

**Validation of a French version of the Sleep Condition Indicator:
A clinical screening tool for insomnia disorder according to DSM-5 criteria**

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ABSTRACT

Insomnia disorder is frequent in the population, yet there is no French screening instrument available that is based on the updated DSM-5 criteria. We evaluated the validity and reliability of the French version of an insomnia screening instrument based on DSM-5 criteria, the Sleep Condition Indicator (SCI), in a population-based sample of adults.

A total of 366 community dwelling participants completed a face-to-face clinical interview to determine insomnia disorder against DSM-5 criteria and several questionnaires including the French SCI version. Three hundred and twenty nine participants completed the SCI again after 1 month. Statistical analyses were performed to determine the reliability, construct validity, divergent validity and temporal stability of the French translation of the SCI. In addition, an explanatory factor analysis was performed to assess the underlying structure.

The internal consistency ($\alpha = 0.87$) and temporal stability ($r = 0.86$, $P < 0.001$) of the French SCI were high. When using the previously defined cut-off value of ≤ 16 , the area under the Receiver Operating Characteristic curve was 0.93 with a sensitivity of 95% and a specificity of 75%. Additionally, good construct and divergent validity were demonstrated. The factor analyses showed a two-factor structure with a focus on sleep and daytime effects.

The French version of the SCI demonstrates satisfactory psychometric properties while being a useful instrument in detecting cases of insomnia disorder, consistent with features of DSM-5, in the general population.

INTRODUCTION

Insomnia complaints are the most prevalent ones regarding sleep in both general and clinical populations as approximately one-third of adults report symptoms of insomnia (Beck et al., 2013, Roth and Roehrs, 2003, Ohayon, 1996). According to the ICSD-3 and DSM-5 diagnosis criteria, insomnia disorder is characterized by dissatisfaction with sleep quantity or quality, with one or more of the following symptoms: difficulty initiating sleep, difficulty maintaining sleep, early-morning awakening. This dissatisfaction is accompanied by significant distress and/or impairment in daytime functioning (American Academy of Sleep Medicine, 2014, American Psychiatric Association, 2013). Symptoms should be present at least three times a week for at least three months. When these standardized criteria are used, it is estimated that 6-10% of adults meet the criteria for insomnia disorder (Morin et al., 2006, Uhlig et al., 2014).

Insomnia disorder can be independent or comorbid to a wide spectrum of psychiatric disorders, most notably depression and anxiety (Alvaro et al., 2013), and substance misuse disorders (Taylor et al., 2003). Insomnia disorder can also occur with medical conditions such as neurological, neuroendocrine and cardiovascular diseases (Ouellet et al., 2015, Iranzo, 2016, Palagini et al., 2013, Fernandez-Mendoza and Vgontzas, 2013). Additionally, insomnia is associated with detrimental consequences in a variety of domains, for example cognition (Fortier-Brochu et al., 2012), driving performance (Léger et al., 2014), and work productivity (Kucharczyk et al., 2012). Given its high prevalence, burden of illness (Espie et al., 2014, Falloon et al., 2011) and its significant costs to both the individual and society (Wickwire et al., 2016, Léger and Bayon, 2010), insomnia surprisingly remains under-diagnosed and under-treated. Indeed, a national French survey found that only 53% of severe insomniacs vs. 27% of subjects with occasional sleep problems reported they had ever visited a doctor specifically for insomnia (Léger et al., 2002).

Clinical evaluation is the gold standard method for the diagnosis of insomnia disorder (Sateia et al., 2000, Schutte-Rodin et al., 2008). As full clinical interviews are resource intensive, there is a need for reliable, valid and brief screening tools for insomnia for clinicians, particularly general practitioners. The Pittsburg Sleep Quality Index (PSQI) (Buysse et al., 1989) and Insomnia Severity Index (ISI) (Bastien et al., 2001) are the most widely used instruments available for assessing sleep quality and insomnia severity. These two self-reported questionnaires have shown advantages in specific settings such as indentifying good and bad sleepers or assessing changes in both nighttime and daytime components of insomnia after treatment (Moul et al., 2004; Bastien et al., 2001). Nevertheless, neither

the PSQI nor the ISI was designed to assess insomnia diagnosis based the currently commonly used DSM-5.

