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REVIEW ARTICLE

Cognitive behavioural therapy for insomnia disorder: Extending the stepped care model

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Summary

Despite cognitive behaviour therapy for insomnia (CBT-I) being the first-line intervention for the disorder, it is often not readily available to patients in need. The stepped care model (SCM) represents an approach to facilitating efficient and wide-ranging provision of evidence-based care to those with insomnia. The SCM reflects a pyramid of therapeutics based on CBT-I gradually increasing in clinical intensity and addressing clinical complexity. By applying CBT-I through the SCM it is hoped that the treatment gap can be bridged such that not only more patients can be reached, but that clinical resource can be more effectively distributed, with patients receiving more tailored care as needed. Nevertheless, this should not be done at the risk of a lower quality of care being offered, and high-standard training for clinicians and scrutiny of non-clinician led interventions remains important. As national health laws within European countries have substantial differences, the application of the SCM as it relates to the treatment of insomnia may be challenged by contrasting interpretations. In order that the SCM is appropriately implemented: (a) only evidence-based CBT-I treatments should be promoted within the model; (b) clinicians involved in SCM should be suitably qualified to offer CBT in general, and have appropriate further training in CBT-I; (c) professionals involved in interventions not included in the SCM, but related to it, such as preventive and educational programmes, diagnostic procedures, and pharmacological treatments, should also have good knowledge of the SCM in order to promote correct allocation to the appropriate interventional step.

KEYWORDS
cognitive-behavioural therapy for insomnia (CBT-I), European Academy of Cognitive Behavioural Therapy for Insomnia, insomnia, stepped care model (SCM)

1 | INTRODUCTION

Insomnia disorder is prevalent, costly and a risk factor for several mental and somatic disorders (e.g., Morin et al., 2015; Perlis et al., 2022; Riemann et al., 2017). In a previous paper, we reviewed data for 25 European countries, observing a median European prevalence of 24.8% for insomnia presenting with night-time symptoms alone, 12.5% for insomnia presenting with both night-time and

daytime symptoms, and 10.1% for full insomnia diagnosis, based on diagnostic manuals (e.g., Baglioni et al., 2020). Prevalence rates for insomnia symptoms are much higher for specific populations. For example, epidemiological data suggests that approximately 20%–30% of infants, toddlers, and preschool-age children experience problems with sleep initiation and sleep maintenance (e.g., Sadeh et al., 2009). Insomnia difficulties are common during school age years and adolescence with prevalence rates up to 19.5% (Schlarb et al., 2015), and are associated with sleepiness and fatigue, as well as impaired behaviour and academic progress (Gavriloff et al., 2022). College students also appear at risk of sleep disturbance, with up to 60% of them complaining of poor sleep quality (Lund et al., 2010; Schlarb et al., 2012). Evidence suggests that older people experience insomnia more often compared to younger adults and that this is associated with a wide range of negative consequences (Benz & Johann, 2022). Women, especially during menarche, pregnancy and menopause, experience high peaks of insomnia prevalence that are often linked to consolidation of the disorder (Baglioni & Palagini, 2022). Parents of young children often report poor sleep (Parsons et al., 2023; Schlarb et al., 2015) and increased vulnerability to poor sleep health and insomnia (e.g., Baglioni et al., 2020; Schlarb et al., 2015). Patients with mental and somatic disorders report higher prevalence of insomnia, which is often associated with poorer resolution of the concomitant problem (e.g., Bjorvatn, 2022; Blom & Jernelov, 2022; Hertenstein et al., 2022; Schlarb et al., 2017). Furthermore, the recent pandemic has shown that insomnia prevalence can rapidly increase under such circumstances, while prevalence rates seem not having returned to pre-pandemic rates, even after the pandemic (Li et al., 2022; Morin et al., 2022).

Poor sleep and insomnia symptoms are not only common, but all associated with greater health risks on the somatic and psychological levels (e.g., Baglioni et al., 2011; Buysse, 2014; Grandner, 2017). Despite these problems having a significant impact on health and quality of life, poor sleep and insomnia still only receive scarce attention, and results from numerous studies indicate that they often go underdiagnosed and undertreated (e.g., Rosenberg et al., 2023).

