

Reliability and validity of the Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5) test for post-traumatic stress disorder in mental health nurses in Spain

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ABSTRACT

Background: Here we report the reliability and test/re-test validity of a Castilian version of the PCL-5 (PCL5-C) in mental health nurses.

Methods: A sample of 52 consecutive nurses was recruited from two psychiatric hospitals and four psychiatrists units of general hospitals in Madrid, Spain.

Results: We detected high internal consistency for the study questionnaire at the test assessment ($n = 52$) and at retest 0.929 and 0.935, respectively, by total Cronbach's α . All of the items at test and re-test correlated with the total score.

Conclusions: Reproducibility analysis showed excellent test/re-test reliability for the total score and each item. Based on our findings, we conclude that the PCL5-C is a valid and reliable questionnaire when applied among Spanish mental health nurses population.

Background

The Diagnostic and Statistical Manual of Mental Disorders, DSM-5 (American Psychiatric Association, 2013) defines post-traumatic stress disorder (PTSD) as exposure to death, serious injury, or sexual violence, whether actual or threatened, in one (or more) of the following ways: direct experience of the traumatic event(s) or being in the direct presence of the event(s) occurred to others.

Nursing personnel are at risk of developing PTSD due to exposure to traumatic situations while providing care to vulnerable populations because it can develop when exposed directly, indirectly, or repeatedly to traumatic events (Carmassi et al., 2020). Nor do they receive the appropriate institutional support to be able to overcome this disorder (Foli et al., 2020). Mental health nurses often suffer violence in their work environment (at a rate of ~13 % per year) (Gerberich et al., 2005); this situation, maintained over time, generates job dissatisfaction, absenteeism, failures in the medication of patients, greater risk of occupational accidents and, above all, fear of going to work every day

(Lauvrud et al., 2009).

Knowing that PTSD is a problem both for nursing staff in general and for mental health in particular, it is necessary to use reliable psychometric detection instruments, and in this sense, the Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5) is a heavily used instrument for measuring post-traumatic stress. The reliability and validity of PCL-5 have been well studied in multiple Spanish-speaking populations from Latinoamerica (Durón-Figueroa et al., 2019; Reguera et al., 2021), but there is no validated version to be used in Castilian-speaking mental health nurses in Spain.

We could not find a validated Castilian version of PCL-5. Therefore, the main objective of this study is to check the reliability and test/re-test validity of a developed Castilian version of the PCL-5 for Castilian-speaking mental health nurses.

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Methods

Sample size calculation

The sample size was previously calculated to determine the number of persons who must participate in obtaining reliable results, and for this, the MedCal software Version 20.011 has been used. The calculation of the minimum sample size necessary to detect a correlation coefficient significantly different from 0 for a value of $r = 0.4$ and a confidence interval of 95 % with an error $\alpha = 0.05$ for a two-tailed test, and the desired analysis power of 80 % (error $\beta = 20$ %) a minimum sample size of 46 people are needed. Finally, 52 participants were included in the present study.

Participants

A sample was recruited by a consecutive sampling method using a successive and non-random simple method.

A cohort of 52 consecutive participants was recruited from two psychiatric hospitals and four psychiatric units of general hospitals in Madrid-Spain.

Participation selection and inclusion criteria were as follows: (1) mental health nurses working in psychiatric wards, (2) adequate understanding of Castilian at an oral and written level, and (3) who has had a traumatic experience. The exclusion criteria of subjects were (1) refusal to provide informed consent and (2) inability to understand and carry out study instructions in Castilian.

Participants were recruited concurrently through a direct approach and voluntarily required to fill out the tool as part of their normal consulting appointment.

Study design

A translation and test/re-test study was carried out between September 2021 to November 2021 according to the Patient-Reported Outcome Measures (PROMs) Principles of Good Practice statement and checklist (Wild et al., 2005). The translation and test/re-test procedures were developed using the PCL-5 tool to determine its reliability.

Ethical statements

The Ethics Committee approved the study of the Rey Juan Carlos University (Registration number: 0906202014120). All participants signed informed consent forms before completing the questionnaire. Finally, the Helsinki declaration and all human experimentation rules were respected (World Medical Association, 2013).