Espie and colleagues have developed the Sleep Condition Indicator (SCI) (Espie et al., 2014), a brief eight-item tool to evaluate insomnia based on DSM-5 criteria (American Psychiatric Association, 2013). The SCI assesses night-time and daytime symptoms, and focuses both on the frequency and persistency of these symptoms. The SCI has been validated in other languages (Palagini et al., 2015, Voinescu and Szentagotai, 2013, Wong et al., 2016) and these studies have confirmed the good psychometric properties of the original English SCI (i.e. internal consistency, and concurrent validity in insomnia). In addition, these papers demonstrated the discriminant validity of the SCI for insomnia disorder, as diagnosed with a clinical interview according to DSM-5 criteria.

Our study was designed to evaluate the validity and reliability of the French version of the SCI in a population-based sample of adults. In view of the high prevalence rates of insomnia in the general population, we expected that a population-based sample would encompass individuals with insomnia disorder based on the DSM-5 criteria.

MATERIALS AND METHODS

Participants

Participants were community-dwelling adults recruited by mean of advertisements, personal contacts and snowballing techniques from December 2015 to April 2016. The eligibility criteria included an age of 18 years or older and speaking French. Participants also had to be willing to voluntarily participate in the study, no compensation was provided.

Participants were excluded if they had a history of schizophrenia spectrum or other psychotic disorder, bipolar related disorder, substance-related and addictive disorder, neurological disease including neurodegenerative condition, cerebrovascular disease and traumatic brain injury, or an active, progressive or unstable physical illness (e.g. cancer, acute pain). Also excluded were shift workers, pregnant women or breast-feeding mothers, parents with a baby less than 12 months old, and those with a body mass index $\geq 30\text{kg/m}^2$. Note that all participants were screened for the two major diseases related to insomnia in adults, i.e. sleep apnea and the restless legs syndrome/Willis-Ekbom disease (RLS/WED). Sleep apnea was screened by using the Berlin Questionnaire (Netzer et al., 1999) and RLS/WED was assessed based on the International Restless Legs Syndrome Study Group criteria

(Allen et al., 2014). Participants with a positive diagnosis for RLS/WED and/or probable sleep apnea were excluded.

Table 1 reports demographic information for the total sample (N=366). All participants provided written and informed consent after all procedures were fully explained. The study has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) and was approved by the local university ethics committee.

Clinical interview

All participants came to Laboratory Epsilon (University Montpellier 3) for the completion of several questionnaires and a face-to-face clinical interview conducted by trained licensed psychologists with expertise in sleep field. During the face-to-face clinical interview we assessed insomnia, sleep history, medical and psychological states, psychotropic medication and socio-demographics. Current insomnia, mood and anxiety disorders were diagnosed as per to the DSM-5 criteria, using a local translation of the clinical version of the structured interview for DSM5 (SCID-5-CV). One month later, all participants were contacted by post to complete the SCI a second time. Prepaid envelopes were provided for the return of the questionnaire.

Insomnia Disorder – The diagnosis of insomnia disorder was established with a clinical interview covering items included in DSM-5 criteria for insomnia disorder. Participants were diagnosed with insomnia disorder (American Academy of Sleep Medicine, 2014, American Psychiatric Association, 2013) when they reported (i) subjective difficulty in initiating and/or maintaining sleep and/or early morning awakening despite having adequate opportunity to sleep, (ii) accompanied by significant distress and/or impairment in daytime functioning, (iii) for at least 3 months and at least 3 nights a week on the SCID-5-CV.

Insomnia Symptoms – Included in the group with symptoms of insomnia were those with symptoms of sleep onset insomnia, sleep maintenance insomnia and early awakening insomnia for at least 3 nights per week without fulfilling all diagnostic criteria for insomnia disorder (i.e., they could report being satisfied with their sleep, not report distress or daytime consequences, or not meet the criterion of symptoms for at least 3 months required for a diagnosis of insomnia). Also included in this group were individuals dissatisfied with their sleep but without symptoms of sleep onset insomnia, sleep maintenance insomnia and early awakening insomnia. In addition, this group included participants who did not meet the criteria for insomnia disorder but were using prescribed sleep medication or over-the-counter medication for sleep at least 1 night per week.