With the publication of the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2013), insomnia was recognised as an independent disorder, warranting treatment whether it presents alone or comorbid with other conditions. This was based on several lines of research showing that the disorder follows its own course and responds to a specific intervention, namely cognitive behavioural therapy for insomnia (CBT-I). Despite this robust literature, there are still significant treatment gaps across all countries that result in few patients with insomnia disorder actually receiving the indicated first-line treatment. The stepped care model (SCM) for insomnia, proposed by Espie (2009) and Espie et al. (2013), was put forward as a model for clinical practice that should allow for widespread access to CBT-I, ensuring provision of a diverse offering of good-quality and evidence-based treatment to those with insomnia. The SCM is also discussed in a contemporary paper on disseminating CBT-I at scale (Espie & Henry, 2023). The present paper aims at detailed exploration of the SCM, in order to promote best implementation practices in different countries, in which divergent national health systems laws exists. The manuscript was written by the members of the *Steering Committee* of the *European Academy of Cognitive Behavioural Therapy for Insomnia*, a community of clinicians and research experts in insomnia and its treatment who work to promote the dissemination of high-quality evidence-based training for clinical professionals and provision of evidence-based interventions for behavioural sleep problems across Europe.

1.1 | The treatment of choice for insomnia disorder

Cognitive behaviour therapy for insomnia is indicated as the first-line intervention for the disorder by European (Riemann et al., 2017), American (Edinger et al., 2021; Qaseem et al., 2016) and Australasian (Ree et al., 2017) guidelines, according to evidence-based literature review criteria. Pharmacological treatment of insomnia should only be offered if CBT-I is not effective or available and should generally only be considered for short-term use (Riemann et al., 2017). Nevertheless, despite these strong recommendations, data from various sources indicate that at present CBT-I is offered to only a very small proportion of patients with insomnia (Koffel et al., 2018; Morin, 2016). Conversely, pharmacotherapy is still by far the most prevalent intervention for insomnia in routine healthcare worldwide (e.g., Baglioni et al., 2020). Despite growing media attention, several barriers have been identified as limiting the widespread offer of CBT-I to patients (Koffel et al., 2018). Of these, two main aspects should be considered. First, evidence has pointed out that both patients and clinicians have poor knowledge of those factors that cause and maintain insomnia (e.g., Koffel et al., 2018). From the patient's perspective, insomnia is often seen as a stable trait. As a consequence, individuals with insomnia tend not to seek help for their sleep problem. From the clinician's perspective, most clinical psychologists, psychotherapists, psychiatrists, as well as medical doctors from other specialisations, still know relatively little about the diagnosis and treatment of sleep disorders, including insomnia (e.g., Stores & Crawford, 1998). This can lead to misconceptions by both patients and clinicians about the treatment course for CBT-I (e.g., typically around 6 weeks active treatment with 1-h weekly sessions, in contrast to months of psychotherapy) (Baglioni et al., 2020; Meltzer et al., 2009). As sleep-related non-pharmacological interventions are not routinely offered in primary care, even when a patient does seek help, insomnia is often poorly evaluated, and may not even be diagnosed or treated. A second important barrier, particularly for those in countries where treatment is not provided free at the point of care by a national health service, is that psychological treatment and psychotherapy may be costly for a patient, perhaps prohibitively so. Nevertheless, as a treatment approach, CBT-I also has several advantages:

1. Compared with psychological treatment or psychotherapy for mood and anxiety disorders, which may be generally longer-term,

CBT-I is a relative short intervention with an average of six to 10 sessions (e.g., Riemann et al., 2017).

2. While short-term costs may be higher than medication, both in terms of money and clinician time, CBT-I has been reported to be cost-effective overall compared to pharmacotherapy (Natsky et al., 2020) and has a much safer and more favourable side-effect profile. It promotes the development of personal resilience and self-regulatory skills and whereas the effects of medication do not usually last beyond the treatment period, effects of CBT-I have been shown to last up to 10 years after treatment (e.g., Blom et al., 2016; 2017; Jernelöv et al., 2022).
3. As not all patients will require a comprehensive and individually tailored therapeutic intervention delivered by an expert clinician, there is the opportunity for care to be provided via the SCM (see Baglioni et al., 2020; Espie, 2009; Riemann et al., 2017). Indeed, short-term, manualised treatment protocols, or digital interventions may already be adequate for a large proportion of patients (Espie & Henry, 2023; Gao et al., 2022).

