

The European Academy for Cognitive Behavioural Therapy for Insomnia: An initiative of the European Insomnia Network to promote implementation and dissemination of treatment

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Abstract

Insomnia, the most prevalent sleep disorder worldwide, confers marked risks for both physical and mental health. Furthermore, insomnia is associated with considerable direct and indirect healthcare costs. Recent guidelines in the US and Europe unequivocally conclude that cognitive behavioural therapy for insomnia (CBT-I) should be the first-line treatment for the disorder. Current treatment approaches are in stark contrast to these clear recommendations, not least across Europe, where, if any treatment at all is delivered, hypnotic medication still is the dominant therapeutic modality. To address this situation, a Task Force of the European Sleep Research Society and the European Insomnia Network met in May 2018. The Task Force proposed establishing a European CBT-I Academy that would enable a Europe-wide system of standardized CBT-I training and training centre accreditation. This article summarizes the deliberations of the Task Force concerning definition and ingredients of CBT-I, preconditions for health professionals to teach CBT-I, the way in which CBT-I should be taught, who should be taught CBT-I and to whom CBT-I should be administered. Furthermore, diverse aspects of CBT-I care and delivery were discussed and incorporated into a stepped-care model for insomnia.

KEYWORDS

CBT-I, cognitive behavioural therapy for insomnia, European CBT-I Academy, insomnia, stepped-care

1 | A SUMMARY OF PRESENT GUIDELINES

In the last 2 years, four national/international guidelines have been published concerning the diagnosis and treatment of insomnia. The focus of the present article will be on treatment.

The American College of Physicians, in a series of three articles (Brasare et al., 2016; Qaseem, Kansagara, Forcica, Cooke, & Denberg, 2016; Wilt et al., 2016) and an editorial (Kathol & Arnedt, 2016), came to the conclusion that cognitive behavioural therapy for insomnia (CBT-I) should be considered the first-line treatment for all adult patients presenting with insomnia: "ACP recommends that all adult patients receive cognitive behavioral therapy for insomnia (CBT-I) as the initial treatment for chronic insomnia disorder (Grade: strong recommendation, moderate quality evidence)". Furthermore, for adults with chronic insomnia, for whom CBT-I was either unsuccessful or unavailable, a shared decision approach, which includes a discussion of benefits and costs for the short-term use of medication, was suggested.

Wilt et al. (2016), from the same series of articles, focused on pharmacological treatment and concluded that zopiclone, zolpidem and suvorexant may have a short-term positive effect on sleep outcomes in adults with insomnia, but the comparative effectiveness and long-term efficacy of pharmacotherapies are unknown. Furthermore, undesirable side-effects of hypnotic medications were stressed.

The American Academy of Sleep Medicine (AASM; Sateia, Buysse, Krystal, Neubauer, & Heald, 2017) focused exclusively on

the pharmacological treatment of insomnia and concluded that even for short-term pharmacological treatment the evidence for all investigated substances (including benzodiazepines, Z-drugs, melatonin-ergic agonists, suvorexant and others) is at best "weak".

For Europe in general and Germany specifically, independently published guidelines (Riemann, Baglioni, et al., 2017; Riemann, Baum, et al., 2017) for the diagnosis and treatment of insomnia mirror the conclusions of the American College of Physicians. Based on a thorough analysis of all meta-analyses published in the field, these guidelines stated that CBT-I should be the first-line treatment for insomnia and that pharmacological treatment should only be considered when CBT-I was unsuccessful or not available. In the UK, the British Association for Psychopharmacology (BAP) consensus statement has (since 2010) recommended that "CBT-based treatment packages for chronic insomnia, including sleep restriction and stimulus control, are effective; and should be offered to patients as a first-line treatment" (strength of evidence A: directly based on category I evidence) (Wilson et al., 2010, 2019). The BAP also stated that increased availability of this therapy is required.

Comparing these statements to earlier published guidelines (for example Schutte-Rodin, Broch, Buysse, Dorsey, & Sateia, 2008), the present guidelines reflect a complete shift in recommendations towards CBT-I as the first-line treatment, and away from the use of sleeping pills. However, as Morin (2017) in his editorial about the European guideline (Riemann, Baglioni, et al., 2017) noted, the central

challenge is the implementation of these clinical practice guidelines for the management of chronic insomnia within the various healthcare systems of Europe. Data from different sources indicate that at present, CBT-I is offered only to a very small proportion of patients suffering from chronic insomnia (e.g., Koffel, Bramoweth, & Ulmer, 2018). Furthermore, pharmacotherapy is still by far the most prevalent intervention for insomnia in routine healthcare worldwide. Given the unequivocal guideline recommendation of CBT-I as the first-line treatment for insomnia, and the fact that it is seldom available in practice, it felt timely to appoint a Task Force of the European Sleep Research Society and the European Insomnia Network with the aim of establishing a European CBT-I Academy. The Academy's aims will be to (a) define key aspects of CBT-I and (b) enable a Europe-wide system of CBT-I training and training centre accreditation. This should in turn promote the availability of CBT-I, to similar standards and with comparable levels of dissemination, across Europe. This paper summarizes the deliberations of the Task Force, including an overview of current data on the prevalence of insomnia in Europe and experts' estimation of CBT-I availability in the 12 European countries of the founding members of the Academy (Austria, Estonia, Finland, France, Germany, Italy, Norway, Poland, Sweden, Switzerland, the Netherlands and the UK).

2 | AN INTRODUCTION TO INSOMNIA DISORDER IN EUROPE: EPIDEMIOLOGY AND COSTS

Table 1 provides an overview of epidemiological studies conducted in adult populations (age ≥ 18 years) that were identified through PubMed and PsycInfo searches, using "insomnia" AND "prevalence" OR "epidemiol*" as keywords and focusing on prevalence of insomnia in European countries.

Epidemiological data for 25 European countries were identified. These studies were grouped according to whether they considered night-time insomnia symptoms exclusively, night-time plus daytime insomnia symptoms, or more conservatively, insomnia diagnoses as defined using diagnostic manuals (e.g., International Classification of Diseases (ICD)-10, Diagnostic and Statistical Manual of Mental Disorders (DSM)-IV, DSM-5, International Classification of Sleep Disorders (ICSD)-2 or ICSD-3). As can be seen, by any metric, insomnia is very common. Although estimates vary, the median European prevalence for insomnia with night-time symptoms alone is 24.8%, 12.5% for night-time together with daytime symptoms and 10.1% for full insomnia diagnosis.¹ When looking at the percentage of insomnia diagnoses across different countries, Germany with 5.7% and the UK with 5.8% seem to have the lowest percentage, whereas Norway, France and Russia, with percentages, respectively, of 20%, 19% and 23.1%, show the highest values.

Recent data from Germany (Marschall, Nolting, Hildebrandt-Heene, & Sydow, 2017), based on longitudinal epidemiological data

from more than 5,000 representative participants, indicate an increase in the prevalence of insomnia from 2009 to 2016, and a marked increase in hypnotic prescriptions. Comparing 2009–2016, the prevalence of adults who had taken hypnotic medication at least once a year increased from 13.5% to 17.3%. The intake of hypnotic medication in the last 3 months prior to investigation increased from 4.7% to 9.2% for the whole sample. Data from this detailed report indicate that 38% of adults suffering from insomnia received a recommendation for psychotherapy. However, it remains unclear what type of psychotherapy was recommended and whether it was actually received. Similar data have been published for Norway (Pallesen et al., 2001; Pallesen, Sivertsen, Nordhus, & Bjorvatn, 2014). In a Norwegian study, 80% of patients who used sleeping medications in the past reported a preference for a non-pharmacological treatment alternative (Omvik et al., 2010). However, less than 10% of these patients had actually been offered anything other than sleeping medications.

In Austria there was a report of a slight decrease in diagnoses of some sleep disorders from 1997 to 2007 (Zeitlhofer et al., 2010). However, there are no data on how many patients receive a recommendation for psychotherapy, how many actually receive psychotherapy and what kinds of psychotherapy are either recommended or provided. In this survey, only 7% of people suffering from sleep problems took medication and 6% sought psychotherapy. Furthermore, a recent study provided evidence that in Austria, awareness of certain sleep disorders in women seems to be lower than in men (Auer, Frauscher, Hochleitner, & Hoegl, 2018).

In an internet study conducted by *The Dutch Brain Foundation*, 14% of people with sleep complaints were reported to seek help from their general practitioner (GP), 5% sought the help of a psychologist or other therapist and about 4% contacted a sleep centre (van der Velden & Wester, 2015). In line with these data, it has also been reported that about 60% of the patients who received a preliminary sleep disorder diagnosis from their GP went on to receive a benzodiazepine prescription (Hoebert, Souverein, Mantel-Teeuwisse, Leufkens, & Dijk, 2012). These data suggest that only a small proportion of people with insomnia receive CBT-I in the Netherlands. Nevertheless, in the Netherlands a decrease in the use of hypnotics and tranquilizers has also been documented (Van Laar, 2017). A similar decreasing trend emerged in Finland (Kronholm, Markkula, & Virta, 2012; The Social Insurance Institution of Finland, 2016). In Sweden, around 7% of adults use sleep medication, a figure that has slowly decreased in the past 10 years (The Swedish National Board of Health & Welfare, 2018). A survey among 600 GPs (response rate, 58.7%) showed that 95% prescribed sleeping medication to their insomnia patients, even though 31% believed that sleeping medication was more harmful than the sleep problem itself. Moreover, 80% claimed that they often referred insomnia patients for CBT and 24% reported sometimes referring patients for CBT. However, details on the execution, content and quality of these CBT interventions remain unknown (Swedish Agency for Health Technology Assessment & Assessment of Social Services, 2010). In France, 53% of patients with severe insomnia who were surveyed sought help for their insomnia (Léger, Guillemineault,

¹For those studies reporting different prevalence values, e.g. for women and for men separately, the mean was calculated.

