Validation of the French version of the Pittsburgh Sleep Quality Index Addendum for posttraumatic stress disorder

The Harvard community has made this article openly available. Please share how this access benefits you. Your story matters

Citation

Published Version
doi:10.3402/ejpt.v4i0.19298

Citable link
http://nrs.harvard.edu/urn-3:HUL.InstRepos:11877074

Terms of Use
This article was downloaded from Harvard University’s DASH repository, and is made available under the terms and conditions applicable to Other Posted Material, as set forth at http://nrs.harvard.edu/urn-3:HUL.InstRepos:dash.current.terms-of-use#LAA
Validation of the French version of the Pittsburgh Sleep Quality Index Addendum for posttraumatic stress disorder

Malik Ait-Aoudia1,2,3*, Pierre P. Levy4,5,6, Eric Bui7,8, Salvatore Insana9, Capucine de Fouchier1,2, Anne Germain9 and Louis Jehel10,11,12,13

1Centre du Psychotrauma, de l’Institut de Victimologie, Paris, France; 2Laboratoire de Psychopathologie et Neuropsychologie (EA 2027), Université Paris 8, Vincennes - Saint-Denis, France; 3Unité de Psychiatrie et Psychotraumatologie, Centre Hospitalier Universitaire Tenon, AP-HP, Paris, France; 4Département de Santé Publique, Centre Hospitalier Universitaire Tenon, AP-HP, Paris, France; 5INSERM, U707, Paris, France; 6Université Paris 6 - Pierre et Marie Curie, UMR-S 707, Épidémiologie, Systèmes d’Information, Modélisation, Paris, France; 7Massachusetts General Hospital, Harvard Medical School, Boston, USA; 8Laboratoire du Stress Traumatique (LST), Université de Toulouse et CHU de Toulouse, France; 9Department of Psychiatry, University of Pittsburgh School of Medicine, USA; 10Department of Psychiatry and Psychotraumatology, Martinique University Hospital (CHUM) Martinique, Fort-de-France Cedex, Martinique; 11INSERM, Paris-Sud University and Paris-Descartes University, Paris, France; 12UFR des sciences médicales, Université Antilles-Guyane, UAG, France; 13Laboratoire d’éthique Médicale et de Médecine Légale, Paris, France

Background: Sleep disturbances are one of the main complaints of patients with trauma-related disorders. The original Pittsburgh Sleep Quality Index Addendum for PTSD (PSQI-A) is self-report instrument developed to evaluate posttraumatic stress disorder (PTSD)-specific sleep disturbances in trauma-exposed individuals. However, to date, the PSQI-A has not yet been translated nor validated in French.

Objective: The present study aims to: a) translate the PSQI-A into French, and b) examine its psychometric properties.

Method: Seventy-three adult patients (mean age = 40.3 [SD = 15.0], 75% females) evaluated in a specialized psychotraumatology unit completed the French versions of the PSQI-A, Pittsburgh Sleep Quality Index (PSQI), Hospital Anxiety and Depression Scale (HADS), and Impact Event Scale-Revised (IES-R).

Results: The French version of the PSQI-A showed satisfactory internal consistency, inter-item correlations, item correlations with the total score, convergent validity with PTSD and anxiety measures, and divergent validity with a depression measure.

Conclusion: Our findings support the use of the French version of the PSQI-A for both clinical care and research. The French version of the PSQI-A is an important addition to the currently available instruments that can be used to examine trauma-related sleep disturbances among French-speaking individuals.

Keywords: Nightmares; posttraumatic sleep disturbances; trauma-related disorders; PTSD; psychometric properties

*Correspondence to: Malik Ait-Aoudia, Centre du Psychotrauma, Institut de Victimologie, 131, Rue de Saussure, Paris 75017, France, Tel: +33 1 43 80 44 40, Fax: +33 1 43 80 44 93, Email: aitaoudia.malik@yahoo.fr

For the abstract or full text in other languages, please see Supplementary files under Article Tools online

Received: 6 August 2012; Revised: 6 May 2013; Accepted: 29 June 2013; Published: 12 September 2013
such, prazosin (an α-1 adrenergic antagonist) and ima-
pregnancy rehearsal therapy (IRT) have been recommended
for posttraumatic nightmares by the American Association Sleep Medicine
commissioned task force (Aurora et al., 2010). While
successful implementation and further examination of the
efficacy of these treatments are necessary worldwide, to
date, there are no instruments measuring trauma-related
sleep disturbances validated in French.