Instruments

The Post-traumatic Stress Disorder Checkable List for DSM-5 (PCL5) (Weathers et al., 1993; Weathers et al., 2013) is a scale according to DSM 5 criteria. The instrument has 20 items rated on a Likert-type scale ranging from 0 (not at all) to 4 (fully); these items describe the symptomatology of the diagnostic criteria of re-experiencing, avoidance, activation and cognitive alterations. The scale shows adequate internal consistency of the total score with an alpha of Cronbach as 0.90 and 0.96 (Blevins et al., 2015; Bovin et al., 2016; Sveen et al., 2016; Wortmann et al., 2016). In other studies the test/re-test reliability correlation reported was 0.82 and 0.91 (Cheng et al., 2020; Krüger-Gottschalk et al., 2017; Sveen et al., 2016).

The Acceptance and Action Questionnaire-II (AAQ-II) evaluates the concept of acceptance, experiential avoidance, and psychological inflexibility. This questionnaire assesses how people, in the face of their private events associated with psychological distress, manage to accept them and keep their goals and values present, directing their actions towards them. This test has an internal consistency $\alpha = 0.87$ and was

adapted from English to Spanish. It consists of ten items that are evaluated using a 7-point Likert scale and where items 1, 6, and 10 are inverse. Therefore, the range varies from 10 to 70. High scores indicate less acceptance, that is, greater experiential avoidance (Barajas, 2015; Valencia, 2019).

Translation and cross-cultural adaptation

According to standard guidelines proposed by Beaton et al. (Beaton et al., 2000), the process of translation and cross-cultural adaptation of the PCL-5 to PCL-5 Castilian (PCL-5 C) included the following steps:

1) Two independent researchers first translated the PCL-5 from English to Spanish. The two researchers were fluent in Spanish and English and had background knowledge of psychiatric nursing sciences. 2) Then, the two independent translations were back-translated from Spanish to English by an English teacher without a medical background and two bilingual mental health nurses' specialists. 3) An expert panel then compared and assessed the two versions. The panel comprised two mental health nurse specialists and two nurse experts fluent in Spanish and English. An initial Spanish version of PCL-5 C was then produced. 4) The initial Castilian version of PCL-5 C was pilot evaluated in a cohort of 30 mental health nurses. 5) After the test, new emerging issues were analyzed and discussed. The expert panel considered all the findings and produced the final PCL-5 C.

The forward/backward translation protocol was used for the translation, cross-cultural adaptation, and validation procedure from the English version to the Castilian (Beaton et al., 2000; Scott et al., 2009; Tennant et al., 2004).

According to prior recommendations, the translation procedure was conducted following international guidelines (Beaton et al., 2000; Wild et al., 2005). First, forward translation was performed by two independent bilingual Spanish translators (forward). Second, these translations were separately reconciled by each translator (backwards). Third, the reconciled forward-translated version from the PCL-5 was translated into Castilian by seven authors (backwards). Fourth, the translated version was compared with the original version to verify the conceptual equivalence of the translation, discrepancy, or unclear terms. Fifth, harmonization occurred via an expert panel formed by seven authors, all mental health nurses, to agree on the translation. Sixth, cognitive interviews were held in psychiatric centres to provide validity and avoid potential errors (Wild et al., 2005).

Finally, this questionnaire was composed using Likert scales ranging from 0 (nothing) to 4 (extremely). The verification and subsequent expert panel were carried out by the same group who provided the backward translation.

Statistical analysis

Sociodemographic characteristics (age, sex, weight, height, and BMI) were described.

Each item and total score were collected and described as mean \pm standard deviation (SD) completed with the lower-upper limits of the 95 % confidence interval for test/re-test values.

All variables were tested for normality distribution using the Kolmogorov-Smirnov test, and data were considered normally distributed if $p > 0.05$.

The total data and all domains studied during the test and re-test showed a non-normal distribution ($p < 0.05$), so the distribution was analyzed using the non-parametric paired Wilcoxon signed-rank test to test systematic differences between the test and re-test.

Internal consistency and reliability were analyzed using Cronbach α (α) for total score and each item score. This parameter was used to summarize the internal correlations of all items on a scale. For clarification, a higher α coefficient ranged from 0.0 to 1.0 was considered more consistent for the scale with a greater likelihood of reflecting a single underlying variable on the questionnaire. We examined

correlations of all items with the overall score and whether removing any item improved Cronbach's α .