TABLE 1 Prevalence of insomnia disorder in European countries

Country	Author (year)	Sample size	% Insomnia symptoms (the presence of night-time symptoms)	% Insomnia syndrome (the presence of night-time and daytime symptoms)	% Insomnia diagnosis (insomnia diagnoses as outlined for example by ICD-10, DSM-IV, DSM-5, ICSD-2 or ICSD-3)
Austria	Soldatos, Allaert, Ohta, and Dikeos (2005) ^{#,*}	490	19.0%	9.8%	
	van de Straat and Bracke (2015) [#]	54,722 (total sample size)	20.5%		
	Zeitlhofer et al. (2010)	1,000 (women, n = 522; men, n = 478)	18%	17%	
Belgium	Soldatos et al. (2005) ^{#,*}	6,832	36.0%	16.0%	
	van de Straat and Bracke (2015) [#]	54,722 (total sample size)	27.0%		
Czech Republic	van de Straat and Bracke (2015) [#]	54,722 (total sample size)	25.0%		
Denmark	van de Straat and Bracke (2015) [#]	54,722 (total sample size)	16.6%		
Estonia	van de Straat and Bracke (2015) [#]	54,722 (total sample size)	30.5%		
Finland	Ohayon and Partinen (2002) [*]	982	37.6%	15.0%	11.7%
	Hublin, Partinen, Koskenvuo, and Kaprio (2011)	12,126	12% (daily or almost daily) 40% (weekly)		
	Kronholm et al. (2016)	4,852–6,031 (different samples over 6 years)	9.0%–9.6% (often) 40.3–45.3 (sometimes)		
	Lallukka et al. (2016) [#]	1,885 (men) 1,875 (women)	8.1% (frequent) 24.0% (occasional) 9.2% (frequent) 23.5% (occasional)		
France	Léger, Guilleminault, Dreyfus, Delahaye, and Paillard (2000) [*]	12,778	29.0%		19.0%
	Léger et al. (2011)	1,004			12.0%
	Chan-Chee et al. (2011)				15.0%–20.0%
	Beck, Richard, and Leger (2013)	27,653			15.8%
	van de Straat and Bracke (2015) [#]	54,722 (total sample size)	28.0%		
Germany	Schlack, Hapke, Maske, Busch, and Cohrs (2013)	7,988			5.7%
	Soldatos et al. (2005) ^{#,*}	2,016	17.4%	5.2%	
	van de Straat and Bracke (2015) [#]	54,722 (total sample size)	26.7%		
	Schlarb, Kulessa, & Gulewitsch, 2012	2,196	16%		7.7%
Greece	Paparrigopoulos et al. (2010)	254	25.3%		
Hungary	Novak, Mucsi, Shapiro, Rethelyi, and Kopp (2004)	12,643	47.0%		9.2%
	van de Straat and Bracke (2015) [#]	54,722 (total sample size)	28.1%		
Italy	Ohayon and Smirne (2002) [*]	3,970	27.6%		7.0%
	van de Straat and Bracke (2015) [#]	54,722 (total sample size)	16.6%		

(Continues)

TABLE 1 (Continued)

Country	Author (year)	Sample size	% Insomnia symptoms (the presence of night-time symptoms)	% Insomnia syndrome (the presence of night-time and daytime symptoms)	% Insomnia diagnosis (insomnia diagnoses as outlined for example by ICD-10, DSM-IV, DSM-5, ICSD-2 or ICSD-3)	
Lithuania	Lallukka et al. (2016) ^{#,*}	600 (men)	24.0%			
		1,002 (women)	30.0%			
Netherlands	Kerkhof (2017)	2,089			8.2% (men, 6.8%; women, 9.5%)	
	van de Straat and Bracke (2015) [#]	54,722 (total sample size)	16.8%			
Norway	Bjorvatn, Waage, and Pallesen (2018)	1,001			20.0%	
		2,001			11.7%	
	Pallesen et al. (2001), Pallesen et al. (2014)	2,000			15.5%	
	Sivertsen et al. (2009) [*]	47,000	13.5%			
	Uhlig, Sand, Ødegård, and Hagen (2014)	40,535			7.9%	
Poland	Lallukka et al. (2016) ^{#,*}	2,378 (men)	4.0%			
		3,858 (women)	7.0%			
Poland	Nowicki et al. (2016)	2,413	50.5%			
		van de Straat and Bracke (2015) [#]	54,722 (total sample size)	31.2%		
		Kiejna, Wojtyniak, Rymaszewska, and Stokwizewski (2003)	47,924 (non-institutionalized, adult respondents)	23.7%		
Portugal	Ohayon and Paiva (2005) [*]	1,858	28.1%		10.1%	
		Soldatos et al. (2005) ^{#,*}	784	21.2%	6.2%	
		van de Straat and Bracke (2015) [#]	54,722 (total sample size)	29.8%		
Romania	Voinescu and Szentágotai (2013)	588	27.6%		15.8%	
Russia	Averina et al. (2005) [*]	1,968 (men) 1,737 (women)			11.3% 34.8%	
Slovakia	Soldatos et al. (2005) ^{#,*}	502	32.0%	11.1%		
Slovenia	van de Straat and Bracke (2015) [#]	54,722 (total sample size)	22.7%			
Spain	Ohayon and Sagales (2010)	4,065	20.8%		6.4%	
		Soldatos et al. (2005) ^{#,*}	1,999	22.4%	8.2%	
		van de Straat and Bracke (2015) [#]	54,722 (total sample size)	24.3%		
Sweden	Mallon, Broman, Akerstedt, and Hetta (2014)	1,128	24.6%		10.5%	
		Ohayon and Bader (2010)	1,209	32.1% (women, 38.3%; men, 26.1%)		
		van de Straat and Bracke (2015) [#]	54,722 (total sample size)	19.0%		
Switzerland	Stringhini et al. (2015)	3,391	Women, 34.5%; men, 26.6%			
		van de Straat and Bracke (2015) [#]	54,722 (total sample size)	17.4%		
Turkey	Benbir et al., (2015)	4,758	51.0%		12.2%	

(Continues)

TABLE 1 (Continued)

Country	Author (year)	Sample size	% Insomnia symptoms (the presence of night-time symptoms)	% Insomnia syndrome (the presence of night-time and daytime symptoms)	% Insomnia diagnosis (insomnia diagnoses as outlined for example by ICD-10, DSM-IV, DSM-5, ICSD-2 or ICSD-3)
United Kingdom	Calem et al., (2012)	5,425	38.6%	13.9%	5.8%
	Ellis, Perlis, Neale, Espie, and Bastien (2012) [#]	1,095			7.9%
	Morphy, Dunn, Lewis, Boardman, and Croft (2007) [*]	2,363		37.0%	

ICD, International Classification of Diseases; DSM, Diagnostic and Statistical Manual of Mental Disorders; ICSD, International Classification of Sleep Disorders.

^{*}Data from prior to 2010.

[#]Multinational study that included other countries as well as the country of relevance.

Bader, Lévy, & Paillard, 2002) and 10.8% of adults reported regularly taking medication to sleep (Léger, Poursain, Neubauer, & Uchiyama, 2008). In an observational epidemiological survey, it was reported that, in Italy, insomnia symptoms are undertreated and GPs prefer the pharmacological approach, which is four times more frequent than any non-pharmacological therapy (78.6% vs. 18.2%, Terzano, Cirignotta, Mondini, Ferini-Strambi, & Parrino, 2006).

Insomnia is a costly condition. At present, it has been shown, on a meta-analytic level, to convey increased risks of cardiovascular diseases (Li, Zhang, Hou, & Tang, 2014; Sofi et al., 2014; Spiegelhalter, Scholtes, & Riemann, 2010), obesity and development of diabetes (Anothaisintawee, Reutrakul, Van Cauter, & Thakkinstian, 2016; Chan, Levsen, & McCrae, 2018), depression (Baglioni et al., 2011; Hertenstein et al., 2019), anxiety (Hertenstein et al., 2019) and suicide (Norra & Richter, 2013; Pigeon, Piquart, & Conner, 2012). Wickwire (2019) reported that untreated insomnia is associated with increased all-causes healthcare utilization based on a randomly selected and nationally representative sample from the USA. Norwegian studies clearly indicate that insomnia significantly predicts sick leave and disability pension (Overland et al., 2008; Sivertsen, Krokstad, Øverland, & Mykletun, 2009). In fact, insomnia has been shown to be a stronger predictor of disability pension than depression (Overland et al., 2008). In a Finnish nationally representative study it was concluded that direct costs due to sickness absence could decrease by up to 20% if sleep disturbances could be fully addressed (Lallukka et al., 2014).

In Europe, data for Germany (Thiart et al., 2016) have shown that direct and indirect costs for insomnia are around €40–50 billion annually. In France, direct costs were estimated at \$2 billion USD in 1995 (Léger, Levy, & Paillard, 1999). Indirect costs are estimated at €77 per employee per year for costs of absenteeism and €1,062 for productivity loss (Léger & Bayon, 2010; Leger, Massuel, Metlaine, & SYSPHE Study Group, 2006). Data from Sweden indicate lower direct and indirect costs of insomnia compared to Germany and France, around €325 million annually (Swedish Agency for Health Technology Assessment and Assessment of Social Services, 2010). This discrepancy between countries shows the heterogeneity of European health systems concerning insomnia care and probably

a difference in calculation of indirect costs. Similar data are also available for the USA and Canada. Annual direct and indirect costs for insomnia have been estimated to be around \$150 billion in the USA (Reynolds & Ebben, 2017), being mainly related to indirect costs such as increased healthcare utilization, poorer performance at work and enhanced risk of accidents (Wickwire, Shaya, & Scharf, 2016). A Canadian study (Daley, Morin, LeBlanc, Grégoire, & Savard, 2009) reported total annual costs for insomnia disorder alone to be around \$6.5 billion and underlined that the highest costs were for alcohol consumed as a sleep aid (58%) and consultations for insomnia (33%). The study also indicated that, similar to the data from the USA, insomnia is associated with significant morbidity in terms of health problems, health care utilization, work absenteeism, reduced productivity and risk of non-motor-vehicle accidents. Despite individual differences between countries, in all regions direct and indirect costs are a heavy burden on society and general health budgets. Data from the Sleep Health Foundation in Australia in 2017 (Adams et al., 2017; Sleep Health Foundation Report by Deloitte Access Economics, 2017) estimated that 7.4 million Australian adults experienced poor sleep, resulting in both insufficient sleep and excessive daytime sleepiness. This was associated with a cost of AUS\$26.2 billion in 2016–2017: AUS\$1.8 billion associated with health system costs, AUS\$17.9 billion associated with productivity losses, AUS\$0.6 billion with informal care costs and AUS\$5.9 billion with other financial costs. In addition to these costs, a further AUS\$40.1 billion was associated with decreases in well-being. Improving accessibility to an effective, brief and relatively low-cost treatment such as CBT-I is thus strongly warranted.