2 | THE SCM OF CBT-I

Based on the SCM proposed by Espie (2009) and Espie et al. (2013), a large number of patients with insomnia can be efficiently treated at lower levels using high-quality evidence-based CBT-I self-help programmes, including those provided by digital CBT-I (dCBT-I), booklets or audio resources. Espie and Henry (2023) place particular emphasis on how fully automated dCBT-I can serve as the catalyst for provision of guideline care at the population scale. Such approaches facilitate a better understanding by the individual of their problem, as well as effective self-treatment leading to clinically significant outcomes.

However, based on clinical judgement and depending upon treatment response, clinical complexity, comorbidity, or treatment preference, patients may be 'stepped up' to a higher level of CBT-I. These may include structured interventions, with a pre-defined number of sessions, and with each session covering important aspects of sleep health, insomnia, and the CBT-I modules themselves. These interventions may be conducted online or face-to-face, as well as individually or in groups. Finally, some patients may benefit from individually tailored CBT-I, provided by an expert clinician, including a more flexible and personal intervention structure. The SCM, therefore, reflects a pyramid of therapeutics based on CBT-I gradually increasing the clinician's time involvement and treatment intensity. In some countries, depending on the national health system, this model may reflect a pyramid of clinicians' expertise, particularly if different professionals may be qualified to practice CBT for other disorders. However, in some other countries only clinical psychologists or appropriately trained CBT therapists are qualified to deliver CBT. Stepped care makes the distribution of these resources more efficient, reserving the most expensive human resources for those situations where they are most required, and optimising the volume of patients who can be successfully and effectively treated at lower levels of care. It is not necessary that each patient tries all steps, but rather, allocation to level of care would depend on insomnia severity, complexity and comorbidity, therapist/clinician judgement and/or patient preference. Patients would therefore need to be appropriately triaged by clinicians when entering a level of care. An interesting study tested a semi-automated algorithm for early assessment of the risk of treatment failure in 251 patients undergoing dCBT-I in order to recognise those individuals who needed less therapist support and those who needed more support (Forsell et al., 2019), and found that patients at-risk of treatment failure could be identified, and that treatment outcome for these patients improved with individual adaptations. Future research should be conducted to enhance the empirical support that may guide the allocation process more effectively.

2.1 | Challenges for the SCM

The SCM opens up the possibility of offering CBT-I in different contexts and settings, to very large numbers of patients. This is a great advantage of the model, as there is a strong need to reduce the prevalence of insomnia and its negative long-term health consequences considering that most patients with insomnia go without evidence-based treatment. However, there is a risk that this expansion of provision may inadvertently result in a lower standard of care being offered, especially if those clinicians providing the treatment are not trained to appropriately high standards. As mentioned above, previous literature points to the fact that most clinical psychologists, psychiatrists and psychotherapists, who may have expertise in CBT, are generally not properly trained with respect to clinical sleep psychophysiology, insomnia aetiology, and treatment for behavioural sleep problems (e.g., Meaklim et al., 2021; Meltzer et al., 2009; Romiszewski et al., 2020; Stores & Crawford, 1998). Likewise, even certain sleep specialists, e.g., neurologists or respiratory physicians, may not have appropriate training in CBT, and may also lack knowledge regarding insomnia specifically. A licensed clinical or practitioner psychologist, psychotherapist, or psychiatrist is already qualified to see patients with mental disorders, and to take clinical responsibility for those patients based on national laws and professional regulations, and thus may be best placed to extend his or her skills into the CBT/insomnia arena. To promote the SCM within Europe effectively, there is a great need to familiarise those clinicians already qualified in CBT for other disorders with the appropriate knowledge and expertise to offer good-quality CBT-I to those patients with insomnia.