Several instruments have been developed to measure
sleep quality and sleep disturbances. The Pittsburgh Sleep
Quality Index (PSQI) is one of the most widely used
measurement instruments in clinical and research settings
and has been translated into 48 different languages
(Buyse et al., 2008). The PSQI was developed by Buyse
and colleagues in 1989 to measure subjective sleep quality
during the previous month. Although the PSQI assesses
seven sleep components, it does not measure PTSD-
specific sleep disturbances. For this purpose, the PSQI
Addendum for PTSD (PSQI-A) was introduced by
Germain and colleagues in 2005. The PSQI-A has good
psychometric properties, and a cutoff score of 4, exhibits
high sensitivity, specificity and a good positive predictive
value for discriminating between women (Germain et al.,
2005), as well as male military veterans (Insana, Hall,
Buesy, & Germain, 2013), with and without PTSD. Thus, the
PSQI-A provides a valid and clinically relevant measure to assess posttrauma sleep disturbances. The
clinical usefulness of the PSQI-A has been recognized and
and the instrument has therefore been translated into other
languages for broader dissemination, which includes
Persian for use in Iran (Farrahi, Nakhaee, Sheibani,
Garrusi, & Amirkafi, 2009).

However, to date, the PSQI-A has not yet been trans-
lated nor validated in French. Thus, this study aims to
translate the PSQI-A into French and subsequently
evaluate its psychometric properties. We hypothesized
that the French version of the PSQI-A would demon-
strate similar psychometric properties and validity com-
pared to the original English version.

Method

Participants

Seventy-three adult patients who were treated at the
Psychotraumatology Unit of Tenon University Hospital
(Paris, France) between October 2007 and September
2008 were recruited to participate in this study. Data were
collected as part of our routine clinical care. Although
this research was not formally submitted to an ethics
committee, it was conducted in accordance with the
guidelines of the Helsinki declaration. All participants
provided verbal informed consent for use of their data
in this study. Participants were ≥18 years old, French
speaking, had been previously exposed to traumatic
events, were free from psychotic or cognitive disorders,
and were hospitalized or receiving outpatient treatment.
Participants had anxiety or depression, with or without
PTSD symptoms and sleep disturbances.

PSQI-A translation

First, the original English version of the PSQI-A was
translated into French by L. Jehel, M. Ait-Aoudia, and
C. Stancu. Step one of the English-to-French transla-
tion procedure consisted of three translations of the
instrument followed by consensus agreement among the
translators.

Second, the French-translated PSQI-A was back-
translated into English by D. Morali, a bilingual psy-
chiatrist who was not familiar with the original English
version of the PSQI-A.
Third, both the original English PSQI-A and the back-translated French-to-English PSQI-A versions were reviewed by a panel of professionals affiliated with the Psychiatry Unit at Tenon University Hospital. The panel consisted of professionals who were involved in the first and second steps of the procedure, and others who were naive to both the English- and French-translated PSQI-A versions. At the end of this review, only small changes were made to clarify and optimize the French-translated PSQI-A. The final French version of the PSQI-A (PSQI-A FV), as presented in Appendix, was approved by several bilingual clinicians including A. Germain, a co-creator and lead author of the original (English) PSQI-A validation study.

### Measures

**The Pittsburgh Sleep Quality Index**

The French version of the PSQI was used to assess sleep quality during the past month (Blais, Gendron, Mimeault, & Morin, 1997). The 19-item self-report PSQI evaluates seven sleep components: (1) sleep quality, (2) sleep latency, (3) sleep duration, (4) habitual sleep efficiency, (5) sleep disturbance, (6) use of sleeping medication, and (7) daytime dysfunction. Each of the seven components is rated on a 0–3 scale. The total score resulting from the sum of the seven components ranges from 0 to 21, and a cut off >5 has been found to reflect clinically significant sleep disturbances (Buysse, Reynolds, Monk, Berman, & Kupfer, et al., 1989). The PSQI is one of the most frequently used instruments to examine sleep for clinical and research purposes (Buysse et al., 2008). The PSQI was translated into French and validated in 1997 by Blais and colleagues (Blais et al., 1997).

