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A Spanish cross-cultural adaptation of the Quality in Psychiatric Care – Forensic In-patient Staff (QPC-FIPS) instrument: Psychometric properties

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Abstract

"Quality in Psychiatric Care - Forensic Inpatient Staff (QPC-FIPS) is an instrument of Swedish origin validated to measure the perception of the quality of mental health care provided by forensic psychiatry professionals. The aim of this study was to cross-culturally adapt the QPC-FIPS instrument and to evaluate the psychometric properties of the Spanish version of the instrument. A psychometric study was carried out. For validity, content validity, convergent validity and construct validity were included. For reliability, the analysis of internal consistency and temporal stability was included. The sample consisted of 153 mental health professionals from four Forensic Psychiatry units. The adapted Spanish version of the QPC-FIPS scale was configured with the same number of items and dimensions as the original. The psychometric properties, in terms of temporal stability and internal consistency, were adequate and the factor structure, such as the homogeneity of the dimensions of the Spanish version of the QPC-FIPS, was equivalent to the original Swedish version. We found that the QPC_FIPS-Spanish is a useful, valid and easy-to-apply instrument for assessing the self-perception of professionals regarding the care they provide, as well as, identifying elements for the improvement of the quality of care.

Introduction

Several studies indicate that the forensic environment currently holds more people with mental health problems than any other institution; between 15% and 26% of people who have been in prison have been diagnosed with a mental health problem ¹. Another study indicates that one in seven people admitted to prison worldwide has suffered from a serious mental disorder ².

In Spain, the magnitude of this phenomenon has been described on several occasions. The most representative results were those from the study "Prevalence of mental disorders in Spanish prisons". These results show that the prevalence mental health problem in a penitentiary environment is 84.4% ³. To this, Tort et al. indicate that we must add the "factors related to one's own incarceration that have an influence on their health situation." ⁴

Consequently, there is a clear need to evaluate the quality of care provided by the professionals in Penitentiary Psychiatric Units. In forensic psychiatry there is a growing interest in the evaluation of quality of life and care as an outcome measure ⁵ and also as a variable in the evaluation of the likelihood of criminal recidivism ⁶.

'Quality' was defined by Donabedian as *"*that which is expected to provide the user with the maximum and most complete well-being after assessing the balance of gains and losses that can accompany all its parts "⁷. Quality of care can be understood as a multidimensional concept based on three interrelated elements: professional care, interpersonal relationships and comforts of the environment ⁸.

Measuring and improving the quality of health system care is of global interest⁹. Despite this, there is a lack of crosscultural comparative studies on the perception of patients and professionals regarding quality of care ^{10,11} and even fewer in the forensic field. This is mainly due to an absence of standardized psychiatric instruments in cross-cultural studies.

A systematic psychometric review was published in 2018¹¹ in which 22 instruments on quality and satisfaction with mental health care according to professionals and patients were analyzed. This study shows that the instruments with the best psychometric properties most appropriate for the analysis of quality of care are: The Psychiatric Out-Patient Experiences Questionnaire (POPEQ)¹², The Questionnaire of Experiences of General Practitioners (GPEQ)¹³, the Quality Indicator for Rehabilitative Care (QuIRC)¹⁴, Combined Assessment of Psychiatric Environments (CAPE)¹⁵ and the Quality in Psychiatric Care-Forensic In-Patient (QPC-FIP)¹⁶. The review empasizes that the QPC family of instruments is the most suitable for use due to its validation with professionals and patients in different areas (community, hospital and forensic).

The QPC (Quality of Psychiatric Care) instrument was developed from the phenomenographic study by Schröder, Ahlström and Larsso ¹⁷ which focused on the search for the dimensions that characterize the quality of care received in various areas of mental health care: hospital admission, community care and forensic psychiatry units. Each of the areas has developed a specific, self-administered instrument to assess quality of care from the perspective of the professionals and the people served ¹⁷.

In Spain, the respective instruments for hospital professionals ¹⁸, inpatients ¹⁹ and outpatient staff ²⁰ have been validated. Within the scope that concerns us, the QPC-FIPS (Quality of Psychiatric Care-Forensic Inpatient Staff), QPC version for professionals in the field of forensic psychiatry, has not been validated in Spanish.

The current version of the QPC-FIPS scale is Swedish ²¹ and the first cross-cultural adaptation is a Danish version ¹⁶. Thus, it is considered necessary to carry out this adaptation to assess the quality of care provided in prison mental health units with the aim of improving such care and contributing to the comparison of results in different countries.

In this context, the objective of this study was to adapt the QPC-FIPS instrument to Spanish and analyze its reliability and validity.

Methods

Design

A psychometric study was conducted, translating the QPC-FIPS instrument into Spanish and assessing its psychometric properties, including content validity, convergent validity, construct validity, internal consistency, and test-retest reliability.

Phase 1

Adaptation of the Quality Psychiatric Care - Forensic Inpatient Staff (QPC-FIPS) instrument. This phase was carried out following the recommendations of experts in questionnaire adaptation.