3 | AN INTRODUCTION TO COGNITIVE BEHAVIOURAL THERAPY FOR INSOMNIA (CBT-I)

Cognitive behavioural therapy for insomnia (CBT-I) largely targets those factors that may maintain insomnia over time, such as dysregulation of the sleep drive, sleep-interfering behaviours and cognitions,

attempts to control the sleep process and sleep-related anxiety. It typically consists of stimulus control therapy, sleep restriction therapy and a range of cognitive therapeutics, supplemented by psychoeducation/sleep hygiene and relaxation training (Riemann & Perlis, 2009). Table 2 summarizes the main interventional strategies included in a CBT-I protocol.

The efficacy of CBT-I for ameliorating night-time symptoms of insomnia alone or when it presents as comorbid with other mental and somatic disorders has been shown in 14 meta-analyses (Geiger-Brown et al., 2015; Ho et al., 2015; Irwin, Cole, & Nicassio, 2006; Johnson et al., 2016; Koffel, Koffel, & Gehrman, 2015; Miller et al., 2014; Montgomery & Dennis, 2004; Morin, Culbert, & Schwartz, 1994; Murtagh & Greenwood, 1995; Okajima, Komada, & Inoue, 2011; Pallesen, Nordhus, & Kvale, 1998; Tang et al., 2015; Trauer, Qian, Doyle, Rajaratnam, & Cunnington, 2015; Wu, Appleman, Salazar, & Ong, 2015). In seven meta-analyses the efficacy of CBT-I was demonstrated for daytime or comorbid symptoms (Ballesio et al., 2018; Belleville, Cousineau, Levrier, & St. Pierre-Delorme, 2011; Ho et al., 2015; Johnson et al., 2016; Koffel et al., 2015; Tang et al., 2015; Wu et al., 2015). CBT-I is as effective as sedative hypnotics during acute treatment (4–8 weeks; Smith et al., 2002) and is more effective in the long term (Morin, Colecchi, Stone, Sood, & Brink, 1999). CBT-I is associated with an average treatment effect of about 50% improvement, with large effect sizes that are reliably around 1.0 (Perlis, Jungquist, Smith, & Posner, 2005). Follow-up studies showed that CBT-I promotes stable changes for sleep onset latency and wake after sleep onset and slower but substantial improvements for total sleep time (Perlis et al., 2005).

Most clinical research on CBT-I focuses on the general adult population, including older adults. Traditionally, research has focused on recruited participants meeting criteria for insomnia but not necessarily representative of more complex or typical clinical cases. These cases might include young, working and older adults with insomnia that is comorbid with different mental and somatic disorders, paediatric populations presenting with developmental disabilities, pregnant women, women at postpartum, women going through the menopause, shift workers and those entering retirement. Recently, research has also focused on the efficacy and clinical effectiveness of CBT-I in adults whose insomnia is comorbid with a wide range of mental and somatic disorders. Findings from such studies have afforded greater confidence in the applicability of CBT-I to insomnia disorder, wherever and however it presents. Likewise, CBT-I appears to be applicable to paediatric populations, including infants, toddlers, preschoolers, school-age children, adolescents and young adults. Less evidence is available on CBT-I's applicability to some specific populations, such as pregnant women, women going through the menopause, older adults with cognitive impairment, children with developmental disabilities and shift workers.

4 | INSOMNIA: SCOPE OF THE PROBLEM AND CURRENT CLINICAL PRACTICE IN EUROPE

Although insomnia is prevalent and costly, there is a lack of investment in evidence-based first-line treatment (CBT-I). This may, in part,

TABLE 2 CBT-I ingredients

CBT-I strategy	Description
Sleep restriction	<i>Behavioural strategy:</i> A method which aims to strengthen homeostatic sleep pressure and stabilize circadian control of sleep and wakefulness, by decreasing the opportunity to sleep over successive nights. Patients are instructed to restrict their time in bed to match their average (self-report in sleep diaries) total sleep duration. The time in bed is then gradually increased until it reaches patients' optimal sleep need. An alternative method, called <i>sleep compression</i> , involves gradual constriction of time in bed, which is then similarly increased until reaching the optimal sleep need
Stimulus control	<i>Behavioural strategy:</i> A set of instructions that aim to strengthen the bed as a cue for sleep, weakening it as a cue for activities that might interfere with sleep, and helping the insomniac acquire a consistent sleep rhythm, based on operant conditioning model: (1) Lie down to go to sleep only when you are sleepy. (2) Do not use your bed for anything except sleep and sexual activity. (3) If you find yourself unable to fall asleep, get up and go to another room. Stay up as long as you wish, and come back to bed when you feel sleepy. (4) If you still cannot fall asleep, repeat step 3. Do this as often as is necessary throughout the night. (5) Set your alarm and get up at the same time every morning irrespective of how much sleep you got during the night. (6) Do not nap during the daytime
Sleep hygiene education	<i>Behavioural and educational strategy:</i> General health instructions about internal and external factors that might influence sleep (e.g., sport, light, temperature, etc.)
Relaxation	<i>Behavioural and cognitive strategy:</i> A set of methods that aim to reduce somatic or cognitive hyperarousal (e.g., progressive muscle relaxation, autogenic training, imagery training, meditation)
Cognitive reappraisal	<i>Cognitive strategy:</i> Strategies designed to reduce dysfunctional beliefs, attitudes, concerns, and false beliefs about the cause of insomnia and about the inability to sleep
Cognitive control/Worry time	<i>Cognitive strategy:</i> The patient is instructed to sit comfortably in an armchair and write down a list of worries alongside plans for the next day. The rationale of this strategy is to prevent emotionally loaded intrusive thoughts during the sleep-onset period, as all worries have been "already" processed before going to bed
Paradoxical intention	<i>Cognitive strategy:</i> Strategy aimed at reducing the anticipatory anxiety at the time of falling asleep. Patients are instructed to remain still in bed with their eyes closed and to try to stay awake as long as they can. This reduces sleep effort, which in turn often leads to falling asleep quicker

be linked to a current lack of standardization of CBT-I, such that the treatment, although generally effective, can vary considerably in content and duration from clinician to clinician. Moreover, primary care practitioners are often poorly informed on sleep disorders, which remain underdiagnosed and sub-optimally managed (Grandner & Chakravorty, 2017; Grandner & Malhotra, 2015). This is despite it being well documented that the prevalence of insomnia in primary care patients is higher than that in the general population (Bjorvatn, Meland, Flo, & Mildestvedt, 2017; Grandner & Chakravorty, 2017). In an Italian observational epidemiological survey, insomnia was reported by 64% of 3,284 interviewed patients under 738 GPs, with 20% reporting both night-time and daytime symptoms and 44% complaining of night-time symptoms only (Terzano et al., 2004).

There is a high degree of variability in both CBT-I availability and clinical administration across Europe. Alongside a severe shortage of European CBT-I experts, this variability calls for greater efficiency and standardized certification of CBT-I clinicians through examination and supervised practice of CBT-I's core evidence-based components. To address this situation, the Task Force group collected information on current availability of CBT-I education and practice in the 12 countries of the founding members of the Academy (Austria, Estonia, Finland, France, Germany, Italy, Norway, Poland, Sweden, Switzerland, the Netherlands and the UK; see Table 3).

It should be stressed that each European country has its own specific national healthcare system and there is no overarching European healthcare system at an EU level. For example, in the UK, the National Health Service (NHS) covers all medical and health-related issues. The NHS is a central health service organized by the government through the Department of Health and Social Care; everyone who lives in the UK has equal access to the NHS and its benefits and the NHS is financed by the taxpayer. In France, the healthcare system also provides universal cover for all citizens irrespective of age or socioeconomic status. The costs are covered by a combination of central government funding, employment fees and healthcare users, who generally pay a low percentage of the cost of the healthcare (e.g. medication and visits to physician) they receive. The Italian health system works in a similar manner to its French equivalent. In contrast, the German healthcare system consists of a mixture of highly regulated institutions/processes organized through the government and a semi-private system linked to hospitals and private practices. There are several hundred health insurance companies, including so-called "private" health insurance, and premiums to health insurance are paid by employers and employees on an equal basis. In Sweden, public health care, which includes CBT-I, is financed through taxes and available to all. The maximum fee paid by the individual per year for healthcare is approximately €100/person. There is a similar system for medication, which includes approved sleeping medications. In addition to the public healthcare system, a separate private system exists. Here companies often provide a "healthcare" service to their employees for problems that might be related to or might affect work performance. These "corporate healthcare facilities" quite often have "CBT therapists" (sometimes psychologists or psychotherapists, not necessarily licensed, and

usually not specifically trained in sleep medicine), who will handle sleep problems (e.g., insomnia symptoms, as these are often related to work stress and might affect work performance). Some facilities offer e-versions of "CBT-I" provided by private companies, although these are rarely evaluated or quality controlled.

Exact data for the number of patients treated with CBT-I per year were not available publicly for any of the 12 countries. In many European countries this is mainly dependent on individual psychotherapists who may offer CBT-I and for whom data are hard to estimate. Where possible, experts' estimations suggest that CBT-I is very seldom available for insomnia patients in Europe. In each country, only data from specialized clinical centres, either in hospitals or in universities, could be tracked. Via these institutions, sleep or CBT-I experts offer or could offer training for health professionals. Another complication is that countries within Europe adhere to differing professional and legal systems regulating the delivery of clinical care, including treatment of insomnia. First of all, psychotherapists, clinical psychologists, other applied psychologists with a licence to practice recognized by the national healthcare system and physicians (mainly from neurology and psychiatry) are involved in insomnia treatment. Sleep specialists in sleep centres may also be involved.

It needs to be emphasized that in many European countries GPs have a central role in health care organization and are seen as the key navigators of most healthcare systems. Thus, GPs have a pivotal role in treating patients with insomnia. Despite this, available data indicate that GPs rarely prescribe or are able to offer CBT-I to patients with insomnia (e.g., Everitt et al., 2014; Koffel et al., 2018). In the Netherlands, according to national GP standards, GPs should offer certain aspects of CBT-I. This is often delivered by a 'practice assistant' for mental healthcare at the GP's office through internet-based therapy modules. In Sweden, Norway, Finland and the UK, insomnia is mainly a primary care and/or occupational health issue and managed principally by medication. In the UK, however, digital CBT-I (dCBT-I)² is currently being piloted (2018/2019) in the southeast of England, with access made available to patients, free at the point of delivery, through NHS primary care services. In Finland, a public sleep disorder outpatient clinic that also focuses on complex insomnia cases and the delivery of CBT-I was established in 2016.