**The Pittsburgh Sleep Quality Index Addendum for PTSD**

The PSQI-A was the first validated instrument introduced to assess past-month sleep disturbances that are specifically associated with PTSD (Germain et al., 2005). The PSQI-A consists of seven items that estimate the frequency of: (1) hot flashes; (2) general nervousness; (3) memories or nightmares of a traumatic experience; (4) anxiety or panic, not related to traumatic memories; (5) bad dreams not related to traumatic memories; (6) episodes of terror or screaming during sleep without fully awakening; and (7) episodes of “acting out” dreams, such as kicking, punching, running or screaming. Each item is rated on a Likert scale from 0 to 3 (0 = not during the past month, 1 = less than once a week, 2 = once or twice a week, 3 = three or more times a week). A total score is obtained from the sum of all seven items, and has a range of 0–21. Three additional questions probing information about anxiety, anger-accompanying memories or nightmares of a traumatic experience (item 3), and timing when these occur are also included but are not added to the total score. The PSQI-A can be completed in less than 5 min.

The original PSQI-A validation study reported a Cronbach’s coefficient $\alpha$ of 0.85 and a mean PSQI-A item-total correlation of $r = 0.47$. All item correlations were statistically significant ($p < 0.001$). The PSQI-A showed moderate to strong positive correlations with the Clinician-Administered PTSD Scale ($r = 0.53$, $p < 0.007$) and the PTSD Symptom Scale ($r = 0.56$, $p < 0.001$). A score $\geq 4$ yielded a sensitivity of 94%, a specificity of 82%, and a positive predictive value of 93% to distinguish individuals with PTSD from those without (Germain et al., 2005).

**Impact of Event Scale-Revised**

The French version of the Impact of Event Scale-Revised (IES-R) was used to evaluate PTSD symptoms during the past 7 days (Brunet, St-Hilaire, Jehel, & King, 2003). The 22-item self-report IES-R measures symptoms of intrusion, avoidance, and hypervigilance (Weiss & Marmar, 1997). Each item is scored on a 0–4 point scale, with higher scores reflecting increased PTSD symptom severity. The IES-R is a widely used instrument reported across the international literature. The IES-R French validation study reported good internal consistency with a Cronbach’s $\alpha$ of 0.93 (Brunet et al., 2003). A cutoff score of $\geq 36$ has been shown to indicate a level of PTSD symptoms severity compatible with a PTSD diagnosis (Jehel & Dayan, 2004).

**Hospital Anxiety and Depression Scale**

Participants were administered the French version of the Hospital Anxiety and Depression Scale (HADS) to evaluate depression and anxiety symptoms during the past 7 days (Lépine, Godchau, & Brun, 1985). The HADS scale includes 14 items, each of which is scored on a 0–3 point Likert scale. Higher HADS total scores indicate increased symptom severity (Zigmond & Snaith, 1983). Specific items can be separately summed to provide two 7-item subscales for depressive symptoms (HADS-D) and anxiety symptoms (HADS-A), respectively. The French version of the HADS demonstrated satisfactory psychometric validity. Subscale scores $\geq 10$ are commonly used to indicate both anxiety and depression for the respective subscales (Lépine, 1996; Lépine et al., 1985).

**Procedure**

Participants were assessed for PTSD symptoms (re-expressing, avoidance, and hyperarousal clusters) with the IES-R, and were classified into a probable PTSD (IES-R $\geq 36$) based on their total score. Participants also completed the French-translated PSQI-A, PSQI, and HADS.
**Statistical analysis**

Quantitative variables were tested using Mann–Whitney tests and Spearman’s correlation coefficients. The internal reliability of the French-translated PSQI-A calculated with Cronbach’s coefficient α and test–retest reliability was assessed with Spearman’s correlation coefficient and the intraclass correlation coefficient. Sensitivity, specificity, and positive predictive value to identify probable PTSD were computed with 95% confidence intervals (CI). A receiver operating characteristic (ROC) analysis was implemented. SPSS 17.0 and Statview 5.0 softwares were used. The significance level was set to 0.05 (two-tailed).