--INSERT TABLE 1 HERE--**Questionnaires**

Sleep Condition Indicator - The SCI was developed by (a) two French-speaking registered psychologists (respectively, CL and SB) translating the 8 items of the original English version of the SCI into French; (b) a native English speaker, also fluent in French as a second language, performing a back-translation of the French SCI; and (c) discussing any discrepancies between the original SCI and the back-translation when a mismatch was found between the two versions. Some linguistic corrections were made in French to adhere to the meaning of the original version. The 8 items of the SCI evaluate difficulty in initiating sleep, maintaining sleep, sleep quality, daytime sleep-related symptoms, duration of sleep problems, nights per week having a sleep disturbance and extent troubled by poor sleep on a 5-point Likert scale (0-4). Total scores range from 0 to 32, with lower scores indicating worse sleep. According to the SCI original version authors' recommendations, insomnia disorder is defined by a SCI score of 16 or lower (Espie et al., 2014).

Insomnia Severity Index - The French version of the Insomnia Severity Index (ISI) was also used to evaluate insomnia complaint severity (Bastien et al., 2001). The ISI contains seven items that are rated on a 5-point Likert scale ranging from 0 to 4. The questionnaire assesses the severity of sleep onset insomnia, sleep maintaining insomnia and early awakening insomnia, satisfaction with the current sleep patterns, interference with daytime functioning, noticeability of impairment to significant others, and level of distress caused by the sleep problem. Clinical relevant insomnia is defined by an ISI score of 15 or higher.

Beck Depression Inventory - The Beck Depression Inventory (BDI-II) measures the severity of self-reported depression and addresses all of the nine diagnostic criteria for a major depressive episode that are listed in the Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV-TR) (Beck et al., 1998). It is scored by summing the highest ratings for each of the 21 symptoms. Each symptom is rated on a 4-point scale ranging from 0 to 3, and total scores can range from 0 to 63.

Statistical analysis

For each item of the SCI normality was explored by calculating the skewness and kurtosis. Absolute values for skewness and kurtosis of greater than 3 and 20, respectively, are judged to be extreme (Weston and Gore, 2006). In addition, the Kaiser-Meyer-Olkin (KMO) method was used to measure sampling adequacy, using specified classification criteria (Field, 2009). Bartlett's test of sphericity was

computed to test correlation of the variables. A KMO between 0.5 and 1 and a significant Bartlett's test of sphericity suggest that data can be considered appropriate for exploratory factor analysis (Kline, 1994). The factor analysis extraction was computed with the maximum likelihood-method (Costello and Osborne, 2005) to determine latent factors.

The internal consistency of the French version of the SCI was examined with the item-to-total correlation and Cronbach's alpha (good internal consistency was considered $0.7 > \alpha < 0.9$). The maximum likelihood-method was carried out and eigenvalues and scree plots were examined in order to determine the structure of the data. Oblique rotation was performed after examination of inter-factor correlations.

Correlation between the SCI and the ISI was used to estimate construct validity. To test the SCI's clinical utility, the SCI total score was used to construct Receiver Operator Characteristic (ROC) curves. The Area Under the Curve (AUC) was used to examine the SCI's accuracy to discriminate participants with insomnia disorder from those without insomnia. We derived cut-points by plotting the relation between the sensitivity and 1-specificity of the SCI total over all possible values on a ROC curve and selecting a clinical cut-off score that maximized both values. The further the ROC curve lies above a reference line, the more accurately a chosen cut-off score classifies positive and negative cases in a chosen sample (Mossman and Somoza, 1991). Classification accuracy was evaluated using the following recommended ranges: low accuracy = $AUC < 0.7$, moderated accuracy = AUC between 0.7 and 0.9, and high accuracy = $AUC > 0.9$ (Swets, 1988).

The temporal stability was studied using the intraclass correlation coefficient. According to Cohen (1988), a correlation between 0.10 and 0.30 represents a small effect, a correlation between 0.30 and 0.50 a medium effect, and above 0.50 a large effect. In addition, we calculated Cohen's d' as a measure of the effect size for the difference between those with insomnia disorder compared to no insomnia and those with insomnia symptoms compared to no insomnia, the effect size was considered small ($d'=0.2$), medium ($d'=0.5$), or large ($d'=0.8$) according to Cohen (Cohen, 1977). Statistical analysis was carried out using SPSS 20 (IBM Corp., Somers, NY, USA).