Secondly, as the importance of sleep becomes ever more apparent to the wider domains of health and wellbeing, there is a burgeoning market for sleep advice and consultancy services. Sadly, these are not always provided based on relevant high-quality training in sleep clinical psychology and sleep medicine. In the literature, for example, this has been noted for Canada relating to consultants for sleep problems in children, who are often not regulated by a governing body, nor subscribed to a code of ethics (Corkum et al., 2019). Similarly, Baumel et al. (2020) recently conducted a systematic review of user reviews related to apps incorporating relevant techniques aimed at

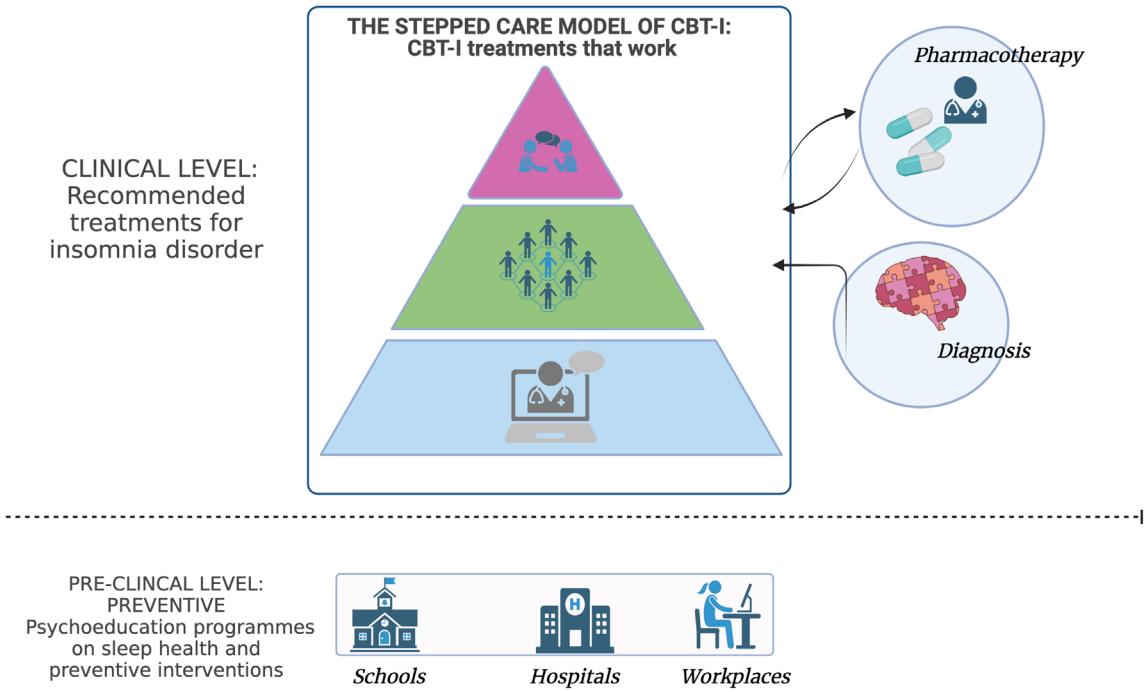

FIGURE 1 A graphical representation of the stepped care model (SCM) of cognitive behavioural therapy for insomnia (CBT-I) and of its interaction with other elements of healthcare provision (such as diagnostic assessment procedures, pharmacotherapy and preclinical interventions including sleep health psychoeducation programmes and preventive interventions for individuals at risk). Created with Biorender.com. [Color figure can be viewed at wileyonlinelibrary.com]

depression- and anxiety-related conditions, found through Google Play search. The authors compared 14 evidence-based apps versus 27 non-evidence-based apps. Results indicated statistically significant better reviews for the evidence-based apps, and, even more important, indications of possible harmful effects for the non-evidence-based apps for patients with problems of anxiety and depression. A study published by Schlarb et al. (2021) searched for sleep apps for children on the Apple App Store and Google Play Store and found 573 results. Most of these programmes included lullabies or music, while evidence-based recommendations were rare. To effectively promote the SCM within European countries, it will be important to promote and support the dissemination of evidence-based programmes, apps, and interventions for sleep.