**Results**

The total sample was composed of 73 participants. All participants were exposed to at least one traumatic event and were being treated for PTSD symptoms. Participants had been suffering from PTSD symptoms for at least 2 months, with some for more than 10 years.

The sample included 57 participants who had IES-R scores above the cutoff value of 36 (range: 37–84) and 16 participants below the cutoff value of 36 (IES-R range: 0–35).

Patients with a score ≥36 on the IES-R were classified in the probable PTSD group, while those who scored <36 were classified in the no-PTSD group. Participants’ comorbid depression and anxiety, as well as medication use, is indicated in Table 1.

The probable PTSD group (n=57) exhibited clinically significant sleep disturbances (PSQI: range; 9–21), marked trauma-related sleep disturbances (PSQI-A: range; 3–21), and moderate to high levels of anxiety and depressive symptoms. The no-PTSD group included 16 participants who exhibited poor sleep quality and sleep disturbances (PSQI: range; 2–17), some trauma-related sleep disturbance (PSQI-A: range; 2–13), and low to moderate levels of anxiety and depressive symptoms. The no-PTSD group scored significantly lower than the probable PTSD group on the global scores for all measures (all p < 0.05). Descriptive statistics and comparisons between the two groups are reported in Table 2.

**Psychometric properties of the French version of PSQI-A**

**Internal consistency**

The PSQI-A FV demonstrated adequate internal consistency with α = 0.72. Correlations between each PSQI-A FV items and the total PSQI-A FV score ranged from ρ = 0.52 to ρ = 0.67, p < 0.0001 (Table 2).

**Convergent and divergent validity**

The PSQI-A FV demonstrated convergent validity with both PTSD and anxiety symptoms. The PSQI-A FV was associated with the IES-R total score, IES-R total score after removing the three sleep items (items: 2. waking at night, 5. trouble falling asleep, and 20. nightmares), and the HADS-A. The PSQI-A FV demonstrated divergent validity with depression symptoms. The PSQI-A FV was not associated with the HADS-D, ρ = 0.04, p = 0.71 (Table 2).

**Sensitivity, specificity, and positive predictive value**

In order to optimize the PSQI-A FV for application as a screening tool for adult patients who are most likely

---

**Table 1.** Sociodemographic and clinical characteristics of 73 trauma exposed treatment-seeking adult patients with and without probable PTSD

<table>
<thead>
<tr>
<th></th>
<th>Total sample N = 73</th>
<th>Probable PTSD group n = 57</th>
<th>No-PTSD group n = 16</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean age years</strong></td>
<td>M = 40.3 (SD = 15)</td>
<td>M = 39.2 (SD = 14.3)</td>
<td>M = 44.2 (SD = 17.2)</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>55 (75%)</td>
<td>45 (79%)</td>
<td>12 (75%)</td>
</tr>
<tr>
<td>Male</td>
<td>18 (25%)</td>
<td>12 (21%)</td>
<td>4 (25%)</td>
</tr>
<tr>
<td><strong>Depression</strong>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>45 (62%)</td>
<td>37 (65%)</td>
<td>8 (50%)</td>
</tr>
<tr>
<td>No</td>
<td>28 (38%)</td>
<td>20 (35%)</td>
<td>8 (50%)</td>
</tr>
<tr>
<td><strong>Anxiety</strong>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>62 (85%)</td>
<td>54 (95%)</td>
<td>8 (50%)</td>
</tr>
<tr>
<td>No</td>
<td>11 (15%)</td>
<td>03 (5%)</td>
<td>8 (50%)</td>
</tr>
<tr>
<td><strong>Sleep medication use</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>48 (66%)</td>
<td>41 (72%)</td>
<td>7 (44%)</td>
</tr>
<tr>
<td>No</td>
<td>25 (34%)</td>
<td>16 (28%)</td>
<td>9 (56%)</td>
</tr>
</tbody>
</table>

*Participants with total scores ≥10 (cutoff) on each subscales HADS-A: Anxiety state-Hospital Anxiety and Depression Scale and Depression state; HADS-D: Anxiety state-Hospital Anxiety and Depression Scale.
to develop PTSD following trauma exposure, a cutoff score was calculated to provide the highest sensitivity and strongest positive predictive value (Fig. 1). The area below the ROC curve was 0.81, showing an 81% probability that a randomly selected probable PTSD patient would have a higher PSQI-A FV score than a randomly selected no-PTSD patient. The ROC analysis also showed that a PSQI-A FV total score ≥6 would provide 87% sensitivity and 50% specificity (95% CI 79-95 and 39-61, respectively). A score ≥6 showed 86% positive and 53% negative predictive value (95% CI 78-94 and 42-64, respectively).