Reproducibility

The test/re-test reliability was assessed by asking 52 mental health nurses in the test stage to complete and return a second questionnaire (re-test) 7 days after the first. The Intraclass Correlation Coefficient (ICC) examined the data with a 95 % CI. A 2-way random effects model (2.1), single measures, absolute agreement, and ICC were analyzed to express concordance between the test and re-test. To interpret ICC values, we used benchmarks proposed by Landis and Koch (Cicchetti, 1994). The ICC is a value can range between 0 and 1, where values below 0.4 indicate poor reliability, between 0.40 and 0.59 fair reliability, between 0.59 and 0.74 good reliability, between 0.75 and 1.00 indicates excellent reliability.

Construct validity was examined using the Spearman correlation coefficient, according to non-normal data distribution, between the total score of the questionnaire domain measurements obtained at the same assessment both at the test and after 7 days at the re-test.

The use of coefficient of variation (CV) values has been the most common approach used previously for examining variability between tests, and in the current study, a CV for method error was calculated as follows: $CV = (2 \times (SDd/\sqrt{2}) / (X1 + X2) 19)$. SD represents the standard deviation of the differences between the two tests, and X1 and X2 represent the two tests' means.

In addition, standard errors of measurement (SEM) were calculated to measure the range of errors of each parameter. SEM is a quantitative expression of the range of error that can occur whenever the same participant repeats certain tests. In addition, SEM values were calculated from the ICCs and SDs for each session using the higher of the 2 SD measurements to determine the range of error between sessions. SEM was calculated using the formula $SEM = SD \times \sqrt{1 - ICC}$.

To determine the smallest amount of real change and beyond the bounds of measurement error, minimum detectable changes (MDCs) were calculated at a CI of 95 %. MDC values, which reflect the magnitude of change necessary to provide confidence that a change was not the result of random variation or measurement error, were calculated as follows: $MDC = \sqrt{2} \times 1.96 \times SEM$.

In addition, Bland and Altman's graphs were obtained to assess agreement and heteroscedasticity (Bland & Altman, 1986).

Validity: The content validity, construct validity, and convergent validity were analyzed to assess the validity of the Spanish version of AAQII, which is known to be easy to use, reliable, and has been validated for acceptance, experiential avoidance, and psychological inflexibility (Barajas, 2015; Valencia, 2019).

Content validity refers to the relevance and comprehensiveness of a measure's items.

The expert panel were required to verify whether the Spanish version of TSK-IPK clearly described the measure's purpose, the concepts being measured, and the target populations (Terwee et al., 2007). Meanwhile, mental health nurses were interviewed to determine whether they had difficulties understanding the items in the pilot trial.

Finally, convergent validity was assessed by examining the correlation between the PCL-5 test and re-test total scores and AAQII, the correlation values are considered to indicate good correlation when 0.41–0.60, very good correlation when 0.61–0.80, and excellent correlation when >0.81 (Fayers & Machin, 2007).

Reliability: The criterion of Cronbach's alpha > 0.70 and the Intraclass Correlation Coefficients (ICC) > 0.70 were used to assess the internal reliability and test-retest reliability, respectively (Terwee et al., 2007). The intraclass correlation coefficient (ICC) is a widely used reliability index in test-retest, intrarater, and interrater reliability analyses, and it was calculated using data from 52 patients who completed the Spanish version of PCL-5 C again after a 1-week interval. Under such conditions, ICC values < 0.5 indicate poor reliability, values between 0.5 and 0.75 indicate moderate reliability, values between 0.75 and 0.9

Table 1

Translations between the two versions of the Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5).