In summary, on one hand there is a clear need to reach a large number of individuals, while on the other there is the need to offer high-quality, evidence-based clinical interventions, provided by appropriately trained and qualified professionals. Unfortunately, this is not easy to standardise because career pathways may vary and suitable expertise in clinical training may be differently defined across different countries. It is therefore important to expand the SCM in order to allow each country to implement it effectively within the boundaries of the respective national health system's laws. In order to do so, the following questions will be explored in the following sections:

1. What interventions should be included in the SCM?
2. What interventions should be outside the SCM?
3. Which clinicians should be involved in the SCM?

A summary of the considerations discussed below is provided in Figure 1.

2.2 | What interventions should be included in the SCM?

The SCM represents a pyramid of evidence-based CBT-I therapeutics, typically divided into three levels, namely a first level including primarily automated self-help interventions, a second level consisting of therapist-supported structured interventions, and a third level referring to individually-tailored therapy. The SCM is a model of evidence-based interventions based on CBT-I. All levels of intervention should follow proper diagnostic procedures, which may be included in the SCM therapeutics or may take place before assignation to one specific step of the model. The SCM is intended to be used as a framework for service design, thus flexibility and localisation of the approach is essential and the distinction in three levels is not strict (for a comprehensive review please refer to Espie & Henry, 2023).

The first level of the SCM includes self-help therapeutics that direct the patient into an interventional pathway, as well as diagnostic and treatment measures, such as sleep diaries and questionnaires. The dCBT-I, for example, has great potential here as it can reach a large number of individuals, who can schedule and follow their interventions following their own time preferences. Recent meta-analyses demonstrate the efficacy of unguided, fully automated dCBT-I, although its benefits are estimated to be lower compared to dCBT-I guided by therapist and onsite intervention (e.g., Hasan et al., 2022; Simon et al., 2023).

The second step of the model includes therapeutic programmes that may encompass the full range of CBT-I interventions, e.g., behavioural treatments, cognitive therapeutics, relaxation approaches, and even strategies directed to enhance motivation and emotional literacy. However, these are offered in relatively structured contexts. For example, manualised group therapy may require a structured setting and a closed number of sessions, and guided dCBT-I, which, although accompanied by the possibility for the patient to interact with the clinician, still follows a structured programme.

The third level of the SCM would be for those patients who need an individually tailored CBT-I treatment, which can be offered face-to-face or through online video appointments. However, it should be noted that dCBT-I may also be useful as support for practical implementation of face-to-face therapy. The role of dCBT-I in different contexts is carefully described in the paper by Espie and Henry (2023). At the third step, there would generally be a recommendation for individual therapy over group formats.

It is important to underline that in clinical practice, different cases may require a combination of different therapeutic modalities. For example, a patient who is attending an individually tailored CBT intervention for a diagnosed anxiety disorder might receive concurrent self-help dCBT-I, with the aim to maximise therapeutic outcome for both anxiety and insomnia. There is strong need for future clinical research to provide empirical support for different combinations of therapeutic pathways in cases of comorbidities.

It is important to stress that all steps of the SCM must include evidence-based CBT-I interventions. The first two steps refer to diagnostic procedures, case formulations, and interventions that are based on evidence-based clinical protocols, and which are relatively standardised rather than individually tailored. The second step, as it involves clinician or therapist contact, may include greater attention to individual aspects, but step two is still within a relatively pre-defined therapeutic structure. The third step includes diagnostic procedure, case formulations and interventions, which, although still based on evidence-based protocols, are individually tailored and personalised and therefore follow a more flexible structure.

2.3 | What interventions should be outside the SCM?

The SCM reflects clinical intensity and includes evidence-based CBT-I therapeutics at all levels of care (Figure 1). However, it is important to recognise that the CBT-I interventions included in the SCM may interact with other elements of healthcare provision, and so must be carefully thought through with regard to multi-professional involvement in a patient's care.