RESULTS

Descriptive statistics of study measures

The mean, standard deviation and range for each measure are presented in Table 1. A total of 366 participants completed the first round, and 329 participants completed the SCI for a second time. Twenty percent of the participants met the clinical criteria for insomnia disorder. Mixed sleep onset

and maintenance insomnia was noted in a large proportion of cases (70%). Current psychotropic medication was reported by 10% of participants and 14% of participants had a current mood disorder. The same proportion reported an anxiety disorder (14%). Finally, there were no significant differences at a group level between those who completed the SCI at the first assessment and those who completed the SCI at the second assessment.

Exploratory factor analysis

The mean and standard deviation for each French SCI item are displayed in Table 2. The mean score of the SCI (*1st administration*) in this sample was 23.83, with a standard deviation of 7.4. The total scores ranged from 0 to 32 across the sample, with 0 being the minimum possible score and 32 being the highest possible score of the SCI.

Skewness and kurtosis for each item of the French SCI (*1st administration*) ranged from -1.38 to -0.41 and from -1.73 to 1.32 indicating no strong deviation from normality. Therefore, a factor analysis using the maximum likelihood method could be considered appropriate.

The KMO measure of sampling adequacy ($KMO = 0.88$) and Bartlett's test of sphericity (Bartlett's X^2 ($= 1762$, $P < 0.001$)) indicated that the scale was psychometrically adequate for exploratory factor analysis. The maximum likelihood-method yielded a two component solution (64% explained variance). Factor 1 (eigenvalue = 4.05, 32% variance) compromised items 1 (*difficulty in initiating sleep*), 2 (*difficulty in maintaining sleep*), 3 (*nights per week having a sleep disturbance*), 4 (*sleep quality*), and 8 (*duration of sleep problems*) with factor loadings ranging from 0.49 to 0.79. Factor 2 (eigenvalue = 1.07, 31% variance) compromised items 5 (*effect on mood, energy, or relationships*), 6 (*effect on concentration, productivity and ability to stay awake*) and 7 (*troubled in general*) with factor loadings ranging from 0.81 to 0.88.

Reliability

Internal consistency was high for the total scale ($\alpha = 0.87$), as well as for Factor 1 ($\alpha = 0.83$) and Factor 2 ($\alpha = 0.91$). The item-total correlations for the 8 items of the French SCI ranged from 0.60 to 0.85, with a mean of 0.73.

Construct validity

To evaluate the construct validity of the French version of the SCI, Pearson correlations were computed between the scores of the French SCI (the total score and the subscale scores for factors 1 and 2) and the French ISI. The ISI was strongly associated with the SCI total score ($r = -0.79$), and its two factors

(respectively, $r = -0.73$ and $r = -0.64$). Participants with a diagnosis of insomnia disorder reported lower scores on the SCI than those without insomnia, respectively 14.8 ± 4.3 versus 26.2 ± 5.4 , $t(364) = -16.8$, $P < 0.001$, $d' = -1.7$). The size of this effect was large. A similar pattern of results was observed regarding insomnia symptoms. Participants with insomnia symptoms scored lower on the SCI than those without insomnia symptoms, respectively 21.7 ± 5.5 versus 26.9 ± 5.2 , $t(364) = -5.2$, $P < 0.001$, $d' = -0.6$).

ROC curve analysis for identifying an optimal SCI cut-off value

ROC curve analysis (Figure1) showed that the total SCI score had the highest predictive value of insomnia disorder with a cut-off value of 16. The area under the ROC curve was 0.93 (95% sensitivity and 75% specificity).

—INSERT FIGURE 1 HERE—

Divergent validity the French SCI

To investigate the divergent validity, the SCI total score was correlated with selected demographical and clinical parameters. These analyses revealed no significant correlation with the variables age ($r = 0.08$, $P = 0.10$) and education level ($r = -0.02$, $P = 0.70$), but women did report higher scores on the SCI than men (24.9 ± 6.7 versus 22.8 ± 7.0 , $t(364) = 2.90$, $P = 0.004$, $d' = 0.30$). The size of this effect was small. The BDI total score was negatively associated with the SCI total score ($r = -0.39$, $P < 0.001$). The size of this association was medium.

Temporal stability of the French SCI

The French SCI was completed twice by 329 participants with a 1-month interval between administrations. Descriptive and item-total statistics of the SCI are shown in Table 2. Descriptive results for its first and second administration were similar.