**Test–retest reliability**

The temporal stability of the PSQI-A FV was examined at 7-day intervals. Thirty-five patients were selected to complete the PSQI-A twice within that period, but data for only 28 patients out of the 35 were available for test–retest analyses, as seven participants did not complete the retest. Among these participants, the PSQI-A FV scores demonstrated satisfactory temporal stability, $\rho=0.74$ ($p<0.0001$) and intraclass correlation coefficient =0.76.

**Discussion**

This study describes the translation of the PSQI-A to French and reports on the psychometric properties for use among French-speaking individuals. As expected, similar to the original PSQI-A, the PSQI-A FV demonstrated satisfactory internal reliability ($\alpha=0.85$, $\alpha=0.72$, respectively) and strong positive correlations between each item and the total score. The PSQI-A FV had good convergent validity with measures of sleep quality as measured by the PSQI. These results indicate that the PSQI-A FV items represent related aspects of a single underlying construct of sleep disturbance.

---

**Table 2. Relationship between PSQI-AFV items, clinical symptoms and probable PTSD status among 73 trauma-exposed treatment-seeking adult patients**

<table>
<thead>
<tr>
<th></th>
<th>Probable PTSD group ($n=57$)</th>
<th>No-PTSD group ($n=16$)</th>
<th>Total sample ($N=73$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$ (SD)</td>
<td>$M$ (SD)</td>
<td>$p^*$</td>
</tr>
<tr>
<td>IES-R</td>
<td>62.25 (11.82)</td>
<td>21.06 (12.62)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>IES-R (without 3 items related to sleep)</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>HADS-A</td>
<td>15.51 (3.29)</td>
<td>10.44 (3.69)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>HADS-D</td>
<td>11.68 (4.02)</td>
<td>8.50 (5.09)</td>
<td>0.02</td>
</tr>
<tr>
<td>Total PSQI score</td>
<td>15.02 (3.36)</td>
<td>9.44 (4.10)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Total PSQI-A score</td>
<td>11.77 (4.65)</td>
<td>6.57 (3.37)</td>
<td>0.0001</td>
</tr>
<tr>
<td>Hot flashes</td>
<td>1.38 (1.32)</td>
<td>0.75 (0.86)</td>
<td>0.09</td>
</tr>
<tr>
<td>General nervousness</td>
<td>2.47 (0.85)</td>
<td>1.26 (0.89)</td>
<td>0.0006</td>
</tr>
<tr>
<td>Memories/nightmares of trauma</td>
<td>2.14 (1.06)</td>
<td>1.31 (1.13)</td>
<td>0.009</td>
</tr>
<tr>
<td>Anxiety/panic not related to trauma</td>
<td>1.79 (1.19)</td>
<td>0.81 (0.99)</td>
<td>0.004</td>
</tr>
<tr>
<td>Bad dreams not related to trauma</td>
<td>1.44 (1.13)</td>
<td>1.06 (1.18)</td>
<td>0.22</td>
</tr>
<tr>
<td>Episodes of terror</td>
<td>1.21 (1.17)</td>
<td>0.44 (0.73)</td>
<td>0.01</td>
</tr>
<tr>
<td>Acting out dreams</td>
<td>1.33 (1.23)</td>
<td>0.56 (0.96)</td>
<td>0.02</td>
</tr>
</tbody>
</table>

Note. PSQI: Pittsburgh Sleep Quality Index; PSQI-A: Pittsburgh Sleep Quality Index-Addendum; HADS-A: Anxiety state-Hospital Anxiety and Depression Scale; Depression state- HADS-D: Anxiety state-Hospital Anxiety and Depression Scale; IES-R: Impact Event Scale-Revised, without 3 items related to sleep: item 2: waking at night; item 15: trouble falling asleep; item 20: nightmares.

*Mann-Whitney tests; **Spearman’s $r$ test correlations.