Pharmacotherapy: although pharmacotherapy is not indicated as first-line treatment for chronic insomnia, it may still play an important role in some circumstances. For example, some patients may benefit from an initial pharmacological intervention that is then tapered, whilst implementing CBT-I strategies in parallel (e.g., Morin et al., 2009). Others may not respond to earlier steps of CBT-I and may then be directed to CBT-I either with another provider, and at a higher level of care, or if CBT-I on the top tier of the SCM was unsuccessful, to pharmacological treatment as second-line care. Given the numbers of patients already taking hypnotics for their insomnia, many patients will need to follow a programme that involves discontinuation tapering of medication. CBT-I practitioners who are also qualified for pharmacological treatment (e.g., psychiatrists or other physicians) may conduct these interventions by themselves when needed. However, many CBT-I practitioners may not be qualified to deliver or taper pharmacological treatment, and in these cases, there is particular need for multidisciplinary working. Pharmacological treatment may interact with each step of the model and should depend on clinical case formulation for identification of the most appropriate treatment course.

Diagnosis, screening, and entry into the SCM: although some CBT programmes, including dCBT programmes, incorporate screening and diagnostic procedures, entry to the SCM will often be through referral from outside the SCM itself. In all cases, good quality procedures for establishing a diagnosis (based on adequate questionnaires, a clinical interview, etc.) and case formulation is essential for directing the patient to effective treatment. The level of entry into the SCM for a specific patient is mainly dependent on the referring clinician's judgement, which will be based on the diagnostic assessment and case formulation. For many patients, this may be a clinician outside of the SCM, such as their general practitioner (GP), or local pharmacist, particularly as there is evidence that people with insomnia tend to present to their GP more often than good sleepers (e.g., Bjorvatn et al., 2017; Linder et al., 2021). Thus, GPs may be involved in the initial diagnostic procedures and clinical decision making for what step may be appropriate for a given patient. GPs, paediatricians, educational psychologists, gynaecologists, and geriatricians are normally involved in early identification of sleep problems and diagnostics, which facilitates timely referral for appropriate treatment.

It is important to underline that when a patient with insomnia presents to any clinician, ranging, for example, from a generalist GP to a sleep-expert neurologist, the initially-indicated treatment in all cases should be CBT-I without pharmacotherapy (either prior to CBT-I or in parallel with it). Indeed, hypnotics may interfere with CBT-I, not least as intermittent hypnotics use may lead to psychological dependence, as sleep may be very dependent on the medication and natural sleep patterns may be altered. Furthermore, possible interventional changes may be confused with medication effects.

Prevention and psychoeducational programmes: while the SCM pertains to insomnia presenting at clinically significant severity, it is nevertheless important to recognise the role of prevention and support for sub-clinical sleep problems. Good quality prevention and educational programmes may help to underline the importance of sleep for health and may be helpful for some individuals with poor sleep or insomnia presenting at symptom level. Moreover, such programmes may help in the early identification of cases that should be directed toward active clinical interventions (i.e., those within the SCM). The following section focuses on this preclinical level, as well as introducing 'sleep health' as a construct that should be considered as part of public health policy and practice.

2.3.1 | Sleep health dimensions, insomnia symptoms in psychoeducational and preventive programmes

Sleep health is a relatively new concept, defined as a continuous multidimensional construct ranging from good sleep health to dysfunctional sleep (e.g., Buysse, 2014). It is understood through distinct, but related, dimensions of sleep–wake pattern, including: (i) satisfaction with sleep; (ii) alertness; (iii) sleep timing; (iv) sleep efficiency; and (v) sleep duration. The most commonly experienced sleep disorder in the general population is insomnia (American Psychiatric Association, 2013), which mainly reflects impairment in the dimensions of sleep satisfaction and sleep efficiency, although other sleep health dimensions may also be altered in the condition. In non-clinical contexts, sleep health education programmes for the general population, and preventive programmes for individuals with symptoms of insomnia, but not meeting criteria for diagnosis of insomnia, may be very important and can be promoted in several ways. These non-clinical programmes may be promoted by professionals with expertise in sleep health, sleep psychophysiology, and insomnia, as well as an understanding of the rationale for CBT-I. Experts with varying backgrounds may also be involved, including clinical psychologists, CBT therapists, medical doctors, and, in some countries, nurses, other healthcare workers, social workers, and even teachers may also be considered. Importantly, sleep education programmes could be promoted in schools, adapted for different ages, in workplaces, and in antenatal groups. Preventive programmes may also be useful to screen and identify 'at risk' cases. Apps, booklets, and audio material may prove very useful for this purpose. Promoting good quality educational and prevention programmes is very important, as such initiatives, particularly if not based on empirical literature and provided by appropriate professionals, may even be counterproductive. Non-restorative sleep and daytime sleepiness in shift workers has been effectively targeted by a Gestalt therapy-based holistic approach (Holzinger & Klösch, 2013). This programme is particularly interesting as it is directed to improve individuals' skills regarding different sleep aspects, including sleep discontinuity, but also circadian aspects, dreaming issues, and the experience of daytime sleepiness.