The intraclass correlation coefficient computed between the SCI total scores was significant, $r = 0.86$ with a 95% confidence interval from 0.82 to 0.88 ($P < 0.001$), suggesting adequate temporal stability. A paired t -test revealed that the total score of the SCI did not differ significantly from the first (mean = 23.83, SD = 7.4) to the second (mean = 24.19, SD = 6.8) administration ($t(328) = -1.72$, $P = 0.09$).

—INSERT TABLE 2 HERE—

Short-form version of the SCI

In line with the validation process of the original English version, we conducted a step-wise linear regression analysis to determine which subset of items explained the greatest proportion of variances in the SCI total score. Item 3 (*how many nights*) ($\beta=0.63$) and item 7 (*troubled you in general*) ($\beta=0.43$), together predicted 82% of variance (adjusted $R^2=0.824$) in the SCI total score (R^2 change= $0.677+0.148$; $F(2, 363)=855$, $p<0.0001$). Note that the Durbin-Watson statistic value (1.90) indicated no serial correlation. Finally, the SCI-02 was strongly associated with the SCI total score ($r=0.901$). However, item 5 (*effect on mood, energy, or relationships*) ($\beta=0.44$) and item 8 (*duration of sleep problems*) ($\beta=0.63$), together predicted the highest amount of variance (87%, adjusted $R^2=0.868$) of the SCI total score (R^2 change= $0.574+0.295$; $F(2, 363)=1204$, $p<0.0001$). Note that the Durbin-Watson statistic value (1.84) indicated no serial correlation. The SCI-02 (item 5 + item 8) was strongly associated with the SCI total score ($r=0.93$).

DISCUSSION

The present study investigated the psychometric qualities of a French version of the SCI. To address this aim, we studied a non-clinical sample of community-dwelling adults and performed a clinical interview for identifying cases of insomnia disorder. Our findings provide evidence of the high internal consistency and temporal stability of our French version of the SCI. When using the previously defined cut-off value of ≤ 16 (Espie et al., 2014), a sensitivity of 95% and a specificity of 75% were observed. Additionally, good construct and divergent validity were demonstrated. The factor analyses showed a two-factor structure with a focus on sleep and daytime effects.

Specific and strong relationships were highlighted between the total score on the French SCI and perceived insomnia severity assessed by the French ISI. This is in line with evidence from the English, Italian and Chinese versions of the instrument (Espie et al., 2014, Palagini et al., 2015, Wong et al., 2016). Principal component analysis demonstrated that the French version of the SCI was composed of two factors which explained 71% of the variance. The two components reflect the underlying complaint of insomnia: (1) concerns about sleep pattern and (2) concerns about the impact of poor sleep. This pattern is in accordance with the two components obtained in the study of Espie and coworkers (2014) encompassing a sample of adults enrolled in a large open access web-based survey (The Great British Sleep Survey, $n = 30\,941$). In their sample the two components explained approximately 66% of the variance. A recent study of a Chinese translation demonstrated a slightly different two-factor structure explaining about 70% of the variance. In that study where item 4 (*sleep quality*) and item 7 (*troubled in general*) loaded on both factors (Wong et al, 2016), the authors

suggested this might be due to cultural differences. In addition, this study included a much younger population of 158 students. The internal consistency and test-retest reliability of the two sub-scales and indices of the French SCI were good.

Palagini and coworkers showed that the Italian version of the SCI effectively discriminates insomnia disorder per to the DSM-5 diagnosis criteria in a sample from a sleep center including both normal sleepers and persons with obstructive sleep apnea syndrome (Palagini et al. 2015). In the present study, we established the clinical utility of the SCI in identifying cases of insomnia disorder in a non-clinical sample of community dwelling adults. This unselected sample is particularly interesting when we consider that adult individuals from the general population consult their general practitioner on average four times a year (Organisation for Economic Co-operation and Development, 2015), and that epidemiological evidence suggests that insomnia is highly prevalent among patients visiting the general practitioner, estimates range from 41 to 54% (Arroll et al. 2012; Terzano et al. 2004; Bjorvatn et al., 2017). Our study suggests that the SCI is a useful tool to screen for insomnia disorder in the general practice.

