, prompting inquiries into the specific treatment components that contributed to patient improvement. Results of the therapeutic relationship were positive for both groups. In conclusion, the intervention demonstrated feasibility despite inherent limitations. Nonetheless, the primary finding in this clinical research underscores the importance of carefully considering the perceptions and experiences of all involved parties, along with the necessity of scrutinizing preconceived assumptions and biases that may impact treatment and clinical research outcomes.

**Keywords:** sleep, insomnia disorder, cognitive behavioral therapy, feasibility studies, internet-based intervention

### VIABILIDADE DA TERAPIA COGNITIVO-COMPORTAMENTAL ON-LINE DE SESSÃO ÚNICA PARA INSÔNIA: INFORME BREVE

#### Resumo

Este informe breve apresenta resultados iniciais do estudo em desenvolvimento. O estudo tem como objetivo avaliar a viabilidade de uma intervenção de Terapia Cognitivo-Comportamental (TCC) para Insônia, de caráter on-line e em formato de sessão única. A intervenção foi feita após o treinamento dos aplicadores, via protocolo de um Manual do Terapeuta elaborado pelas autoras. Participaram 4 pacientes e 2 aplicadores. As respostas dos formulários foram transcritas para planilhas com tabulação de dados, para análise. Dados quantitativos foram analisados por meio de estatística descritiva e dados qualitativos foram analisados por meio de análise temática. Dos pacientes, todos relataram baixa qualidade de sono e a presença de algum nível de ansiedade e antecipação ansiosa ligada ao sono. Pacientes e aplicadores relataram diferenças em suas percepções quanto ao tratamento, com pacientes possuindo percepções positivas quanto ao tratamento e expectativas de melhora, e aplicadores possuindo percepções menos favoráveis quanto à viabilidade de tempo e eficácia da intervenção. Porém, a intervenção se mostrou viável, mesmo tendo falhas quanto à sua integridade durante a aplicação, o que levanta questões sobre quais componentes do tratamento promovem a melhora dos pacientes. Os resultados da relação terapêutica foram positivos para ambos os grupos. Conclui-se que a intervenção foi viável, apesar de suas limitações. No entanto, a principal descoberta encontrada nesta pesquisa clínica enfatiza a necessidade de considerar cuidadosamente as percepções e experiências de todos os envolvidos, bem como a importância de questionar suposições prévias e vieses que podem afetar o tratamento e resultados de pesquisas clínicas.

**Palavras-chave:** sono, transtorno de insônia, terapia cognitivo-comportamental, estudos de viabilidade, intervenção baseada em internet

### VIABILIDAD DE LA TERAPIA COGNITIVO-CONDUCTUAL EN LÍNEA DE SESIÓN ÚNICA PARA INSOMNIO: INFORME BREVE

#### Resumen

Este informe breve presenta los resultados iniciales del estudio en desarrollo. El estudio tiene como objetivo evaluar la viabilidad de una intervención de Terapia Cognitivo-Conductual (TCC) para el Insomnio, de carácter en línea y en formato de sesión única. La intervención fue llevada a cabo después del entrenamiento de los aplicadores mediante un protocolo de un Manual del Terapeuta elaborado por las autoras.

Participaron 4 pacientes y 2 aplicadores. Las respuestas fueron transcritas a hojas de cálculo con tabulación de datos para su análisis. Los datos cuantitativos fueron analizados mediante estadística descriptiva, y los datos cualitativos fueron analizados mediante análisis temático. Todos los pacientes informaron una baja calidad del sueño y la presencia de algún nivel de ansiedad y anticipación ansiosa relacionada con el sueño. Tanto los pacientes como los aplicadores informaron diferencias en sus percepciones sobre el tratamiento, con los pacientes teniendo percepciones positivas sobre el tratamiento y expectativas de mejoría, mientras que los aplicadores tenían percepciones menos favorables. Sin embargo, la intervención demostró ser viable, a pesar de algunas fallas en su integridad durante la aplicación, lo que plantea preguntas sobre qué componentes del tratamiento promueven la mejora de los pacientes. Los resultados de la relación terapéutica fueron positivos para ambos grupos. Se concluye que la intervención fue viable a pesar de sus limitaciones. No obstante, el hallazgo principal de esta investigación clínica destaca la necesidad de considerar cuidadosamente percepciones y experiencias de todos los involucrados, así como la importancia de cuestionar suposiciones previas y sesgos que puedan afectar el tratamiento y los resultados de la investigación clínica.

*Palabras-clave:* sueño, trastorno de insomnio, terapia cognitivo-conductual, estudios de viabilidad, intervención basada en la internet

Insomnia Disorder is one of the most prevalent sleep disorders worldwide, characterized by difficulty falling asleep or maintaining sleep, resulting in significant harm and/or suffering for the individual. It is estimated that this disorder affects 6 to 10% of the population, with the prevalence of symptoms reaching around 30%, even without a formal diagnosis. Sleep deprivation resulting from insomnia can affect all areas of life, especially relationships, physical and mental health, as well as being a risk factor for traffic accidents and metabolic and cardiovascular diseases (Edinger et al., 2021).