2.4 | Which clinicians should be involved in the SCM?

Clinicians involved in the SCM should be qualified and licensed to practice CBT as is required by each country's national health system. In practice, this may mean that there are differences in which professionals can provide CBT-I in each country. Generally, CBT-I can be practiced by professionals who are qualified and licensed to offer CBT according to the relevant national laws. Nevertheless, as mentioned above, training in sleep psychophysiology and insomnia is rarely included in CBT training more broadly. Thus, clinicians offering CBT-I should also have expertise in sleep health, diagnostics (including screening for other sleep disorders and differential diagnosis), insomnia, and central CBT-I treatment components (e.g., stimulus control therapy, sleep restriction therapy etc.). The *European Academy for Cognitive-Behaviour Therapy for Insomnia*, a Task Force of the *European Sleep Research Society* and of the *European Insomnia Network*, was established in 2018 in order to promote and standardise the provision of high-quality evidence-based treatment for insomnia disorder by CBT practitioners. The main aim of the Academy is to enable a Europe-wide system of CBT-I training and of training centre accreditation. For a complete description of the Academy's aims and initiatives please refer to Baglioni et al. (2020) and Baglioni et al. (2022). The Academy defined three levels of expertise in clinical aspects of insomnia, which corresponds to different courses' content (Baglioni et al., 2020; 2022). Importantly, the courses are not only directed to practitioners who are qualified for the SCM, but for all professionals who may be involved in all parts of the non-clinical and clinical levels of insomnia care as described in Figure 1. This is because an important issue in insomnia care is to promote professionals' knowledge in sleep diagnostics, early recognitions of cases, and in CBT-I itself. The foundation level courses aim at providing good quality training in sleep health education, diagnostic skills, and the ability to provide basic behavioural treatment. This level is intended for CBT psychotherapists or clinical psychologists with extant CBT training, medical doctors, and in some countries nurses and social workers who can provide mental healthcare. Each course's content includes information on basic sleep psychophysiology, sleep–wake regulation and associated physiological processes, cognitive and behavioural interventions for insomnia and their psychological rationale (e.g., associative learning theories), sleep health education, insomnia aetiology, and clinical formulation. The advanced level courses aim to train specialists in the full family of CBT-I interventions. The same course may be directed at both foundation and advanced levels, and it is the qualification of the participant that defines which treatment options may be prescribed and applied in their area of clinical work. Finally, the expert level courses aim to offer high-quality training for clinicians qualified to practice CBT-I who take responsibility for individually-tailored therapies as well as the training of other health professionals. This level of course is reserved for those with longer durations compared to courses at the other two levels and is eligible to appropriately qualified clinicians with specific professional interest in sleep clinical psychology and insomnia disorder. Whatever level of sleep training or CBT-I course attended and taken, the grounding principle in clinical practice should be that all therapists and clinicians work within the boundaries of their core professional qualifications and national healthcare registration.

3 | CONCLUSIONS

The European Guidelines for Insomnia Disorder (Riemann et al., 2017) clearly state that CBT-I should be the first-line intervention. Nevertheless, in European countries CBT-I is still not readily available. Additionally:

1. Many patients with insomnia do not receive treatment at all, or only receive pharmacotherapy.
2. Many patients do not receive a proper diagnosis of insomnia disorder.
3. Often GPs or other medical professionals working in primary care are not sufficiently trained in sleep and insomnia.
4. Often medical sleep specialists lack familiarity with insomnia and CBT-I.
5. Often CBT professionals are not trained in sleep clinical psychology or behavioural sleep medicine and insomnia.
6. While there is an increase in the number of dCBT programmes focusing on sleep, these may not be based on empirical evidence.