However, it is clear that most patients with insomnia in Europe are never referred to sleep centres. In any case, these centres do not typically treat insomnia, and if they do treat it, do not typically provide CBT-I. Although insomnia is supposed to be handled in primary care, in Sweden it is rarely formally diagnosed and patients who complain of sleep problems are generally prescribed sleeping medication. A few primary care centres have clinicians who can provide CBT-I, but this varies between regions, with greater access in larger city regions (similarly to the IAPT [Improving Access to Psychological Therapies] services in the UK). Some regions may offer dCBT-I. For instance, Stockholm County Public Health has an internet treatment clinic (the Internet Psychiatry Clinic), which

²Many authors use the term Internet CBT (ICBT). In this paper, we will use dCBT-I to refer to all digital internet-delivered CBT for insomnia.

TABLE 3 Current availability of CBT-I education and practice in the 12 countries of the founding members of the CBT-I Academy

Countries	How many patients have been treated with CBT-I in the last years?	Who treats insomnia with CBT-I? How many centres/therapists offer CBT-I specifically?	Who can teach CBT-I?	Who is entitled to practice CBT-I?	Reimbursement for CBT-I?
Austria	No exact data are available. However, CBT-I is certainly not sufficiently offered to insomnia patients. Estimates of 10–20 patients per year at Innsbruck Medical University; around 20 patients at the Institution for Dream and Consciousness Research, and around 10–20 in private practices and some sleep laboratories	Approx. three to five Centres for Sleep Medicine and Sleep Research, one Medical University and a few private psychotherapists	Experts in insomnia and CBT-I; sleep experts, sleep coaches, sleep coaches certified by the Medical University of Vienna	Clinical and health psychologists, psychotherapists, psychiatrists, neurologists, paediatricians, geriatricians, sleep coaches certified by the Medical University of Vienna	No reimbursement for CBT-I in the basic healthcare system. If psychotherapists offer CBT-I, it is partially reimbursed (depending on insurance)
Estonia	Approx. 1,000 patients per year	Approx. three well-established teams offer CBT-I as a component of multidisciplinary sleep disorders management. 30 CBT therapists – clinical psychologists, psychiatrists – use at least some techniques	CBT therapists (MDs and clinical psychologists) who have also had CBT-I training, about five CBT-I experts who could teach clinicians, experienced mental health nurses with CBT-I training. (four such nurses currently in practice)	Clinical psychologists, MDs who have received training in CBT and in CBT-I, mental health nurses with training in CBT-I (under supervision)	Reimbursed as psychotherapy if delivered by clinical psychologists or psychiatrists, or as a nurse's outpatient visit in public medical system; limited reimbursement in private medical system if referred by GP and psychotherapy delivered by a clinical psychologist
Finland	Approx. >1,000 patients per year	Approx. 100 occupational and public health centres (delivery by trained nurses), the Finnish Sleep Association (FSA), one to two private sleep centers and 20 private therapists offer CBT-I	About 5–10 experts could teach CBT-I to clinicians	Psychologists, psychotherapists, psychiatrists, medical doctors and nurses who have received training in CBT-I	Totally or almost totally reimbursed in public and occupational health systems and in the FSA. Partly reimbursed as part of private psychotherapy, no reimbursement in other private sector systems
France	No exact data are available. However, CBT-I is certainly not sufficiently available to insomnia patients	Estimated at about 15–30 centres in France, mostly academic hospitals with a sleep clinic	Psychologists, psychotherapists, psychiatrists and medical doctors who have received training in CBT-I	Psychologists, psychotherapists, psychiatrists and medical doctors who have received training in CBT-I	In principal, only psychiatrist treatment is reimbursed in France. However, anticipated changes may allow for psychologist treatment to be (partially) reimbursed
Germany	Approx. >1,000 patients per year	Approx. 10 sleep centres. Not possible to estimate the number of private psychotherapists offering CBT-I	Experts in insomnia and CBT-I in about 10 sleep centres around Germany	Psychologists, psychotherapists and psychiatrists	Reimbursed as psychotherapy

(Continues)

TABLE 3 (Continued)

Countries	How many patients have been treated with CBT-I in the last years?	Who treats insomnia with CBT-I? How many centres/therapists offer CBT-I specifically?	Who can teach CBT-I?	Who is entitled to practice CBT-I?	Reimbursement for CBT-I?
Italy	Approx. 300 patients in 2017. Of those treated in medical centres, the vast majority also received pharmacological intervention	Five hospital centres for sleep medicine, one university clinical centre and a few private therapists	About 15 experts could teach CBT-I to clinicians	Psychologists, psychotherapists and psychiatrists	Reimbursed by private health insurances as psychotherapy
Norway	Approx. 600 patients per year: 100 at Bergen Sleep Disorders Centre, 500 in clinical studies, mostly via guided Internet treatments	Three to four specialized centres	About 10 experts could teach CBT-I to clinicians	Medical doctors (not only psychiatrists), psychologists, nurses	Not for private clinics, but if GPs offer CBT-I, treatment is subsidized by the government
Poland	Approx. 400 patients per year	Three specialized sleep medicine centres and 10–15 CBT psychotherapists in private practices around Poland	Experts in insomnia and CBT, about 10 experts from three specialized sleep medicine centres	CBT-I trained psychologists, physicians and nurses. In practice, CBT-I is delivered mostly by CBT psychotherapists and psychiatrists	Reimbursed as psychotherapy in public mental health services; not reimbursed in other public healthcare settings and for private practices
Sweden	Approx. 2,000–3,000 in total. Approx. 1,000 of these in clinical studies, mostly via guided Internet treatments	Internet treatment providers, a few primary care facilities, a few psychologists and psychotherapists in private practice and nurses. No specialized sleep centres offer CBT-I	About 10–15 experts could teach CBT-I to clinicians, mostly psychologists	The practice of CBT is not regulated other than within the public healthcare system where CBT for any condition could be carried out by licensed personnel with adequate training. This means CBT-I can be provided by licensed CBT-I-trained psychologists, psychotherapists, physicians, psychiatrists or nurses	Within the public healthcare system, CBT-I is reimbursed in the same way as other forms of treatment. Within private practice it is reimbursed if the practitioner is linked to the public healthcare system, otherwise not
Switzerland	No exact data are available, estimate of approx. 150 patients	Approx. seven centres	About 15 experts could teach CBT-I to clinicians	Psychiatrists and psychologists	Reimbursement as psychotherapy
The Netherlands	No exact data are available. Estimated that approx. 2,000–3,000 patients receive face-to-face CBT-I	Two tertiary care sleep centres, several secondary care sleep centres, one specific sleep centre for psychiatric patients, health-care psychologists in basic mental health care, practice assistants for mental healthcare in the general practitioners office, a few internet treatment providers	Psychologists, nurse practitioners. Healthcare psychologists, clinical psychologists, clinical neurophysiologists, psychotherapists and psychiatrists	Healthcare psychologists, clinical psychologists, psychotherapists, psychiatrists, nurse practitioner, psychologists	Besides CBT-I delivered by a mental healthcare assistant at the GP there is no reimbursement for CBT-I in the basic mental healthcare system (primary care). In secondary and tertiary care sleep centres there is no reimbursement for CBT-I (there are no diagnosis-related groups for insomnia)

(Continues)

TABLE 3 (Continued)

Countries	How many patients have been treated with CBT-I in the last years?	Who treats insomnia with CBT-I? How many centres/therapists offer CBT-I specifically?	Who can teach CBT-I?	Who is entitled to practice CBT-I?	Reimbursement for CBT-I?
United Kingdom	No exact data are available	Typically provided by specialist clinical psychologists, psychiatrists and CBT therapists (both NHS and private). Although not widely provided by the NHS, a small number of specialist sleep disorders centres may provide CBT-I for some patients (e.g., Guy's and St Thomas' Sleep Disorders Centre). Some patients may also access group CBT-I through Improving Access to Psychological Therapies (IAPT) centres but not provided uniformly across all regions of the country	Appropriately trained experts in CBT-I (including clinical psychologists, practitioner psychologists, psychiatrists and other physicians), CBT therapists (psychotherapists) and nurses	Clinical psychologists, psychiatrists, and CBT therapists (psychotherapists)	Any NHS treatment is provided by the UK government. Private treatment may be covered by private health insurance providers although this is uncommon

provides CBT-I with psychologist support via the Internet and has done so since September 2017. The service includes a full psychiatric assessment and diagnosis performed by physicians or psychologists. The internet treatment is available to all Swedes over the age of 16, through the citizens' right to choose their health centre or clinic for outpatient care. Generally speaking, however, it is a challenge to provide CBT-I in primary care. In the UK, there has been some recent project-based implementation funding to offer digital (web/mobile) dCBT-I (Sleepio™) to large populations (e.g., 8 million people in London for a time-limited period). The intention behind this is to find a pathway to deliver dCBT-I to mainstream services. In France, the majority of patients with insomnia are prescribed sleeping medication by their GP, whereas a minority of patients are referred to a sleep clinic for their insomnia complaints. However, the National Sleep Foundation (SFRMS), the foundation *Sommeil et Santé* and the *Morphée Network (Reseau Morphée)* make efforts to address the needs of those with insomnia by providing treatment and specialist information online. *Reseau Morphée* even offers free treatment to severe insomnia patients in the Paris region (Londe et al., 2011; Storch, Denesle, Liyan, & Lainey, 2007). In France, group therapy is also often provided and online treatment is available (Hartley et al., 2016; Lopez et al., 2017).

Whether healthcare professionals such as nurses or social workers might play a role in providing CBT-I, as suggested in previous publications (e.g., Espie et al., 2008; Espie, Inglis, Tessier, & Harvey, 2001), remains to be investigated. In Finland, for example, CBT-I is effectively delivered by trained nurses in occupational health, showing long-term improvements in insomnia symptoms (Järnefelt et al., 2014).

Although it is clear that differences in the way that healthcare is organized across Europe are not a barrier to the ubiquitous availability of pill-based solutions, the structure of health services and associated reimbursement mechanisms may play a part in 'rationing' access to CBT-I. Likewise, because CBT-I is traditionally delivered face-to-face, the shortage of training in CBT-I represents an intrinsic limitation to the scalability of CBT-I to meet population need and demand. As shown in Table 3, dCBT-I is being used to remedy this problem in some countries (e.g., Sweden) and there are large pilot schemes investigating feasibility of widespread dCBT-I provision underway (e.g., the UK and France).

5 | PRESENT SITUATION OF CBT-I TRAINING AND ITS DISSEMINATION IN EUROPE

Table 4 summarizes current availability of CBT-I education/training in the 12 founder countries (Austria, Estonia, Finland, France, Germany, Italy, Norway, Poland, Sweden, Switzerland, the Netherlands and the UK). For some countries, such as the UK and the Netherlands, for reasons of space, no comprehensive course list is provided. Here, general information on the types of courses that are available in these countries is reported instead.