For the French SCI, the two items explaining the most variance for the 8-item SCI, differed from previous studies (Espie et al, 2014 and Wong et al, 2016). However, the two-item short version previously defined by other studies still explained 82% of the variance. In addition, the correlation with the total score was in a similar range and high ($r=0.91$). Short forms might also be particularly useful in large research surveys or clinical intake questionnaires, when there is no space to assess sleep behaviors more in-depth.

Although this study has several strengths such as a large population-based sample and face-to-face clinical interviews, there are several limitations. First of all, the sample was recruited from the general population by mean of advertisements, personal contacts and snowballing techniques which might reduce generalizability. Ideally, a random sampling method would have been preferable to maximize the representativeness of the sample. The chosen form of recruitment may have contributed to the high rate of insomnia disorder (20%) compared to other studies (Morin et al., 2006, Uhlig et al., 2014), as individuals suffering from sleep disturbances would have been more inclined to answer an advertisement related to their current concerns. Secondly, our study did not have access to a clinical population. However, as insomnia disorder is common in the population we were able to include a sufficient number of insomnia cases. Second, we did not assess any ongoing treatment; therefore this study cannot give any indication of the sensitivity of the measurement to post-treatment changes. Last, the SCI does not contain specific questions relating to early awakening insomnia. However, in our

sample, the proportion of insomniac individuals with premature awakening with inability to return to sleep was very low (2%) and the majority of insomnia profiles were mixed (70%).

CONCLUSION

The French version of the SCI demonstrates satisfactory psychometric properties (adequate structure, good internal consistency and temporal stability). The French translation of the SCI adds a valuable questionnaire for insomnia diagnosis according to the DSM-5, to existing sleep quality and insomnia questionnaires such as the ISI and PSQI. In this respect, it is a useful instrument in detecting cases of insomnia disorder, consistent with DSM-5 criteria, in the general population. The French version of the SCI is the first formally validated specific insomnia measure, and will therefore be a valuable screening tool for researchers and clinicians, in particular general practitioners, in a French-speaking context. The 2-item version might be of particular interest for large research surveys or clinical intake questionnaires with limited space.

AUTHOR CONTRIBUTIONS

Conceived and designed the experiments: SB, CL.

Performed the experiments: KHM, VS, AJ, EF, MLL, AC.

Analysed the data: SB

Contributed reagents/materials/analysis tools: SB, CL, MCGN

Wrote the paper: SB, AIL.

DISCLOSURE STATEMENT

All authors have indicated no financial conflicts of interest.

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Appendix : French translation of the Sleep condition indicator

Entourez votre réponse	Score				
	4	3	2	1	0
<i>En pensant à une nuit typique du dernier mois...</i>					
1. ... en combien de temps vous endormez vous?	0-15 min	16-30 min	31-45 min	46-60 min	≥ 61 min
2. ... si par la suite vous vous réveillez pendant la nuit... combien de temps restez-vous éveillé au total ? (additionnez tous les éveils)	0-15 min	16-30 min	31-45 min	46-60 min	≥ 61 min
3. ... combien de nuits par semaine avez-vous un problème avec votre sommeil ?	0-1	2	3	4	5-7
4. ... comment évalueriez-vous la qualité de votre sommeil ?	Très bonne	Bonne	Moyenne	Pauvre	Très pauvre
<i>En pensant au dernier mois, à quel point la mauvaise qualité du sommeil...</i>					
5. ... a affecté votre humeur, énergie, ou vos relations ?	Pas du tout	Un peu	Moyennement	Beaucoup	Extrêmement
6. ... a affecté votre concentration, productivité, ou capacité à rester éveillé?	Pas du tout	Un peu	Moyennement	Beaucoup	Extrêmement
7. ... vous a perturbé de façon générale	Pas du tout	Un peu	Moyennement	Beaucoup	Extrêmement
<i>Finalement...</i>					
8. ... depuis combien de temps avez-vous un problème avec votre sommeil ?	Je n'ai pas de problème /<1mois	1-2 mois	3-6 mois	7-12 mois	> 1 an

Consignes pour la cotation :

Additionner tous les items pour obtenir le score total du SCI (minimum 0, maximum 32).

Un score élevé indique un sommeil de qualité.

Les scores peuvent être convertis sous le format 0-10 (minimum 0, maximum 10) en divisant le score total par 3.2.

Les scores des items grisés représentent les seuils des critères pour le diagnostic d'insomnie chronique.