---

**Fig. 1. ROC curve presenting the power of the French version of the PSQI-A to discriminate between probable PTSD and no-PTSD using among 73 trauma-exposed treatment-seeking individuals.**
Similarly to the original English PSQI-A, the French version of the PSQI-A demonstrated good convergent validity with measures of PTSD symptom severity ($\rho = 0.60$, $p < 0.001$). Additionally, the probable PTSD group demonstrated a significantly higher PSQI-A FV total scores that the no-PTSD group. Thus, the PSQI-A FV total score discriminated between the probable PTSD and the no-PTSD groups, although some individuals in the no-PTSD group reported some PTSD symptoms and some PTSD sleep disturbances (see Table 2). Moreover, the correlation between the PSQI-A FV and the IES-R total score was significant even when IES-R sleep-related items were removed ($\rho = 0.58$, $p < 0.001$). This result suggests that the relationship between diurnal and nocturnal PTSD symptoms may be detected by the PSQI-A FV is further supported by the ROC analysis. The PSQI-A FV had an 81% ability to differentiate patients with probable PTSD from no-PTSD patients and appears to be an adequate screening instrument for probable PTSD. A PSQI-A FV score $\geq 6$ had good sensitivity and accurately identified 87% of patients. However, the specificity of the PSQI-A FV (50%) was acceptable, albeit moderate. Additionally, 87% of patients scoring $\geq 6$ on the PSQI-A FV total score had a probable PTSD yielding a false-positive rate of 13%. Although the cutoff score of $\geq 6$ is higher than the cutoff score identified in the original PSQI-A validation study ($\geq 4$), the higher cutoff score identified in this study is also probably due to the different patient populations from the original study. Nevertheless, we recommend the original threshold score of 4 even when using the PSQI-A FV. This score provides a lower threshold and greater screening sensitivity to identify probable PTSD. The PSQI-A FV also demonstrated good divergent validity with a measure of depression. This suggests that PSQI-A FV is able to discriminate between dimensions of PTSD and depression.

In the original PSQI-A validation study, the total score did not change over 6 months in healthy controls group, whereas the PTSD group showed a significant reduction in the PSQI-A total score at 6 months. Our results suggest that the PSQI-A FV has good temporal stability across a short time interval. Although a 7-day interval was adequate to examine temporal stability, a longer interval would provide a more robust temporal stability assessment. Greater further analysis of sensitivity to therapeutic change would provide important information for future users of this instrument.

This preliminary study has other limitations. The sample size of this study is relatively small and our sample was composed of traumatized individuals, mostly women, who were undergoing treatment in a psychotraumatology unit. Therefore, our findings should be considered in the context of this specific sample and may not be generalized to a wider population. Further instrument examination of the psychometric properties of the PSQI-A FV in community-based samples, as well as among individuals undergoing trauma-focused treatment in various medical or mental health care settings, or individuals with other psychiatric conditions are therefore warranted. Despite these limitations, given that PTSD-related sleep problems pose therapeutic challenges (e.g., Davis & Wright, 2007; Krakow et al., 2001a, 2001c), these findings have both clinical and research implications. Within clinical settings, the PSQI-A FV is a valid tool to assess posttraumatic sleep disturbances among French-speaking individuals. Within research settings, the PSQI-A FV may be used to better understand the relationship between sleep and PTSD.

**Conclusion**

The PSQI-A FV is a self-administered questionnaire that can be completed in five minutes and offers clinicians a reliable way to screen adult patients who suffer from PTSD sleep disturbances. Our study demonstrated that the PSQI-A FV has satisfactory psychometric properties among Francophone adult patients who were being treated for PTSD. Thus, the PSQI-A FV is a reliable tool, which can be used to examine posttrauma sleep disturbances and to screen for probable PTSD among trauma-exposed individuals. The validity of this instrument enables its use for both clinical and research applications. A validated version of the PSQI-A is now available for administration to French-speaking individuals.

**Conflicts of interest and funding**

Trauma-Psy Foundation provided financial support for this study. Trauma-Psy Foundation was not associated with this research, and did not have anything to do with the data collection, analysis, interpretation, or writing of this research.