TABLE 4 Current courses offered in the 12 countries represented in the CBT-I Academy

Country	Course/s	To whom is the course/s offered?	By whom is the course/s given?	Duration of the course/s	What is taught?	Does the course include teaching on clinical adaptation of CBT-I for the lifespan or special populations?	Do the course/s include interactive teaching and/or case supervision?	What is the participation's fee? Who pays?
Austria	Medical University of Vienna Sleep Coaching Course; CBT-I courses at the Institute for Dream and Consciousness Research, the CBT Society and the Austrian Sleep Research Association	MDs, medical students, clinical and health psychologists, psychotherapists, nurses, physicians, HR personnel	Sleep and dream researchers and experts, psychologists, psychotherapists	Three-semester Sleep Coaching Course (Medical University of Vienna); 2-3-day CBT-I courses	Sleep education, sleep training, sleep hygiene, relaxation techniques including self-hypnosis and dreamwork including nightmare treatment, basics of gestalt therapy including awareness training; pharmacological treatments	Sleep Coaching Course includes sleep in the elderly, menopause and children and adolescents	The Sleep Coaching Course includes interactive teaching and case supervision	The costs of the Sleep Coaching Course are €1,500, per semester; 2-3 day CBT-I courses cost around €400; Costs are borne by participants themselves, sometimes supported by their employer
Estonia	(a) Tartu University CBT-I course (Tartu University together with Nordic Sleep Centre); (b) CBT-I course Tallinn Regional Hospital; (c) CBT-I course for nurses including other sleep disorders (Tartu University); (d) Tartu University courses on sleep disorders, including CBT-I; (e) Estonian CBT school. CBT-I session	(a), (b) & (d): MDs, psychologists, psychotherapists; (c): nurses; (e): CBT therapists in training (MDs, clinical psychologists)	(a) & (d): sleep experts, MDs, psychologists; (b): psychologists; (c): mental health nurses, sleep-expert MDs; (e): CBT therapists (sleep-expert MDs, clinical psychologist)	(a), (b) & (c): 0.1 day; (d): 2 days	(a) & (d): sleep physiology; (a)-(d) sleep education; (a), (c), (d) & (e): sleep restriction; (a), (c) & (e): stimulus control; (a) & (c): relaxation; (e): cognitive techniques in CBT-I; (a)-(d): tapering hypnotics; (a), (c) & (d): sleep disorders; (d): pharmacotherapy of sleep disorders	(a) & (c) include specific modules on adolescent and elderly insomnia and related adaptation of the CBT-I protocol for these populations	(a)-(d): no role play, supervision	About €100 for 1-day, €200 for 2-day course and €60 for 1-day nurses course. Employers or participants pay
Finland	Different courses and web-based programme to deliver CBT-based treatment in primary, secondary, and tertiary levels of healthcare	Nurses, psychologists, physicians	Psychotherapists, sleep medicine specialists, (NOSMAC, Nordic Sleep Medicine Accreditation/ESRS accreditation), psychiatrists, sleep researchers, nurses	2-3 days (16-24 hr) (some courses include clinical supervision)	Basics of sleep and sleep disorders; screening and diagnosing insomnia; pharmacological treatments; sleep education; CBT-I methods, relaxation and mindfulness techniques, hypnotic technique	Adaptation in comorbid insomnia and the menopause included. Lifespan (especially elderly) and working life perspectives (e.g. shift work) included in some courses. Special additional courses (infants, children and adolescents)	Interactive teaching, case examples, communication skills and role playing, self-governed studying (textbook), internet-based material, clinical supervision and guidance	Depends on the courses, e.g. costs of the 3-day course without supervision are about €1,000/student

(Continues)

TABLE 4 (Continued)

Country	Course/s	To whom is the course/s offered?	By whom is the course/s given?	Duration of the course/s	What is taught?	Does the course include teaching on clinical adaptation of CBT-I for the lifespan or special populations?	Do the course/s include interactive teaching and/or case supervision?	What is the participation's fee? Who pays?
France	(a) Course on managing insomnia, including CBT-I, at Université Paris Descartes. (b) Training for a national diploma in behavioural therapy in which CBT-I is part of the curriculum, by AFTCC (French Association for Cognitive Behaviour Therapy). (c) Two-day course on CBT for insomnia, with an optional 1-day course for insomnia with psychiatric comorbidities (Montrouge, S. Dagneaux)	Psychologists, psychiatrists, medical doctors	Psychologists, psychiatrists, sleep medicine specialists and sleep researchers	1–3 days depending on the course	Screening and diagnosing insomnia; pharmacological treatments; sleep education; CBT-I	Yes, for instance insomnia in neurodegenerative disorders	Yes, case studies and evaluation methods are discussed in small workshops on the course	Depending on participant status and course, between €100–1,400
Germany	(a) Course on CBT-I, including information on interventions for other sleep disorders at the Sleep Laboratory of the University of Freiburg Medical Centre. (b) Four or five institutes for behavioural therapy in which CBT-I is part of the curriculum	(a) Clinical psychologists, medical doctors, and social workers. (b) Psychologists and psychiatrists	(a) Sleep, insomnia and CBT-I experts (psychologists and medical doctors) of the Sleep Laboratory of the University of Freiburg Medical Centre. (b) Psychologists	(a) 2 days. (b) Part of the curriculum	(a) Basics of sleep–wake-regulation; screening and diagnosing insomnia; comorbidities; epidemiology and aetiology of insomnia; sleep education, CBT-I methods, relaxation, pharmacotherapy; acceptance and commitment to therapy for insomnia. (b) Basics of sleep–wake-regulation; screening and diagnosing insomnia; CBT-I methods	(a) Comorbid insomnia. (b) no	(a) Yes, communication and role playing. (b) no	(a) 400 Euro. (b) part of the curriculum

(Continues)

TABLE 4 (Continued)

Country	Course/s	To whom is the course/s offered?	By whom is the course/s given?	Duration of the course/s	What is taught?	Does the course include teaching on clinical adaptation of CBT-I for the lifespan or special populations?	Do the course/s include interactive teaching and/or case supervision?	What is the participation's fee? Who pays?
Italy	(a) Intensive 1-year CBT-I course at "Sapienza" university of Rome since 2018. (b) Annual CBT-I courses offered during the Italian Sleep Medicine Congress since 2015. (c) Annual courses hosted by the University of Pisa Psychiatric Clinic, Department of Neuroscience: each year (September/October) since 2015	(a) Psychotherapists, psychotherapists, medical doctors during training to become a specialist/psychotherapist. (b) Neurologists, psychiatrists, pneumologists, child and adolescent psychiatrists, physicians, psychologists. (c) neurologists, psychiatrists, pneumologists, child and adolescent psychiatrists, physicians, psychologists	(a) Psychotherapists, psychologists, medical doctors who are experts in sleep, insomnia and CBT. (b) Psychotherapists, psychologists, medical doctors, psychiatrists, child and adolescent psychiatrists who are experts in sleep and insomnia research and are part of the association of the Italian sleep medicine society. (c) Psychotherapists, psychologists, medical doctors, psychiatrists, child and adolescent psychiatrists who are experts in sleep and insomnia research and are part of the association of the Italian sleep medicine society	(a) 12 modules of 8 hr each distributed in 1 year. (b) 2 days. (c) 1 and a half days.	(a) Basics of sleep and sleep disorders; psychophysiology of insomnia; screening and diagnosing insomnia; pharmacological treatments; sleep education; CBT-I methods, relaxation, mindfulness techniques, techniques from acceptance and commitment therapy; insomnia across the lifespan; basic and clinical aspects; efficacy and limitations of CBT-I. (b) Basics of sleep and sleep disorders; psychophysiology of insomnia; screening and diagnosing insomnia; sleep education; CBT-I method. (c) Basics of sleep and sleep disorders; psychophysiology of insomnia; screening and diagnosing insomnia; sleep education; CBT-I methods practice sessions, how to apply CBT-I	(a) The course teaches CBT-I for the lifespan (infants, children, adolescents, the elderly); specific women's lifespan (pregnancy, menopause); mental and somatic comorbidities. (b) All the courses have been on a theme and addressed CBT-I across the lifespan (i.e., infants, children, adolescents, the elderly), and in those with mental health and somatic comorbidities. (c) All the courses have been on a theme and addressed CBT-I across the lifespan (i.e., infants, children, adolescents, the elderly); also women's specific complexities (pregnancy, the menopause); mental health and somatic comorbidities, and other sleep disorders as comorbidities	(a) Yes, the course is highly interactive including interactive teaching, role playing, and case supervision. (b) and (c) Yes, the courses include interactive teaching and activities	(a) €1,500. (The fee is payed by the participant or supported by any public or private institution; credits may be recognized for other courses (e.g. masters degree, specialization school, etc.) (b) €100/day with a discount for AIMS meeting participants (c) €100/day

(Continues)

TABLE 4 (Continued)

Country	Course/s	To whom is the course/s offered?	By whom is the course/s given?	Duration of the course/s	What is taught?	Does the course include teaching on clinical adaptation of CBT-I for the lifespan or special populations?	Do the course/s include interactive teaching and/or case supervision?	What is the participation's fee? Who pays?
Norway	One annual course in sleep medicine, in which the focus is on CBT-I. In addition, several other courses (three to five at least) given annually provide information about CBT-I to clinicians	Health professionals: GPs, psychiatrists, psychologists and other medical specialists (neurology, clinical neurophysiology, thoracic medicine, ENT), medical and psychology students at the University of Bergen	Most courses are given by Norwegian Competence Center for Sleep Disorders and/or the universities by a medical doctor and a psychologist	2-days	Sleep medicine, CBT-I methods	Yes	Yes	About €300 for a 2-day course
Poland	CBT-I training during comprehensive CBT course	Psychologists, physicians	Teaching centres accredited by Polish Association for Cognitive and Behavioural Therapy	Obligatory 10 hr of theoretical education in CBT-I for all participants. Additionally, possibility of supervision, clinical training and guided self-education for those interested	CBT-I methods	Only basic CBT-I protocol is taught, literature for CBT-I protocols in special populations (comorbid insomnia, childhood, elderly patients) is provided	Only for participants interested in sleep medicine	The fee is paid by the participant for the whole CBT course (approx. €9,000 including supervision), it is not possible to take part in CBT-I training only

(Continues)

TABLE 4 (Continued)