Questions of each item PCL-5	Cuestiones de cada pregunta PCL5-C
1.- Repeated, disturbing, and unwanted memories of the stressful experience?	¿Recuerdos repetidos, perturbadores o no deseados de una experiencia estresante?
2.- Repeated and disturbing dreams about the stressful experience?	¿Sueños repetidos y perturbadores sobre la experiencia estresante?
3.- Suddenly feel or act as if the stressful experience is happening again (as if you are reliving it)?	¿Siente o actúa repentinamente como si la experiencia estresante estuviera ocurriendo nuevamente (como si la estuviera reviviendo)?
4.- Feeling very distressed when something reminded you of a stressful experience?	¿Se siente muy angustiado cuando algo le recuerda la experiencia estresante?
5.- Have intense physical reactions when something reminds you of a stressful experience (for example, pounding heartbeats, trouble breathing, sweating)?	¿Tiene reacciones físicas intensas cuando algo le recuerda la experiencia estresante (por ejemplo, latidos cardíacos fuertes, dificultad para respirar, sudoración)?
6.- Avoid memories, thoughts, or feelings related to the stressful experience.	¿Evita recuerdos, pensamientos o sentimientos relacionados con la experiencia estresante?
7.- Avoid external cues or reminders of the stressful experience (e.g., people, places, conversations, activities, objects, or situations).	¿Evita señales externas o recordatorios de la experiencia estresante (p. ej., personas, lugares, conversaciones, actividades, objetos o situaciones)?
8.- Difficulty remembering important parts of the stressful experience?	¿Dificultades para recordar partes importantes de la experiencia estresante?
9.- Have strong negative beliefs about yourself, other people, or the world (for example, having thoughts like I'm bad, there's something wrong with me, no one can be trusted, the world is completely dangerous)?	¿Tiene fuertes creencias negativas sobre usted mismo, otras personas o el mundo (por ejemplo, tener pensamientos como: soy malo, hay algo mal conmigo, no se puede confiar en nadie, el mundo es completamente peligroso)?
10.- Blaming yourself or others for the stressful experience or for what happened after it?	¿Se culpa a sí mismo o a otros por la experiencia estresante, o por lo que sucedió después?
11.- Have strong negative feelings, such as fear, terror, anger, guilt, or shame?	¿Tiene fuertes sentimientos negativos, como miedo, terror, ira, culpa o vergüenza?
12.- Loss of interest in activities you used to enjoy?	¿Pérdida de interés en actividades que solía disfrutar?
13.- Feeling distant or alienated from other people?	¿Te sientes distante o alienado de otras personas?
14.- Difficulty feeling positive emotions (for example, being unable to feel joy or feelings of love for those close to you)?	¿Dificultad para sentir emociones positivas (por ejemplo, ser incapaz de sentir alegría o sentimientos de amor por las personas cercanas)?
15.- Irritability, angry outbursts or acting aggressively?	¿Irritabilidad, arrebatos de ira o comportamiento agresivo?
16.- Take too many risks or do things that could have caused harm?	¿Asume demasiados riesgos o hace cosas que le podrían haber causado daño?
17.- Being "extremely alert", or vigilant, or on guard?	¿Esta "extremadamente alerta", o vigilante, o en guardia?
18.- Feel very nervous or startle easily?	¿Se sientes muy nerviosa o se asusta fácilmente?
19.- Have difficulty concentrating?	¿Tiene dificultad para concentrarse?
20.- Having difficulty falling asleep or staying asleep?	¿Tiene dificultad para conciliar el sueño o permanecer dormido?

indicate good reliability, and values > 0.90 indicate excellent reliability (Portney & Watkins, 2015).

All the statistical analyses were performed using the SPSS version 20.0 (IBM Corp. 2011; NY; USA). *P*-values of <0.05 were considered statistically significant.

Results

Participants' characteristics

The test/re-test was performed by 52 subjects, including 40 females and 12 males, with ages 43 ± 14.55 (39.26–48.28) and 45 ± 12.81 (37.75–52.25), respectively.

The following translations were carried out with only minor

Table 2

Results of reliability, test/re-test and systematic differences of the Posttraumatic Stress Disorder Checklist for DSM-5 for Castillan (PCL5-C) according to each item.