Cognitive Behavioral Therapy for Insomnia (CBT-I) is the recommended intervention for the treatment of Insomnia Disorders. It is considered the gold standard, with superior effects compared to drugs for chronic insomnia (Crosby & Witte, 2021). CBT-I via the Internet is the version mediated by Information and Communication Technologies (ICTs). It follows the same format of care as CBT-I (Hsieh, Rezayat & Zeidler, 2020). Single-Session Integrated Cognitive-Behavioral Therapy (SSI-CBT) is a type of therapy that aims to be focal, structured, and collaborative. It is indicated for non-clinical complaints or those of low to moderate severity (Chevalier et al., 2022; Crosby & Witte, 2021).

Thus, a clinical feasibility study was conducted on a CBT-I intervention protocol in a single-session online format. The study of this intervention format is justified by the need to offer accessible and flexible intervention options that adapt to the realities, time, and access limitations of many patients. The study aims to assess the feasibility of the intervention. In particular, the aim is to understand which aspects may affect its implementation; to document the strengths and weaknesses of the process so that adjustments can be made as necessary; and to provide guidance for future clinical trials. In this brief report, however, the initial findings will be demonstrated and communicated, particularly with regard to the procedures and initial results of the intervention.

### Method

This is a feasibility study. This type of study is characterized by occurring before pilot studies and randomized clinical trials. They are suitable for new interventions or those with little research and published material (Gadke, Kratochwill, & Gettinger, 2021).

### Participants

In total, 94 voluntary registrations were collected for the survey; however, a sample of only 4 participants, all adults of both sexes, aged 29 to 41, was used. The inclusion criteria were: a) being between 20 and 45 years old; b) presenting symptoms sufficient for diagnosis of Insomnia Disorder; c) present daytime impairment resulting from sleep problems; d) have an Internet connection to participate in the intervention; e) know how to use digital devices; and f) accept the single-consultation nature of the intervention. Some exclusion criteria were defined:

a) Insomnia Disorder must not be related to other sleep disorders of a biological nature; and b) must not be comorbid with other Mental Disorders, such as anxiety and depressive

disorders. The sample size was due to the high frequency of insomnia comorbidities with significant symptoms of anxiety and/or depression or other disorders.

### **Instruments**

The instruments for data collection involved self-administered questionnaires. The instruments were divided for collecting data from participants and therapists. For the participants, the following instruments were used: the Sociodemographic Questionnaire, the Pittsburgh Sleep Quality Index (PSQI-BR), and the Depression, Anxiety, and Stress Scale – Short Form (DASS-21). For both, the therapeutic relationship and satisfaction with the intervention were assessed using the following instruments: the Satisfaction Questionnaire, the Working Alliance Inventory (WAI) – Short Form, and the Follow-Up Questionnaire. Therapists were also given a Cognitive Conceptualization Worksheet. During the researcher's observation, a Session Structure Checklist was used.

### **Materials**

The materials used in the study were the Therapist's Manual, which had been previously prepared and validated. The manual is a material with instructions, guidelines, and information about the intervention protocol. The intervention in the manual consisted of the following components: initially, the aim was to understand how the symptoms manifested. Psychoeducation is provided on the disorder, a model of understanding and treatment, as well as the application of Sleep Hygiene. In the intermediate phase, a brief and collaborative investigation of beliefs related to sleep difficulties is conducted. Sleep habits are also investigated. The strategies used in CBT-I are applied in a personalized manner, tailored to the specific needs of each case (Sleep Restriction, Stimulus Control, Relaxation, Problem Solving, Stress Management, and Socratic Questioning). Finally, tasks are prescribed (keeping a sleep diary, informational materials on sleep hygiene, and written instructions for stimulus control), and feedback is requested and provided.

### **Procedures**

The study was conducted in 2023, in a phased format. In the first phase, participants were recruited through the research group's social networks, which the researchers personally sponsored to achieve a wider reach. Interested parties responded to self-administered instruments in online forms. In the second phase, the researcher conducted a screening based on the analysis of data from registered people, and in semi-structured individual interviews to verify whether they met the inclusion criteria. In the third phase, the intervention was applied. The therapists were two professionals with a degree in Psychology, licensed, and with ongoing specialization in CBT. The therapists were chosen based on convenience, in the researchers' region of origin. The therapists were specifically trained for the intervention, using the Therapist's Manual and answering questions. After training, the therapists did not receive any other targeted

guidance, as they were supposed to follow the manual. Questions were only answered if therapists actively asked them. The intervention applications were observed by the master's student responsible for the research. The intervention followed the SSI-CBT and CBT-I practices. The session was expected to last approximately 1 hour and 50 minutes.

### **Data analysis**

Survey responses were transcribed into data tabulation spreadsheets for analysis. All data were analyzed according to their nature. Quantitative data were analyzed using descriptive statistics. Qualitative data were analyzed using thematic analysis (Braun et al., 2022).