Country	Course/s	To whom is the course/s offered?	By whom is the course/s given?	Duration of the course/s	What is taught?	Does the course include teaching on clinical adaptation of CBT-I for the lifespan or special populations?	Do the course/s include interactive teaching and/or case supervision?	What is the participation's fee? Who pays?
Sweden	At least some CBT-I training is normally included in the university-level psychologist programmes for students on the CBT-track. Two-day courses in CBT-I are offered on an irregular basis by private and public institutes	Psychologist students	Psychologists/sleep researchers, experts in CBT-I	On the psychologist programmes, between 0.5 and 3 days specifically for sleep and CBT-I, in addition to the general and specific CBT training within the programme	Example from Karolinska Institutet psychologist programme: Basics of sleep-wake regulation, function of sleep, psychoneuroimmunology of sleep, screening and diagnosing insomnia; specific CBT-I methods (sleep diary use, sleep restriction, stimulus control); how to use general CBT techniques in the context of insomnia (relaxation, cognitive techniques, mindfulness, etc.); the evidence base for CBT-I; limitations of CBT-I; information on pharmacological treatments and medication tapering within CBT-I	Focus on basic CBT-I. Within the Karolinska Institutet psychologist programmes, lectures/discussions on adaptations of CBT, but not specifically on CBT-I	All psychologist students have supervised clinical work with a small number of patients. Many see at least one patient with sleep problems (insomnia) as part of their problem	No fee, part of the curriculum for the psychologist programme. Private 2-day courses €300–600
Switzerland	Currently no official CBT-I course is offered in Switzerland	Psychology students, psychologists, GZ-psychologist, clinical (neuro) psychologists, psychiatrists, nurse practitioners, GP's	Sleep specialists (GZ-psychologist or somnologists)	Mostly 1–2 days	CBT-I rationale and methods Insomnia diagnostics as well as screening/characteristics of other sleep disorders	Briefly	Interactive teaching, role playing, supervision on own cases possibility for intervention after course, Videos	Ranging from €245 to 600 The participant, or the employer may pay part of the total cost of the education program
The Netherlands	Several courses are delivered at tertiary care sleep centres In-company training delivered by sleep specialists for third-party education institutes Courses within the curriculum of a psychology Master's degree or post-Master's training Sleep street training for GP's; a programme which aims to instruct GP's and practice assistants for mental healthcare to evaluate and treat insomnia (complaints) in primary care. The programme has been developed by several (healthcare) organizations	Psychology students, psychologists, GZ-psychologist, clinical (neuro) psychologists, psychiatrists, nurse practitioners, GP's	Sleep specialists (GZ-psychologist or somnologists)	Mostly 1–2 days	CBT-I rationale and methods Insomnia diagnostics as well as screening/characteristics of other sleep disorders	Briefly	Interactive teaching, role playing, supervision on own cases possibility for intervention after course, Videos	Ranging from €245 to 600 The participant, or the employer may pay part of the total cost of the education program

(Continues)

TABLE 4 (Continued)

Country	Course/s	To whom is the course/s offered?	By whom is the course/s given?	Duration of the course/s	What is taught?	Does the course include teaching on clinical adaptation of CBT-I for the lifespan or special populations?	Do the course/s include interactive teaching and/or case supervision?	What is the participation's fee? Who pays?
United Kingdom	Several workshops and brief training days on CBT-I are offered throughout the UK. Most are offered on an ad-hoc basis through the individual NHS trusts, psychological therapy training institutes and associations (e.g., BABCP) and universities (e.g. University of Oxford Online Course in Sleep Medicine contains one module on insomnia; teaching modules on doctoral training courses for trainee clinical psychologists)	Clinical psychologists, CBT therapists, medical doctors, and other health professionals	Typically, clinicians with expertise in CBT-I (principally clinical psychologists and psychiatrists)	Mostly 1 or 2-day workshops	May include information on sleep-wake regulation, models of insomnia and diagnostic criteria, CBT-I components (e.g., SRT titration, SCT instruction) and rationale for treatment; case studies and role plays; screening for other sleep disorders	May do but training seems focused principally on adult and older adult patient populations	Some courses may include role plays and case examples. Supervision is generally done within clinical teams themselves and is not by and large organised/offered through these courses	NHS employees may be able to access training at no personal cost through their NHS trusts. Private and university run courses will vary in their pricing

Several CBT-I courses are currently offered in European countries. These are generally given in sleep centres or universities and offered to psychologists, specialist physicians and psychotherapists, although GPs, nurses and/or other health professionals may also be included. Other than in Norway (one 2-day course), no courses specifically for GPs are offered. Trainers are sleep experts, both psychologists and medical doctors, or CBT experts with knowledge of insomnia. Most courses last approximately 2 days and teach core aspects of CBT-I, including CBT-I strategies and the basics of insomnia and other sleep disorders. The courses often include a module on pharmacological treatment. Three courses have a long duration, one specifically on CBT-I, one including different aspects of psychological treatment for sleep disorders and one as a module of a Sleep Medicine graduate programme. In Italy, an intensive 1-year CBT-I course has been offered at the "Sapienza" University of Rome since 2019. The course includes 12 modules (covering basics of sleep and sleep disorders, screening and diagnosis of insomnia, pharmacological treatments, sleep education, CBT-I methods, relaxation, mindfulness techniques, techniques from acceptance and commitment therapy, insomnia across the lifespan: basic and clinical aspects, insomnia across women's lifespan: basic and clinical aspects, and efficacy and limitations of CBT-I) of 8 hr each, distributed over 12 months. In Austria, a three-semester Sleep Coaching Course is offered at the University of Vienna. The course includes modules on sleep education, sleep hygiene, relaxation, self-hypnosis, dream intervention (including treatment of nightmares), basics of Gestalt therapy (including awareness training) and pharmacological treatment. Finally, at the University of Oxford in the UK, an online 2-year part-time MSc/PgDip in Sleep Medicine was established in 2016. One of the eight modules is on insomnia, with an emphasis on CBT-I as the preferred intervention. As well as the CBT-I module being available online as "standalone" CPD (continuing professional development), the University of Oxford also offers a 2-day CBT-I masterclass course delivered in person. All courses listed in Table 4 include some form of interactive teaching and some of them provide case supervision. The fee is generally paid by the participants. The list provided in Table 4 is not, however, comprehensive as it is currently difficult to gain a clear overview of all CBT-I trainings offered across Europe. Furthermore, current provision is not yet sufficient and varies consistently across countries. Current courses do not yet address the different levels of competencies between professionals in terms of both administering and being able to teach CBT-I. A main objective of the CBT-I Academy is to promote a coordinated European system of CBT-I training, which will be formed of specialist CBT-I practitioners and trainers. Furthermore, the Academy aims to compile information on current CBT-I offered in Europe and to provide a comprehensive list of accredited courses.

6 | THE CBT-I ACADEMY

The Task Force group of the European Sleep Research Society and the European Insomnia Network met in May 2018 in Freiburg (Germany)

and developed this outline proposal to establish the European CBT-I Academy to enable a Europe-wide system of homogeneous CBT-I training and training centre accreditation. Deliberations concerned: ingredients of CBT-I, how CBT-I should be administered, how to integrate CBT-I training into European healthcare systems, preconditions and qualifications for health professionals to teach CBT-I, the way in which CBT-I should be taught and to whom it should be taught.

6.1 | Ingredients of CBT-I

CBT-I should be defined as a family of evidence-based interventions, including behavioural, cognitive and educational interventions. Just as pharmacotherapy is a methodology with many drugs, CBT-I is a system of therapy, not a single therapy. This suggests that the term CBT-I is used as a convenient label but that treatment could include different evidence-based psychological interventions, such as motivational and emotional strategies, which are currently less well defined or standardized. Recently, other psychotherapeutic approaches, such as mindfulness and hypnotherapy, centring on powering emotion-regulation skills, have been empirically investigated (Gong et al., 2016; Kanen, Nazir, Sedky, & Pradhan, 2015; Lam et al., 2015) and acceptance and commitment therapy has been proposed as a possible intervention for non-responders to CBT-I (Hertenstein et al., 2014). Together with the main strategies listed in Table 2, knowledge on sleeping medication tapering or withdrawal should be considered a component of CBT-I. The insomnia research literature provides a strong evidence base, with proof of efficacy and clinical effectiveness, both for multicomponent CBT-I and also for single components, such as sleep restriction, stimulus control and relaxation therapies, and to a lesser extent cognitive therapies. The decision as to whether to apply CBT-I as a 'package' intervention or as individual components should be at the discretion of expert clinicians or defined in a stepped-care model, as discussed in the next paragraph.

6.2 | How CBT-I should be administered

6.2.1 | A stepped-care approach to insomnia

In order to increase the likelihood of sufficient evidence-based therapeutic provision for insomnia across Europe, we suggest the adoption of a stepped-care approach inspired by the model proposed by Espie (2009) and Espie, Hames, and McKinstry (2013). This model promotes the idea that the greatest numbers of patients could be managed through readily accessible self-help therapies, including dCBT-I via the internet and mobile devices, as well as books and audio resources. There is now a substantial evidence base for dCBT-I and such approaches have been incorporated into clinical guidelines (e.g., Wilson et al., 2019). Dependent upon treatment response, clinical complexity and/or treatment preference, patients may be 'stepped-up' to a more time and resource-intensive level of CBT-I; for example, including manualized treatment delivered by trained therapists. Three further

steps are suggested in the model, gradually increasing the expertise of the therapist and adaptation of the intervention to the needs of the patient. These three steps range from "individual or small group CBT delivered by a graduate psychologist" to "individually tailored CBT delivered by a clinical psychologist" to "expert CBT delivered by behavioural sleep medicine expert". The purpose of the stepped-care model is twofold: first, to help individual patients find the best approach for them, and second, to develop a high-quality service at a population level that is both effective and economically viable.

