Comparative Effectiveness of Internet Cognitive Behavioral Therapy for Insomnia (iCBT-I) With and Without Therapist Support: Systematic Review

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Abstract: Insomnia is a health problems for adults and require long-term medication treatment. Internet based Cognitive Behavioral Therapy for Insomnia (iCBT-I) was developed as a potential alternative therapy. This systematic review aims to compare the effectiveness of iCBT-I with and without therapist support in reducing insomnia symptoms in adult participants (18 Years old). In accordance with PRISMA guidelines, we systematically reviewed ProQuest, Scopus, Ebsco, Cinahl, and ScienceDirect for randomized controlled trials (RCTs) comparing iCBT-I with and without therapist support in patients with primary or comorbid insomnia. Trials had to report quantitative sleep outcomes (e.g. sleep latency) in order to be included in the analysis. Extracted results included quantitative sleep outcomes, as well as psychological outcomes and adverse effects when available. The results is indicate that iCBT-I performed with the help of therapist was able to provide more significant results in advanced insomnia symptoms compared with iCBT-I without the help of a therapist. Thus, Supported iCBT-I is more effective than without support in reducing insomnia. Primary care providers should consider iCBT-I with therapist support as a first-line treatment option for insomnia in the future.

1 INTRODUCTION

Insomnia is a difficulty or inability to start and / or maintain sleep or wake up in the morning or night that affects the decreased ability of the function during the day or the loss of desire to perform activities

Based on the results of diagnosis using insomnia criteria obtained as much as 6-10% of the population including the group who experienced insomnia (Kaldo et al., 2015). While in other studies reported 10-30% of adult individuals experience insomnia (Blom et al., 2015). Approximately 35% -50% of adult population experience symptoms of insomnia, with a 12% -20% meeting criteria for insomnia as an abnormality and an estimated 10% -15% of adult population experience chronic insomnia (Ritterband et al., 2017).

Insomnia has an impact on the individual who experiences. insomnia is associated with low concentration levels, excessive fatigue, and impaired cognitive function. Another consequence of insomnia is an increased risk of mental disorders such as depression and anxiety, or physical disorders such as diabetes and high blood pressure. Insomnia also causes economic and social consequences such as reduced productivity, higher sick leave rates, and more accidents (Horsch et al., 2017)

There are two types of treatment to overcome the insomnia that has been use that is pharmacology and non-pharmacology. They are has different effect to insomnia. The Pharmacological management of insomnia has been shown to have a rapid effect but its effects are included in the short term than non-pharmacological management. While non-pharmacological management may have long-term effects (Blom et al., 2015).

Recognition that psychological factors play an important role in maintaining sleep disturbances has led to increased interest in the use of a cognitive behavior therapy for insomnia (CBT). CBT targets maladaptive sleep habits and irregular sleep-wake schedules, unhelpful beliefs about sleep, sleep-related worry, and attentional bias and hyperarousal (Harvey et al., 2014)

Cognitive behavioural therapy-insomnia (CBT-I) is one of the management of nonpharmacological...
therapy that has long-term effects compared to pharmacological therapy. Cognitive Behavioral therapy (CBT) and pharmacotherapy are two treatments with empirical support recommended for treating chronic insomnia (>1 month). Treating insomnia with CBT-I, as opposed to medication, has a number of potential advantages, including fewer known side effects, and an explicit focus on treating the factors that may be responsible for perpetuating chronic insomnia in an effort to produce more durable effects. Traditionally, patients practice numerous behavioral self-management assignments in order to implement lifestyle modifications that will facilitate the reduction of sleep disturbances.

Although it has benefits in the treatment of insomnia, CBT has a disadvantage that unavailability of trained cognitive behavioral therapists in many health settings so that access to health services is low and expensive. In addition, a small percentage of people with insomnia seek face-to-face treatment.

Bridging the gap between the high prevalence of insomnia and the low accessibility of trained therapists, self-help CBT has been proposed as the first choice in the model of insomnia treatment. The development of CBT self-help has reached the use of the internet as a means to conduct face-to-face CBT-I which is considered to have a better effect in patients with insomnia and can be reached by patients with insomnia. Recently, mobile, compact electronic technologies have become popular in contemporary society, and the application (app) systems on these convenient digital devices could be adapted to facilitate CBT-I. For example, by using a smartphone in conjunction with personal mobile apps, a CBT-I app accessible through a smartphone touchscreen could offer an intuitive and easy-to-use computer interface, and wireless networking could enable remote clinical data transmission (Chen, Hung, & Chen, 2016).

The primary objective of this review is to examine the most up-to-date evidence comparing ICBT-I with and without therapist support in patients with primary and comorbid insomnia and assess the comparative effectiveness of these treatments.

2 METHOD

Search Strategy
The search strategy used in the preparation of this systematic review start with the selection of topics, then determined keywords. Keywords used are Insomnia AND CBT AND Therapy AND Effect. Journal search is done on the ProQuest, Scopus, EBSCO, CinaHL, and ScienceDirect database, restrictions on journal results are published journal year limited from 2013-2018, nursing journal area and Psychology, and English language.

The search strategy using the above keywords with the restrictions used obtained 188 related journals, then do the selection on the journal and decided 8 appropriate journals. After the selection, then the journal is synthesized and then concluded as the research output.