### **Ethical Considerations**

Resolutions 466/12 and 510/16 of the National Health Council indicate the ethical precautions necessary for health research. These were followed during the planning and implementation of the study. The study was only implemented after the research ethics committee approved the project. The project was registered under number CAAE 61310722.0.0000.5346.

## **Results**

All participants reported poor sleep quality, with scores of 9, 15, 17, and 19 on the PSQI-BR. The two female participants presented minimal anxiety, according to their DASS-21 scores. However, all selected participants reported some level of anxiety and anticipatory anxiety connected to sleep. Regarding the evaluation of the intervention, the perceptions of participants and professionals diverged. Professionals presented more negative perceptions regarding the intervention in general, mainly related to their knowledge and skills for its application, as well as perceptions of ineffectiveness or non-feasibility due to the stipulated time or the application of certain therapeutic techniques. Furthermore, professionals demonstrated maintaining a treatment structure similar to the traditional one, rather than a single-session structure. Participants presented more favorable perceptions, reporting satisfaction with the intervention they received, the treatment format, and the possibility of performing tasks. Their less favorable perceptions were related to dissemination, due to the perceived inability to reach the target audience, and the length of service. The results of the therapeutic relationship were positive for both groups.

## **Discussion**

Professional receptiveness appears to be an under-mentioned variable that influences the therapeutic process. This receptiveness refers to the flexibility and personalization of treatment, in which the professional can adapt their skills and techniques to benefit the patient. Furthermore, the professional's assessment of the predicted treatment results, how the patient will respond to the treatment, and their performance can help or hinder their practice (Gumz et

al., 2023; Nissen-Lie, Oddli & Heinonen, 2024). Regarding the intervention delivery format, specifically online and single session, it is understood that this is not a common practice. The perception of health professionals in general about online treatment seems to be characterized by the belief that it is not an effective treatment, and that there are significant differences in results when compared to traditional face-to-face treatments (Machluf et al., 2021). The results of this study align with the literature, demonstrating that the therapists considered the evaluation of the intervention less favorable, especially for techniques with which they had less experience or believed did not fit the patient's case.

It was identified that predicting patient behavior may have affected the integrity of the intervention, as well as the therapists' confidence in their therapeutic skills and the format used. Predicting patient behavior emerges as a challenge, which can diminish confidence in one's therapeutic abilities. However, for patients, the modality is seen positively, as it is accessible, flexible, and convenient. This is also the only way many will receive help, due to the stigma barrier. Furthermore, there do not appear to be major differences whether the digital service offered occurs via video call, audio, or text (Smith & Gillon, 2021).

Regarding data related to the isolated single-session modality, for the effective application of this modality, professionals need to understand and practice the assumptions of the single session during service. It is understood that this time frame is the optimal moment for intervention and change, as the patient has sought help (Hoyt, Young, & Rycroft, 2020). In the study, it was observed that the therapists applied a mix of paradigms: one focused on the here-and-now and single experience, and another on possibilities and future treatments of secondary complaints.

From the patients' perspective, the primary data found about their perceptions of the single session is that they are too concerned about getting help for their problem to worry about the format of treatment they will receive. A minority reported feeling doubts about the treatment or disbelief that it will be enough for their problem. However, after a single-session consultation, most patients reported improvement in their condition, learning strategies to put into practice, and that the care helped them and was receptive to their needs at the time (Cannistrà et al., 2020). Participants in the research demonstrated similar perceptions to those of single-session patients in the literature, even reporting a more positive experience with treatment than professionals. Furthermore, it was possible to perceive that a good mutual therapeutic relationship was developed, and that the professionals were receptive to the patients, despite not applying the ideal CBT-I techniques for treating anticipatory and sleep-related anxiety.

In conclusion, the findings of this clinical research underscore the importance of considering the perceptions and experiences of all parties involved (patients and therapists), as well as the need to question prior assumptions in clinical research. Failure to adhere to the intervention manual raises considerations for practice. The lack of application of specific techniques, such as paradoxical intention and sleep restriction, can be attributed to several reasons, including practical challenges (internet connection, previous experience with the format,

equipment, and time) and even personal interpretations by therapists regarding the relevance of these techniques. This finding highlights the importance of comprehensive training, as well as the need for flexibility in adapting techniques to each patient. Therefore, initial training may be necessary, focusing more on the skills needed to apply SSI-CBT, as well as understanding and adopting the assumptions of this format. The clinician needs to be able to distance themselves from the format commonly taught in their traditional training and understand the assumptions underlying the single-session approach, as their own beliefs may impact their confidence in their skills and ability to provide treatment. It is also essential to work on professionals' perceptions, as they can impair their ability to provide patients with standard treatment, or even promote iatrogenesis.

The study has limitations, primarily due to the exclusivity of the inclusion criteria, resulting in only four participants. Many candidates had Insomnia Disorder comorbid with other conditions. Furthermore, the therapists had no previous experience with single sessions, an uncommon format in the country, which requires greater training and initial supervision to hone skills. The lack of information due to incomplete or non-completion of questionnaires by patients and therapists suggests that the data may vary in a larger sample.

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