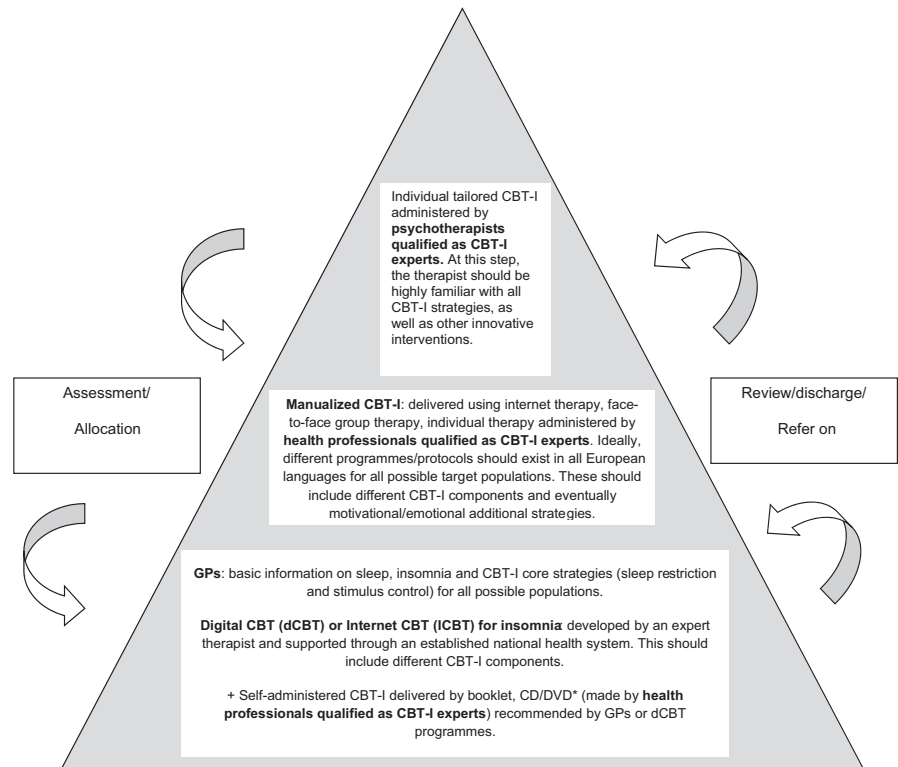
Here we propose a simplification of the model proposed by Espie (2009) and Espie et al. (2013), which could be adapted for use within a given national health system. A first level includes prescriptions from GPs for behavioural treatment of insomnia or evidence-based dCBT-I developed by an expert therapist and promoted by well-known health systems. It could be that the GP or other professional recommends, or in some way 'prescribes', this solution; or it could be that the responsible health authority (such as the NHS in the UK) promotes ready access even more directly. The clear intention, however, would be to develop services in such a way that CBT-I becomes available at a scale equivalent to medication. The important point is that patients and their GPs would have immediate access to CBT-I. Of course, this is an ideal model, would take time to develop and will initially be based, where a clinician is involved, on appraisal of the patient's needs, preferences about formats of engagement, as well as what is on offer locally. Ideally, such an insomnia care pathway would also involve patients somehow being reviewed after 4–6 weeks to ascertain their degree of treatment response.

Based on patients' response to this initial step (GPs' prescriptions or dCBT-I), complexity or patients' preference and what is available locally, two higher levels of treatment are then suggested: (a) manualized CBT-I delivered by a trained therapist, either face to face or via the internet in small groups, or (b) individually tailored therapy delivered by a CBT-I expert face to face individually or through group therapy. The use of dCBT-I programmes could also be useful in these stages because one goal of CBT is to enable patients to implement effective therapy components at home in between traditional treatment sessions. The stepped-care model, therefore, reflects a pyramid of therapeutics gradually increasing the level of therapist/clinician expertise and time commitment. Stepped care therefore conserves these most expensive of human resources for those situations where they are most required, whilst optimizing the volume of patients who can be successfully and effectively treated. It is not necessary that each patient tries all steps, but rather the allocation to the best-fitting therapy would depend on insomnia severity or complexity, therapist/clinician judgement and/or patient preference. The model is summarized in Figure 1.

6.3 | How to integrate CBT-I training into the healthcare systems in Europe?

It is clear that, given the heterogeneous situation of healthcare in Europe, no unified training model can be proposed. We will,

FIGURE 1 An evidence-based stepped-care model for CBT-I.



instead, suggest an ‘ideal’ generic model, which has the potential to be adapted to the healthcare system of each respective European country.

Here we provide a brief overview of what has been published to date about how to integrate CBT-I into general healthcare. In Appendix 1, a list of relevant publications directed at the general population in different European languages is provided.

Perlis and Smith (2008) speculated upon how to make CBT-I services more widely available, with a focus on the USA. Their approach led to the establishment of a behavioural sleep medicine specialty within the broader sleep medicine field. The behavioural sleep medicine provider is able to offer CBT-I, alongside other behavioural sleep treatments and expertise, and is affiliated to AASM-accredited sleep centres (Perlis & Smith, 2008). Curricula for CBT-I are developed and endorsed by the AASM and the BSM Committee. The authors recommended the development of intensive training opportunities for CBT-I. When one considers the ubiquitous availability of second-line treatments such as hypnotics (numbering billions of prescriptions worldwide), it is clear that CBT-I has a very long way to go to offer patients the choice of an alternative treatment path.

It is our suggestion that, in Europe, the CBT-I Academy should not be exclusively tied professionally to the field of sleep medicine. Rather, and necessarily, there should be strong connections to the field of cognitive and behavioural psychotherapy/psychiatry. Thus, expert providers of CBT-I would by definition already be health professionals with a recognized license to provide clinical psychology/psychotherapy/mental healthcare, but who have further to that obtained qualification and the associated supervised education and practice in sleep medicine and sleep clinical psychology. That

is, CBT-I clinicians should be also fully licensed and insured for all of their working healthcare practice and should practice within the boundaries of their professional training. The important caveat here is that a CBT-I practitioner must already possess a license to practice clinically, and that simply undertaking a CBT-I course does not in itself confer a license to see patients.

There is a parallel here with medical management in that a licensed physician is intrinsically qualified to prescribe medication, including that not yet developed or distributed, but is likely to require further orientation to and training in a particular therapy or therapeutic approach. In the same way, a licensed clinical or practitioner psychologist, psychotherapist or psychiatrist is already qualified to see patients and to take clinical responsibility based on their national laws and professional regulations, and is best placed to extend his or her skills into the CBT/insomnia area.

6.4 | Preconditions for health professionals to teach CBT-I

One aim of the CBT-I Academy is to establish a qualification procedure; that is, professionals intending to practise CBT-I should be adequately trained. This academy approach would be expected to facilitate an increase in the number of health experts in CBT-I, to improve focus on effective clinical practice in insomnia care and to reduce treatment variability across clinicians. In order to inaugurate the academy, at the end of 2017 interested insomnia expert clinicians and members of the European Insomnia Network (EIN) were invited by e-mail to take part in the initiative. Attendees worked

together to prepare the present manuscript (the authors of this paper). At the first Academy meeting, which took place in Freiburg, Germany, on May 4th, 2018, the authors of the present paper and founding members of the Academy were declared first-generation trainers (“grandmothers and grandfathers”) qualified as CBT-I trainers and practitioners. Figure 2 provides a list of the founding members of the Academy. A Steering Committee was elected during the inaugural Freiburg meeting, comprised of two chairs (D.R. and C.A.E.) and five members (E.A., C.B., S.J., A.S. and B.H.). The CBT-I Academy Steering Committee will have the task of reviewing and approving course proposals, creating a European register of CBT-I practitioners (by merging data from national registers; see below) and coordinating new initiatives to promote CBT-I education across Europe.

We assume that until this point no European country has a governing body controlling whether or not somebody is competent to practice CBT-I. On the other hand, most European countries have governing bodies controlling who is permitted to practise clinical psychology or psychotherapy, or to call themselves a psychotherapist. In establishing the CBT-I Academy our starting assumption is that eligible individuals have a legitimate license to practice in a clinical context. That is, CBT-I skills can only be an extension of a person's practising certificate. It is that certification (e.g., as a physician, clinical psychologist, health or practitioner psychologist, or psychotherapist) that provides the governance structure enabling a person to see patients, and thus to be regulated as a professional in their country of practice. The first-generation European trainers all meet these criteria, in addition to which they have recognized expertise in CBT-I, being members of the European Insomnia Network (EIN). Moreover, the foundation of the Academy could benefit from the collaboration with world-leading experts in CBT-I from the USA. The founding members have been selected as European representatives; they also represent and are in close contact with other

well-established CBT-I professionals in their respective countries. Further first-generation CBT-I expert clinicians and trainers could be added to the Academy if they are established CBT-I clinical professionals with widely recognized expertise in CBT-I clinical and research aspects and are sponsored by the founding members.

Second-generation CBT-I expert clinicians and trainers will be health professionals who (a) have a licence to practice clinically and (b) have attended an accredited CBT-I course. Thus, they will be able to practise CBT-I as a form of psychological treatment.

Ideally, three levels of expertise should be considered.

1. *Expert level:* This level of expertise would allow licensed health professionals to be expert CBT-I practitioners, who are able to conduct individually tailored CBT-I. This level of expertise is suited to clinical and healthcare psychologists, psychotherapists, psychiatrists and sleep experts whose CBT-I expertise is core to their professional clinician level knowledge. They would be expected to have attended a high-quality, certified course, endorsed by the Academy, and have followed at least three cases over the course of 3–6 months under the guidance of a CBT-I qualified expert. CBT-I practitioners with certificated knowledge in sleep medicine and sleep clinical psychology could operate also as CBT-I trainers and supervisors.
2. *Advanced level:* This advanced level of expertise would allow health professionals to be trained therapists who could conduct manualized CBT-I delivered face to face or digitally, under the supervision of an expert-level CBT-I supervisor. This level of expertise would be suited to clinical and health psychology master's graduates and psychiatrists in training and, in some countries, nurses or social workers. To be entitled to an advanced level of expertise, practitioners would be expected to have attended a certified course, endorsed by the Academy, including interactive and supervising activities.

THE EUROPEAN CBT-I ACADEMY: AN INITIATIVE OF THE EUROPEAN INSOMNIA NETWORK



STEERING COMMITTEE

Chairs: Dieter Riemann (Germany), Colin A. Espie (UK).

Members: Ellemarije Altena (France), Chiara Baglioni (Italy, Germany), Susanna Jernelöv (Sweden), Angelika Schlarb (Germany), Brigitte Holzinger (Austria).

First (founding) members of the CBT-I Academy: Ellemarije Altena (France), Chiara Baglioni (Italy, Germany), Bjørn Bjorvatn (Norway), Kerstin Blom (Sweden), Kristoffer Bothelius (Sweden), Alessandra Devoto (Italy), Colin A. Espie (UK), Lukas Frase (Germany), Dimitri Gavriloff (UK), Tuuliki Hion (Estonia), Andrea Hoflehner (Austria), Brigitte Holzinger (Austria), Heli Järnefelt (Finland), Susanna Jernelöv (Sweden), Anna F. Johann (Germany), Caterina Lombardo (Italy), Christoph Nissen (Switzerland), Laura Palagini (Italy), Geert Peeters (The Netherlands), Dieter Riemann (Germany), Angelika Schlarb (Germany), Kai Spiegelhalter (Germany), Adam Wichniak (Poland), Birgit Högl (Austria).