Selection Procedures And Data Extraction
Literature selection procedure is to determine the necessary data from the literature in the review such as objectives, design / research methods, research time, research variables, and research subjects. This stage is called data extraction. After the selection and data extraction procedures are performed, feasibility tests are performed. The feasibility of this study was assessed using the PICOS approach.

Population
The study population was adults (18 years - 65 years) with insomnia or self-reported sleep deprivation occurring for 3 months or more prior to the study. The population we took was respondents who did not have chronic illness who could support sleep difficulties and did not take sleeping pills for at least 14 days before the study.

Intervention
1. Cognitive Behavioral Therapy Multi-component therapy for insomnia (CBT-I), including a combination of two or more elements, is usually considered part of CBT-I (sleep restriction, stimulus control, cognitive therapy, health education on sleep hygiene, relaxation);
2. delivered through various media or internet-based technologies;
3. Therapy is done with or without the help of a therapist.
4. respondents who get therapy with the help of therapists are regular responders to meet face to face with therapist or via telephone or other media-based internet
5. respondents who get therapy without the help of therapists are the respondents who only met the therapist to be given education about sleeping health in general and required to be able to do therapy independently with internet-based technology.
6. We did not set minimum or maximum treatment periods for study inclusion

Comparisson
We examined all RCTs comparing CBT-I with and without therapy support.

Output
Studies had to report at least one quantitative measure of sleep to be included in this analysis. These measures included sleep latency, wake after sleep onset, sleep efficiency, total sleep time, and total wake time. As secondary outcomes, standardized measures of quality of life, sleep quality and psychological outcomes including depression, anxiety and fatigue were also abstracted when available, as was data on adverse events.

Study Design
Randomized control trials (RCT).

3 RESULT

Study Characteristics
The total number of participants in the entire study was 2259 with age > 18 years and had sleep disturbance. Interventions used in all studies are multicompartmental interventions including behavioral, educational, and cognitive techniques used in CBT-I. With an average duration of therapy for 6 weeks with an average 24-week follow-up.

Of all the research most use the same measuring instrument that is: insomnia severity index (ISI), sleep efficiency (SE) and the secondary outcomes of sleep onset latency (SOL), wake after sleep onset (WASO), subjective sleep quality (SQ), Pittsburgh Sleep Quality Index (PSQI), there are two studies that have additional measuring instruments depression index and anxiety.

Quantitative Sleep Outcomes
All trials asked patients to complete sleep diaries. The evidence which compares ICBT-I with the support of telephone therapists who have significant effects with no telephone therapy support (P = 0.02), accompanied by improved quality of life in follow-up 4 months post treatment. While the other research showed significant improvements based on measuring instruments ISI, SE and the secondary outcomes SOL, WASO and SQ.

4 DISCUSSION

A review of several studies has shown that the application of Internet-based CBT-I to overcome insomnia showed significant results in primary and secondary outcomes: insomnia severity index (ISI), sleep efficiency (SE) and the secondary outcomes of sleep onset latency (SOL) wake after sleep onset (WASO), subjective sleep quality (SQ), Pittsburgh Sleep Quality Index (PSQI). The results shown lead to improvements in the quality of sleep of adult clients with sleep disorders insomnia. Improvements in the quality of sleep produced have long-term effects to the clients indicated by the quality of sleep is still good when the follow-up is done.

Treatment guidelines universally recommend cognitive behavioural therapy insomnia (CBT-I) as
first-line treatment for insomnia in adulthood (Alessi et al., 2016) Provided therapy is adopted from the CBT-I manual consisting of sleep restriction, stimulus control, cognitive restructuring, sleep hygiene, and relapse prevention. This includes relaxation and medication (Ritterband et al., 2017). In the study participants are given modules that will be studied alone, in the implementation participants can submit complaints and discussions that will be given feedback by the therapist through the facility face to face on the web (Kaldo et al., 2015).

The implementation of CBT-I, which is based on technology and internet, provides benefits such as simple setting, minimal investment, and minimal training for experienced staff in providing therapy for clients with clinical setting (Feuerstein et al., 2017). This allows for the convenience of clients in reaching health access.

In one study it was found that ICBT-I with the telephone as a form of therapist support indicated that this therapy had a good effect in changing insomnia from the client but could not prove the change in quality of life and anxiety (Ho et al., 2015). In addition, the techniques taught in CBT-I itself encouraged participants to increase pleasant activities and face feared situations, both of which could have resulted in improved scores on physical functioning and role limitations due to physical health problems (Brenes, Danhauer, Lyles, Anderson, & Miller, 2016).

This systematic review has a disadvantage in the limitations of finding studies that have particularity in examining comparisons between ICBT-I with and without the support of therapist support. In addition the researchers did not use the GRADE approach in assessing the effectiveness of the two interventions performed. The GRADE approach used to grade the evidence base for the comparisons examined in this study can help identify areas where the evidence is least robust and where additional studies can most impact our conclusions about ICBT-I. GRADE can also help identify causes for the weakness of the evidence base. So this can be an improvement for further research.

5 CONCLUSION

Research has shown that internet-based CBT-I therapy with various types of technology and assisted by therapists has a significant effect on insomnia and is more effective and efficient than ICBT-I therapy without the help of therapists. This can be used as a reference for further research tailored to the characteristics of insomnia clients in various countries.

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REFERENCES