Questionnaire	Test			Re-test			Reliability test				
	Mean ± SD (IC95%)	Item–total correlation	α if item removed	Mean ± SD (IC95%)	Item–total correlation	α if item removed	ICC (95 % CI)	P value	SEM	MDC	CV
1.- Repeated, disturbing, and unwanted memories of the stressful experience?	1.54 ± 0.87	0.522 (P < 0.01)	0.928	1.42 ± 0.87	0.641 (P < 0.01)	0.933	0.947 (0.905–0.970)	0.054	0.247	0.68	0.05
2.- Repeated and disturbing dreams about the stressful experience?	0.81 ± 0.84	0.647 (P < 0.01)	0.926	0.77 ± 0.89	0.631 (P < 0.01)	0.933	0.960 (0.931–0.977)	0.414	0.266	0.73	0.03
3.- Suddenly feel or act as if the stressful experience is happening again (as if you are reliving it)?	0.67 ± 0.78	0.624 (P < 0.01)	0.926	0.73 ± 0.79	0.719 (P < 0.01)	0.931	0.976 (0.959–0.987)	0.083	0.221	0.61	0.05
4.- Feeling very distressed when something reminded you of a stressful experience?	1.15 ± 0.77	0.745 (P < 0.01)	0.924	1.15 ± 0.87	0.752 (P < 0.01)	0.931	0.956 (0.923–0.975)	1.00	0.207	0.57	0.00
5.- Have intense physical reactions when something reminds you of a stressful experience (for example, pounding heartbeats, trouble breathing, sweating)?	0.73 ± 0.88	0.671 (P < 0.01)	0.925	0.81 ± 0.95	0.703 (P < 0.01)	0.932	0.900 (0.826–0.942)	0.366	0.814	2.25	0.07
6.- Avoid memories, thoughts, or feelings related to the stressful experience.	1.08 ± 0.86	0.627 (P < 0.01)	0.926	1.17 ± 0.94	0.691 (P < 0.01)	0.932	0.874 (0.781–0.927)	0.244	0.489	1.35	0.06
7.- Avoid external cues or reminders of the stressful experience (e.g., people, places, conversations, activities, objects, or situations).	0.94 ± 0.85	0.597 (P < 0.01)	0.927	0.81 ± 0.90	0.605 (P < 0.01)	0.934	0.898 (0.821–0.942)	0.071	0.465	1.29	0.10
8.- Difficulty remembering important parts of the stressful experience?	0.65 ± 0.83	0.533 (P < 0.01)	0.928	0.60 ± 0.82	0.583 (P < 0.01)	0.936	0.847 (0.733–0.912)	0.499	0.611	1.69	0.06
9.- Have strong negative beliefs about yourself, other people, or the world (for example, having thoughts like I'm bad, there's something wrong with me, no one can be trusted, the world is completely dangerous)?	0.81 ± 0.90	0.696 (P < 0.01)	0.924	0.88 ± 1.02	0.734 (P < 0.01)	0.931	0.885 (0.801–0.934)	0.417	0.680	1.88	0.06
10.- Blaming yourself or others for the stressful experience or for what happened after it?	1.04 ± 0.86	0.646 (P < 0.01)	0.926	0.88 ± 0.85	0.652 (P < 0.01)	0.933	0.869 (0.770–0.925)	0.059	5.334	1.64	0.11
11.- Have strong negative feelings, such as fear, terror, anger, guilt, or shame?	0.92 ± 0.98	0.867 (P < 0.01)	0.920	0.90 ± 0.93	0.833 (P < 0.01)	0.929	0.939 (0.8939–0.9651)	0.763	0.230	0.63	0.01
12.- Loss of interest in activities you used to enjoy?	0.67 ± 0.81	0.679 (P < 0.01)	0.925	0.71 ± 0.87	0.833 (P < 0.01)	0.932	0.842 (0.724–0.909)	0.660	0.346	0.95	0.03
13.- Feeling distant or alienated from other people?	1.04 ± 0.90	0.612 (P < 0.01)	0.927	0.88 ± 0.98	0.693 (P < 0.01)	0.933	0.758 (0.529–0.843)	0.163	0.512	1.42	0.11

(continued on next page)

Table 2 (continued)