Non-European Members: Michael L. Perlis (USA), Donn Posner (USA).

FIGURE 2 List of founding members of the European CBT-I Academy.

3. *Foundation level*: This level of expertise is specifically suited to GPs and should reflect more basic knowledge of CBT-I behavioural strategies and sleep medicine obtained through attendance at a CBT-I Academy certified course.

The Academy will identify these three levels of expertise by classifying endorsed courses following this three-level categorization. As a consequence, trained CBT-I practitioners, depending on the course(s) attended, will then be recognized by the Academy as CBT-I practitioners at the expert, advanced or foundation level of expertise. After publication of this paper, the Steering Committee will create a register and an associated website containing all the relevant information on the processes and initiatives of the Academy. In this way, the registered list of founding, first-generation and second-generation members, their qualifications and their levels of CBT-I expertise will be in the public domain.

6.5 | The way in which CBT-I should be taught

Table 5 summarizes the CBT-I course criteria identified by the Academy. Courses for aspiring CBT-I practitioners of any level should be of a minimum of 2 days in duration and may be offered to people with pre-existing qualifications in different healthcare areas with a recognized licence to see patients in mental healthcare contexts. Courses should include teaching on sleep itself, on insomnia disorder and its assessment, as well as on core CBT-I components (such as behavioural and cognitive intervention) and additional CBT-I components (such as emotional and motivational strategies). Courses directed at a foundation level of expertise may focus specifically on CBT-I behavioural components. Courses should include conceptual elements covering sleep mechanisms and pathophysiology; theoretical underpinnings of insomnia development and maintenance; formulation of CBT as an intervention. The stepped-care model of insomnia service delivery may be also taught. Courses should cover basic principles of CBT therapy. A module on sleep medication and tapering off/withdrawing medication should be included. Depending on national laws, some health professionals may be prohibited from discussing any change in medication status with patients as they do not have the necessary professional competences. Nevertheless, any health professional dealing with patients with insomnia at a clinical level should be aware of sleep medication mechanisms and effects during intake and withdrawal. Courses should be organized to be interactive (e.g., role playing, work in small groups and difficult situations) and case supervision should be offered. It is possible that some elements of the CBT-I programme could involve interactive training and be offered online.

For the expert level, courses should comprise extensive teaching of the individual tailoring of treatment, advanced knowledge on sleep medicine, insomnia and CBT principles, and clinical experience (e.g., at least three case studies), and either have a long-term duration or include a follow-up/refreshers course to discuss cases.

Trainers should all be expert-level CBT-I professionals.

TABLE 5 Template for criteria of European courses for CBT-I, which will be supported by the Academy

Courses which will provide a European Certification for CBT-I practitioners

Duration	Teachers	Participants	Teaching contents	Teaching methods
At least 2 days Expert-level courses should be either long- term or comprise a follow-up/ refresher course after circa half a year	Expert- level CBT-I practitioners	All expertise levels: Health professionals with a recognized license to provide clinical psychology/ psychotherapy/ mental health care, who received qualified and essential further supervised education in sleep medicine. CBT-I clinicians should be also fully insured for all of their working health-care practice and should practice within the boundaries of their professional training. Expert level: Psychotherapists, psychiatrists, clinical psychologists, healthcare psychologists, practitioner psychologists, sleep experts for whom insomnia and its treatments is part of their core professional expertise. Advanced level: Psychotherapists, psychiatrists, clinical psychologists, healthcare psychologists, practitioner psychologists, sleep experts, clinical or healthcare master's psychologist graduates; nurses, social workers. Foundation level: GPs (similar modules could be conceptualized for pediatricians, gynaecologists, or geriatrics).	All expertise levels: 1. Basic knowledge in sleep medicine and insomnia. 2. Core behavioural CBT-I strategies. 3. Stepped-care model and allocation issues. 4. Basic CBT principles. 5. Knowledge on sleep medication/tapering. Advanced and Expert levels (advanced knowledge of CBT is required): 1. Advanced knowledge in sleep medicine and insomnia. 2. Cognitive CBT-I components. 3. Motivational and emotional CBT-I strategies. Expert level: 1. Individually tailored treatment. 2. Advanced knowledge on sleep and insomnia. 3. Advanced knowledge on CBT principles and intervention strategies.	All expertise levels: Courses should include interactive activities, e.g. role playing, work in small groups, discussion of difficult situations. Case supervision should be offered. Courses could be given face-to-face or online Expert level: Courses should comprise clinical phases including at least three cases with supervision.

These criteria are not intended to be overly prescriptive, neither are they completely comprehensive. However, we have attempted to set expectations and minimum standards for what may be regarded as necessary and feasible.

6.6 | How courses may become endorsed

It is proposed that the qualification and training standards set by the Academy will first be approved by the ESRS and its special interest group in insomnia, the European Insomnia Network (EIN). Once this is the case, the Academy will be in a position to invite submissions with a view to reviewing them against training criteria and then to provide approval. It is hoped that this process will encourage organizations, institutions and local societies to develop high-quality curricula and that the ESRS imprimatur of endorsement will encourage health professionals to apply for and to complete CBT training.

Appendix 2 comprises a form that could be used for submitting course proposals. The form will be uploaded and updated on the ESRS website. To support the process, it is suggested that each European country designates a central National CBT-I Training Centre (i.e., centre of excellence for CBT-I). For countries where there are already several established centres, a collaborative network could be formed to support education and dissemination of CBT-I. These centres should have on board a medical specialist (general medicine, psychiatry, neurology or sleep medicine) or a clinical psychologist/psychotherapist who is accredited to practice medicine/psychiatry/psychotherapy in her/his given country. Furthermore, these persons should have accredited expertise to practise and supervise psychotherapy and CBT-I. Each country should also establish a national register of CBT-I practitioners. This could be achieved in collaboration with the national sleep society or national clinical psychology or cognitive behavioural therapy associations. In Appendix 3 a form for national registers is provided. The national registers also will be uploaded and updated on the ESRS website.

7 | CONCLUSIONS

The European guidelines for insomnia (Riemann, Baglioni, et al., 2017) highlighted that “cognitive behavioural therapy for insomnia, although being the first-line treatment for insomnia, is not easily available. It is assumed that only a minority of patients with chronic insomnia will receive this treatment in Europe. Thus, the widespread implementation of CBT-I will be a major challenge for the future.” In response to this statement, European CBT-I experts from 12 different countries have instituted the CBT-I Academy, with the aim of establishing and promoting Europe-wide standards for CBT-I training and training centre accreditation. The intention is to substantially improve the availability of high-quality CBT-I in Europe within the next 10 years. In this paper, we have highlighted the very limited availability of CBT-I across Europe and

summarized the current availability of training in CBT-I. Despite differences between countries, the general conclusion is that access to CBT-I for patients and training in CBT-I for health professionals are poor and require standardization. Thus, as founders of the CBT-I Academy, we have proposed minimal criteria that should be met in each country to provide adequate CBT-I training at differing expertise levels for health professionals, alongside a stepped-care approach to service delivery. This is also expected to impact clinical research standards. It is desirable that clinical trials involving CBT-I will involve CBT-I trained practitioners. This would impact very positively on the quality and comparability of CBT-I clinical studies across Europe. A closer relationship between clinical practice and research contexts would also be expected to add to the current evidence base of CBT-I, particularly with regard to the diverse groups of patients seen clinically, including children and young people, pregnant women, women at postpartum, women going through the menopause, shift workers, those with disabilities and retirees.

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CONFLICT OF INTEREST

CAE is co-founder and Chief Medical Officer of Big Health of the company that makes the digital CBT intervention, Sleepio. He has shares in the company and receives a salary from the company. DG is the director of a private CBT-I clinic and sleep medicine consultancy, Sleep Well Oxford Ltd. He is also a salaried employee of and Clinical Engagement Lead for non-employee sleep medicine consultant for Big Health (Sleepio), with shares in the company. BH reports personal fees from Abbvie, Lundbeck, Janssen Cilag, Novartis, Mundipharma, Otsuka, Illy, Inspire and AoPOrphan, personal fees from Axovant, Benevolent Bio, Roche and AoPOrphan, and other fees from Habel Medizintechnik Austria, outside the submitted work. DR reports personal fees from Heel Germany, personal fees from different publishers, personal fees from the Freiburg Training Institute for Behaviour Therapy, and personal fees from different institutes, hospitals, etc., in Germany, outside the submitted work. All other authors have nothing to disclose.

AUTHOR CONTRIBUTIONS

The first and the last authors worked together in every phase of the manuscript preparation. All authors participated in the first meeting of the European Academy for Cognitive Behavioural Therapy for Insomnia, which took place in Freiburg, Germany, on the 4th May,

2018, contributed information on a national level and to the manuscript writing.

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APPENDIX 1

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CBT-I web-based approaches

- Shuteye (<http://www.myshuti.com/>)
- Sleepio (<https://www.sleepio.com/>)
- SleepWell (<http://internetpsykiatri.se/behandling/somnproblem-insomni>)
- I-Sleep: (<https://www.i-sleep.nl/>)
- Somnio (<https://www.somnio.nl>)
- Somnovia (<https://dak.somnovia.de/>)
- Therasomnia (<https://www.therasomnia.com/>)
- Web-based therapy for insomnia (https://www.mielenterveystalo.fi/nettiterapiat/laheteohjeet/Pages/unettomuuden_lahetteet.aspx)

APPENDIX 2

**CBT-I COURSE PROPOSAL FORM (TO BE SUBMITTED TO CBT-I ACADEMY STEERING COMMITTEE)
INFORMATION ON THE COURSE**

Name of the course	
Person(s) in charge	
Language of the course	
Qualification of the person(s) in charge	
Institution in which the course will be delivered	
Brief description of the course	
Full duration of the course	
Modality of the course (e.g. face-to-face or online)	
Participants (to whom is the course offered)	

CONTENTS OF THE COURSE

Core CBT-I components (bedtime restriction and stimulus control)	
Cognitive CBT-I components	
Basic element of sleep mechanisms	
Insomnia pathophysiology	
Additional CBT-I components (motivational and emotional interventions)	
Modules for tapering medication	
Basic knowledge of CBT-I stepped care model	
Individual tailored treatment for patients with insomnia disorder	
Other: Specify:	

TEACHERS

Provide a full list of the course's teachers, their qualification and what topic they teach.

INTERACTIVE ACTIVITIES AND CASE SUPERVISION

Provide a detailed description of how courses will be made interactive and how case supervision will be included and done.