**References**


Appendix

PSQI-A pour l’évaluation des troubles du sommeil posttraumatiques

A. Germain, M. Hall, B. Krakow, M. K. Shear, D. J. Buysse,

Adaptation version française L. Jehel, Malik Ait Aoudia

CONSIGNES: Veuillez s’il-vous-plaît répondre aux questions suivantes concernant votre sommeil au cours du dernier mois. Ajoutez toute observation provenant de votre partenaire de chambre ou de lit.

1. Au cours du dernier mois, combien de fois avez-vous eu de la difficulté à dormir parce que vous ...

a) avez éprouvé des bouffées de chaleur:

<table>
<thead>
<tr>
<th>Jamais durant le dernier mois</th>
<th>Moins d’une fois par semaine</th>
<th>Une ou deux fois par semaine</th>
<th>Trois fois ou plus par semaine</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ 0</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
</tr>
</tbody>
</table>

b) ressentiez une nervosité générale:

<table>
<thead>
<tr>
<th>Jamais durant le dernier mois</th>
<th>Moins d’une fois par semaine</th>
<th>Une ou deux fois par semaine</th>
<th>Trois fois ou plus par semaine</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ 0</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
</tr>
</tbody>
</table>

c) avez eu des souvenirs ou des cauchemars se rattachant à un événement traumatique:

<table>
<thead>
<tr>
<th>Jamais durant le dernier mois</th>
<th>Moins d’une fois par semaine</th>
<th>Une ou deux fois par semaine</th>
<th>Trois fois ou plus par semaine</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ 0</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
</tr>
</tbody>
</table>

d) avez éprouvé une anxiété sèvre ou de la panique qui n’étaient pas reliées à un souvenir traumatique:

<table>
<thead>
<tr>
<th>Jamais durant le dernier mois</th>
<th>Moins d’une fois par semaine</th>
<th>Une ou deux fois par semaine</th>
<th>Trois fois ou plus par semaine</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ 0</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
</tr>
</tbody>
</table>

e) avez fait de mauvais rêves qui n’étaient pas reliés à des souvenirs traumatisiques:

<table>
<thead>
<tr>
<th>Jamais durant le dernier mois</th>
<th>Moins d’une fois par semaine</th>
<th>Une ou deux fois par semaine</th>
<th>Trois fois ou plus par semaine</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ 0</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
</tr>
</tbody>
</table>

f) avez eu des épisodes de terreur ou de hurlements durant votre sommeil sans vous réveiller complètement:

<table>
<thead>
<tr>
<th>Jamais durant le dernier mois</th>
<th>Moins d’une fois par semaine</th>
<th>Une ou deux fois par semaine</th>
<th>Trois fois ou plus par semaine</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ 0</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
</tr>
</tbody>
</table>

g) avez eu des épisodes «d’action» pendant vos rêves, tels que donner des coups de pied, des coups de poing, courir ou crier:

<table>
<thead>
<tr>
<th>Jamais durant le dernier mois</th>
<th>Moins d’une fois par semaine</th>
<th>Une ou deux fois par semaine</th>
<th>Trois fois ou plus par semaine</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ 0</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
</tr>
</tbody>
</table>

2. Si vous avez eu des souvenirs ou des cauchemars liés à un événement traumatique au cours de votre sommeil (question 1-c ci-haut) ...

a) À quel point avez-vous ressenti de l’anxiété durant ces souvenirs/cauchemars?

<table>
<thead>
<tr>
<th>aucunement □ 0</th>
<th>Très peu □ 1</th>
<th>moyennement □ 2</th>
<th>beaucoup □ 3</th>
<th>Score –</th>
</tr>
</thead>
</table>

b) À quel point avez-vous ressenti de la colère durant ces souvenirs/cauchemars?

<table>
<thead>
<tr>
<th>aucunement □ 0</th>
<th>Très peu □ 1</th>
<th>moyennement □ 2</th>
<th>beaucoup □ 3</th>
<th>Score –</th>
</tr>
</thead>
</table>

c) À quel moment de la nuit la plupart de ces souvenirs/cauchemars se sont-ils produits?

<table>
<thead>
<tr>
<th>Tôt dans la nuit □ 0</th>
<th>Dans le milieu de la nuit □ 1</th>
<th>Tard la nuit, près du matin □ 2</th>
<th>Pas de moment en particulier □ 3</th>
</tr>
</thead>
</table>