Phase 2

Validation of the psychometric properties of the QPC_FIPS-Spanish scale. This phase consists of a psychometric study of the reliability and validity of the Spanish version of the QPC_FIPS instrument in a sample of professionals in forensic mental health units.

Study sample

The sample consisted of professionals from different disciplines who work in forensic mental health units (nursing, psychiatry, psychology, social education, nursing assistance, social work, and occupational therapy), who participate voluntarily. Having less than six month's experience in the area of mental health was established as an exclusion criterion. Non-probability convenience sampling was used.

Calculation of the sample size was based on internal consistency and temporal stability. Estimation of internal consistency was performed following the recommendations of Streiner, Norman & Cairney, who considered that between 5 and 20 individuals should be included for each instrument item ²². To analyze temporal stability, it was estimated that a minimum of 60 professionals would be needed to detect an intraclass correlation coefficient (ICC) around 0.70 between two administrations of the instrument, assuming a confidence level of 95% and a power of 80% in a bilateral comparison ²³.

Variables, instruments and sources of information

First, the sociodemographic and labor data of the sample were collected: age, sex, professional category, time of experience in the unit.

Professional perception of quality care was obtained using QPC-FIPS-Spanish. This version is an adaptation of original questionnaire QPC-FIPS²¹.

The QPC-FIPS is a self-administered questionnaire consisting of 34 items and measures 7 dimensions of quality of care: encounter (8 items), participation (8 items), discharge (3 items), support (4 items), isolation (2 items), safe environment (3 items) and forensic specifications (6 items). Each item is related to the statement "I consider that..." and responses are based on 4-point Likert scales, where 1 corresponds to "strongly disagree" and 4 to "strongly agree". All items also have the option "does not correspond".

To analyze convergent validity, the NTP 394 general satisfaction scale created by Warr et al. ²⁴ was used. This scale, which evaluates working conditions (intrinsic and extrinsic), consists of 15 items evaluated on a scale of 1 to 7 (1 "very dissatisfied" and 7 "very satisfied"). The version used for the convergent validity was the one validated in Spanish by Pérez and Fidalgo ²⁵.

Procedure and data collection process

The translation and back-translation process was carried out following the Standards for Educational and Psychological Testing ²⁶.

First, the original version was translated into Spanish by two independent native-speaker translators who had no knowledge of the instrument or the aims of the study. A group of experts comprising a specialist in psychometrics, three quality experts, five nurses specializing in mental health, a psychologist and a psychiatrist specializing in forensic medicine previously assessed semantic equivalence (grammatical difficulties in translation, equivalent meaning of words), and idiomatic (contextualization of the text, colloquialisms) and conceptual equivalence. The translation and back-translation process did not present any major difficulties. The expert committee suggested modifying only two items. Item 30 ("staff help patients, if they wish, to present their wishes and their case to the administrative court" for "users can access the judge through their lawyer or the legal guidance service") and item 33 ("patients receive help from the staff to elaborate their crime" for "during the stay in the penitentiary the professionals help the users to talk about the crime they committed"). Finally, the term "patients" was replaced by "users" and "staff" by "professionals", and inclusive non-discriminatory language was used when referring to gender.

Finally, a pilot cognitive pretest, was carried out on 30 professionals in order to assess comprehension and completion time. The average time taken to complete the questionnaire ranged between 15 and 20 minutes and no item presented difficulty regarding comprehension. Following the debriefing, it was not considered necessary to make any changes to either format of content. The Spanish adapted version of the QPC-FIPS scale was configured by the same number of items and dimensions as the original, with the final version in Spanish named QPC_FIPS-Spain.

The adaptation and psychometric evaluation process was carried out in four forensic mental health units at Parc Sanitari Sant Joan de Déu, Barcelona, Spain. Data collection was carried out between February, 2019 and December, 2021.

Statistical analysis

The SPSS Statistics program version 26 was used for analyses, along with EQS program version 6.2 for the confirmatory factor analysis (CFA) ²⁷.

Construct validity

Construct validity was analyzed through confirmatory factor analysis (CFA) with estimated parameters using the method of least squares generalized with a polychoric correlation matrix. The criteria for a good fit were BBNFI, BBNNFI, GFI, AGFI, CFI

close to 0.90 $^{28-30}$; the ratio of chi square to degrees of freedom ($\chi 2/df$) < 3. The value of the mean square approximation error (RMSEA) and the standard error of standardized root mean (RMSR) was less than 0.08 31,32

Convergent validity

The General Satisfaction Scale NTP 394 was used for convergent validity; an analysis of the Pearson correlation coefficient was performed. Furthermore, as an additional method, a Pearson correlation analysis was also performed between the factors of the QPC-FIPS questionnaire with the aim of verifying the Fayers & Machin ³³ hypothesis which indicates that the correlation was higher between each factor and the general scale than the correlations between the subscales.