Questionnaire	Test			Re-test			Reliability test				
	Mean ± SD (IC95%)	Item–total correlation	α if item removed	Mean ± SD (IC95%)	Item–total correlation	α if item removed	ICC (95 % CI)	P value	SEM	MDC	CV
14.- Difficulty feeling positive emotions (for example, being unable to feel joy or feelings of love for those close to you)?	0.33 ± 0.70	0.565 (P < 0.01)	0.928	0.33 ± 0.78	0.554 (P < 0.01)	0.934	0.884 (0.790–0.934)	1.00	0.267	0.74	0.00
15.- Irritability, angry outbursts or acting aggressively?	0.85 ± 0.91	0.712 (P < 0.01)	0.925	0.87 ± 1.01	0.710 (P < 0.01)	0.932	0.878 (0.786–0.930)	0.957	0.352	0.97	0.01
16.- Take too many risks or do things that could have caused harm?	0.27 ± 0.52	0.523 (P < 0.01)	0.931	0.40 ± 0.60	0.558 (P < 0.01)	0.936	0.758 (0.522–0.837)	0.080	0.320	0.88	0.28
17.- Being “extremely alert”, or vigilant, or on guard?	1.13 ± 1.03	0.735 (P < 0.01)	0.924	1.17 ± 1.00	0.753 (P < 0.01)	0.931	0.897 (0.821–0.941)	0.660	0.322	0.89	0.02
18.- Feel very nervous or startle easily?	0.94 ± 0.93	0.804 (P < 0.01)	0.922	1.00 ± 0.95	0.843 (P < 0.01)	0.929	0.858 (0.752–0.918)	0.527	0.357	0.99	0.04
19.- Have difficulty concentrating?	0.92 ± 0.83	0.734 (P < 0.01)	0.925	0.94 ± 0.59	0.718 (P < 0.01)	0.932	0.839 (0.720–0.908)	0.813	0.279	0.77	0.01
20.- Having difficulty falling asleep or staying asleep?	1.25 ± 1.06	0.582 (P < 0.01)	0.929	1.38 ± 1.08	0.618 (P < 0.01)	0.934	0.915 (0.851–0.951)	0.106	0.317	0.87	0.07
Total score	16.58 ± 11.12 (13.48–19.67)	1.00	0.929	17.83 ± 12.96	1.00	0.935	0.944 (0.900–0.969)	0.061	0.907 (0.843–0.946)	7.91	0.05

Abbreviations: SD, standard deviation; CI 95 %, confidence interval of 95 %; CV, coefficient of variation; ICC, intraclass correlation coefficient; SEM, standard error of measurement; MDC, Minimal detectable change.

* Paired Wilcoxon signed-rank test. In all analyses, $p < 0.05$ (with a 95% confidence interval) was considered statistically significant.

Table 3

Convergent validity of Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5) with Acceptance and Action Questionnaire-II, AAQ-II.

	Correlation Test – Retest total score	Correlation Test-AAQII R* (95 % CI)	Correlation Re-test-AAQII R* (95 % CI)
Total score	0.920 (0.865–0.953)*	0.543 (0.317–0.710)*	0.435 (0.184–0.632)*

* Spearman’s rank correlation coefficient with $P < 0.001$. In all analyses, $p < 0.05$ (with a 95% confidence interval) was considered statistically significant.

discrepancies, and good agreement was observed between the two versions (Table 1). The backward translations between PCL-5 and PCL5-C were similar for most items. Cognitive interviews showed good understanding and comprehension by the participants.

Internal consistency, reproducibility (test/re-test reliability), systematic differences and Cronbach α of the PCL-5 questionnaire categorized by questions and domains from the test and re-test are shown in Table 2.

There was high internal consistency by total Cronbach’s α for the study questionnaire: 0.929 at the test assessment ($n = 52$) and 0.935 at re-test ($n = 52$). All of the items at test and re-test correlated with the total score at >0.522 and >0.554 , respectively.

Reproducibility showed excellent test/re-test reliability for the total score with ICC = 0.944, and each item with ICC > 0.758 , ranged from 0.758 to 0.935. There were no significant systematic differences in any item and total score between test and re-test scores ($p > 0.05$). The calculated between-test variabilities using the coefficient of variations (CV) for each item are shown in Table 3 and range from 0.00 to 0.28 with very low variability.

The MDC values for each item, shown in Table 3, ranged from 0.57 to 2.25 and for total score was 7.91. SEM values ranged from 0.207 to 0.814, except for item #10, with a value of 5.334, and from the total score, the SEM value was 0.907, showing a very low range of error for

each parameter.

We detected excellent test/re-test correlation reliability for the total score ($r = 0.920, p < 0.001$) (Table 3). Concerning construct validity, the total questionnaire correlated well with AAQII scores at both test and re-test at the 7-day follow-up (Table 3), showing a positive correlation at both test and re-test with values of 0.543 and 0.435, respectively (both $p < 0.001$).

Bland and Altman graph visual distributions did not show significant or clinically relevant differences between test and re-test (Fig. 1).

Discussion

The objective of this work was to validate the Posttraumatic Stress Disorder Checkable List for DSM-5 (PCL5) in mental health nurses from El Diagnostic and Statistical Manual of Mental Disorders, speaking Castilian population.