The proposed SCM for clinical practice reflects a pyramid of therapeutics based on CBT-I, that increases in treatment intensity alongside the needs of the patient. By providing CBT-I through the SCM, patients can access CBT-I in a manner that is appropriate to their clinical needs, reducing the burden on clinical services and thereby increasing their reach. Nevertheless, this should not be done at the risk of a lower quality of care being offered, and high-standard training for clinicians and scrutiny of non-clinician led interventions remains important. In order that this is the case: (a) only evidence-based CBT-I treatments should be promoted within the model; (b) clinicians involved in SCM should be suitably qualified to offer CBT in general, and have appropriate further training in CBT-I; (c) professionals involved in interventions not included in the SCM, but related to it, such as preclinical preventive and educational programmes, diagnostic procedures, and pharmacological treatments, should also have good knowledge of the disorder and of the SCM in order to promote correct allocation to the proper interventional step.

AUTHOR CONTRIBUTIONS

Chiara Baglioni: Conceptualization; supervision; writing – original draft; writing – review and editing. **Colin A. Espie:** Conceptualization; writing – review and editing; supervision. **Ellemarije Altena:** Conceptualization; writing – review and editing. **Dimitri Gavriloff:** Conceptualization; writing – review and editing. **Susanna Jernelöv:** Conceptualization; writing – review and editing. **Brigitte Holzinger:** Conceptualization; writing – review and editing. **Angelika Schlarb:** Conceptualization; writing – review and editing. **Dieter Riemann:** Conceptualization; writing – review and editing; supervision.

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CONFLICT OF INTEREST STATEMENT

Chiara Baglioni reports receiving lectures fees, consultancy fees and payment for sleep consultancy from industrial companies. She has worked as private psychotherapist in the last 36 months. Colin A. Espie reports research support from the National Institute for Health and Care Research-Health Technology Assessment (NIHR-HTA; UK) and The Wellcome Trust and receiving payments from book publishing and lecture fees. He also reports being a Co-Founder and Chief Scientist of Big Health Ltd (the developer of Sleepio). He is a shareholder of and receives salary from Big Health. Ellemarije Altena reports receiving lectures fees, consultancy fees and payment for sleep consultancy from industrial companies. Dimitri Gavriloff is the clinical director of Sleep Well Oxford Ltd, a sleep medicine clinic and consultancy. He has worked as an employee for Big Health Ltd (the developer of Sleepio), and continues to consult for Big Health Ltd. He has also received lecture fees from Idorsia Pharmaceuticals Ltd. Brigitte Holzinger reports receiving lectures fees, consultancy fees and payment for sleep consultancy from industrial companies. She has worked as private psychotherapist and teaching in rehabilitation centres in the last 36 months. Dieter Riemann is member of the Executive Board of FAVT (Freiburger Ausbildungsinstitut für Verhaltentherapie/Freiburg Institute for Behavioural Therapy; non-profit organisation). In this function he receives honoraria for running examinations, giving lectures, attending board meetings, and participating in the selection of candidates. Dieter Riemann receives royalties for authored books and book chapters from several publishing companies (Elsevier, Hogrefe, Kohlhammer. Wiley and Sons, etc.). The published materials mainly deal with insomnia and its treatment. Dieter Riemann is Editor-in-Chief of the *Journal of Sleep Research*, which is owned by the European Sleep Research Society (non-profit organisation) – he receives monthly payments for this task. Dieter Riemann frequently lectures at conferences, meetings, seminars, mostly invited by the organising bodies—sometimes honoraria are paid for his engagement and usually travel costs (if travelling is involved) are covered. Most of his talks deal with aspects of insomnia. In the last 12 months Dieter Riemann received lecturing honoraria also from Novartis and Idorsia. Dieter Riemann receives honoraria from GAIA group (Germany), Meinstresscoach (Switzerland), 7Mind (Germany) and HelloBetter (Germany) for advising on the development of internet-based approaches to insomnia treatment. Dieter Riemann receives honoraria from Idorsia as a consultant. Dieter Riemann received public research funding in the last 12 months from DFG and BMBF. Angelika Schlarb and Susanna Jernelöv report no conflict of interest.

DATA AVAILABILITY STATEMENT

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

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