Regarding international recommended guidelines, the PCL5-C may be used as a valid questionnaire in the mental health nurses population in Spain for measuring the self-reported after a highly stressful experience involving actual or threatened death, serious injury, or sexual violence; or something that has happened directly to you; something that you witnessed; or something that has happened to a close relative or a close friend and in our case the experiences with psychiatric patients and validated with acceptance, experiential avoidance, and psychological inflexibility measure with AAQ-II.

Previously, various Spanish cross-cultural adaptations and validations were performed for PLC-5 questionnaires, reporting similar results (Durón-Figueroa et al., 2019; Reguera et al., 2021).

The Castilian version of the PCL-5 has proven to be a valid and reliable tool showing very good reliability and repeatability the diagnostic criteria of re-experiencing, avoidance, activation, and cognitive alterations and concern, AAQ-II, evaluates the concept of acceptance and experiential avoidance.

This study has some limitations: First, this PCL5–C questionnaire has been developed by mental health nurses population in mental health

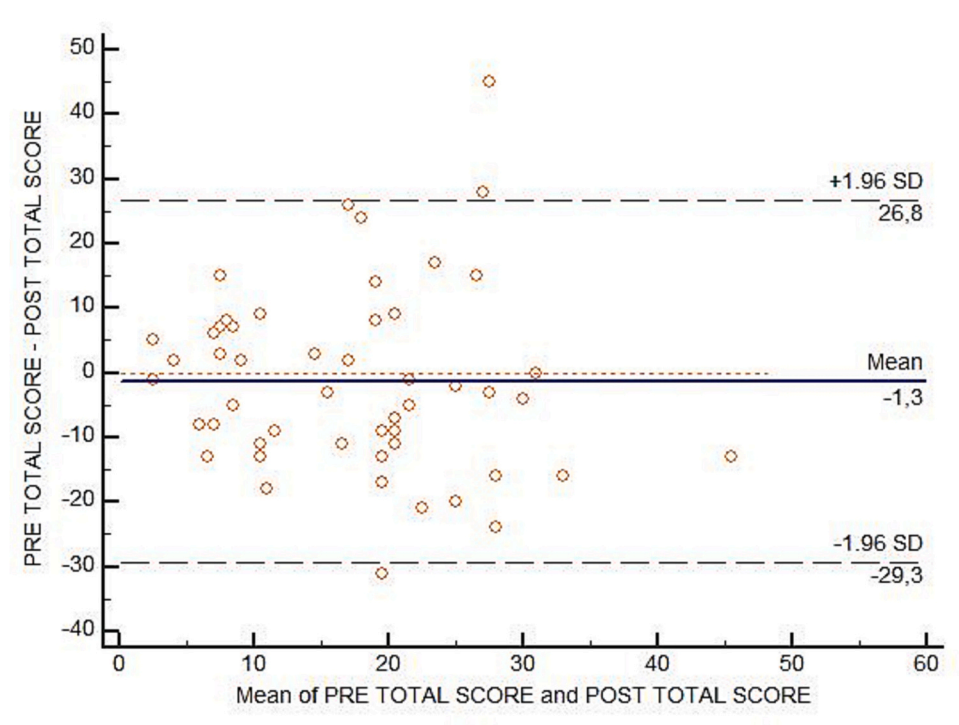


Fig. 1. Bland-Altman plot showing the agreement between test and re-test for each item.

units and hospital from only one city in Spain. Second, different age distributions (such as children) were not included in this Castilian version validation.

In addition, it is important to consider that greater control should be exercised over the different types of trauma for proper evaluation of associated disorders, according to other authors (Bryant et al., 2000).

Future studies with different populations should be conducted to test the tool in different contexts and cultural diversity. It is necessary to develop this questionnaire between other health professionals and extend it to the Castilian speaking population, while including more age ranges.

Conclusion

The Castilian version of the Posttraumatic Stress Disorder Checkable List for DSM-5 (PCL5-C) was shown to be a valid and reliable questionnaire. This scale may be used for exploratory research purposes with the general Spanish population. To our knowledge, this scale is the first and only instrument validated for evaluating Posttraumatic Stress Disorder according to the DSM-5 criteria.

Declaration of competing interest

None.

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