Reliability

To evaluate the internal consistency of the instrument at a general level and for each of the factors, Cronbach's alpha was used, with a value greater than or equal to .70²² considered adequate reliability. Temporal stability or test-retest reliability was evaluated after 7–14 days through the CHF in a sample of 77 professionals. A value greater than or equal to .70 was considered an indicator of good agreement ²². In addition, composite reliability was calculated. Item analyses included the calculation of item means, standard deviations, and corrected total item correlation.

Ethical aspects of research

This study was approved by the research ethics committee at the Sant Joan de Déu Foundation, under CEIC code PIC-73-18. All research was conducted in accordance with relevant guidelines and regulations. All participants were informed about the objective of the study and gave their written consent to participate voluntarily and anonymously.

Results

Sociodemographic characteristics of the participants

A total of 153 professionals participated, of which 38.6% were women and 38.6% men. The mean age was 39.92 ± 9.8 years while the mean of years worked in forensic units was 7.1 ± 4.9 years. The sample consisted of a variety of professional categories, underlining the presence of 21.6% of nurses. Some 85% of professionals stated that they would define the work environment as good or very good and highlight the possibility of bringing about quality improvement.

Construct validity

Confirmatory factor analysis (CFA)

Confirmatory factor analysis was used to verify the internal structure of the instrument. The CFA shows a chi-square value of (χ 2 = 1115.705; df = 506; p < .0001). The indices BBNNFI, GFI, AGFI, CFI show an adjustment close to .90; the ratio between chi square and degrees of freedom (χ 2/df) was 2.20, that is, achieving an index less than 3, and the value of the mean square error of approximation (RMSEA) of .08, and a value lower than .08 was also obtained for the RMSR. All indices showed a reasonable adjustment. Table 1 shows the fit of the model.

Table 1
Goodness-of-fit indices for the confirmatory model QPC-FIPS Spanish

BBNFI	.613				
BBNNFI	.709				
GFI	.935				
AGFI	.923				
CFI	.738				
RMSR	.048				
RMSEA	.089				
Cronbach's alpha	.916				
Goodness of fit test	χ2 = 1115.705; df = 506; p < .0001				
Adjustment reason	χ2 / df = 2.20				
BBNFI: Bentler Bonnet Normed Fit Index. BBNNFI: Bentler Bonnet Non-Normed Fit Index. GFI: Goodness of Fit Index. AGEI: Adjusted Goodness of Fit Index. CEI: Comparative Fit Index. BMSR Root Mean Standard Error Standardized					

RMSEA: Root Mean Square Error of Approximation. df: Degrees of freedom

The adaptation in Spanish reproduces the structure of the instrument in its original language where the different items are grouped into 7 factors. Figure 1 shows the saturation of all items. All saturations were equal to or greater than .40.

Confirmatory Factor Analysis (λij)

Convergent validity

Convergent validity was analyzed using Pearson's correlation coefficient with the NTP 394 General Satisfaction Scale. The correlation obtained was r = 0.463 (p < 0.0001). Table 2 shows the correlations between factors and with the total score of the instrument. F1. "Encounter" and F2." Participation" correlated most strongly with the total instrument (r = .796 and r = .837 respectively).

Table 2
Correlations among the subscales of the SPANISH QPC-FIPS

	Encounter	Participation	Discharge	Support	Secluded environment	Secure Environment	Forensic specific	Total QPC- FIPS
F1. Encounter	1							
F2. Participation	.498*	1						
F3. Discharge	.491*	.495*	1					
F4. Support	.772*	.393*	.463*	1				
F5. Secluded Environment	.207*	.494*	.357*	.180*	1			
F6. Secure Environment	.329*	.499*	.309*	.208*	.355*	1		
F7. Forensic specific	.442*	.571*	.434*	.356*	.427*	.394*	1	
Total QPC- FIPS	.796*	.837*	.687*	.685*	.547*	.588*	.749*	1
$n = 153$; (*) All correlation coefficients are significant at $p \ge 0.05$								

Reliability

Cronbach's alpha internal consistency coefficient for the entire instrument was 0. 916. However for the F3 factor., "Discharge" it was .558, F5." Secluded Environment" was .405 and F6." Secure Environment" was .590. Table 3 shows the results.

The ICC analysis showed that the test-retest reliability was .802 (95% CI: .689 - .874; n = 77), and this value was greater than. 70 in all instrument factors except F1. "Encounter" and F4." Support" with values of .641 and .605, respectively (Table 4).

Factors	ICC (CI 95%)	Cronbach's alpha				
F1. Encounter	0.641 (0.435-0.771)	0.864				
F2. Participation	0.903 (0.847-0.938)	0.823				
F3. Discharge	0.865 (0.788-0.914)	0.558				
F4. Support	0.605 (0. 379–0.749)	0.853				
F5. Secluded Environment	0.867 (0.790-0.915)	0.405				
F6. Secure Environment	0.877 (0.807-0.922)	0.590				
F7. Forensic specific	0.732 (0.578-0.830)	0.698				
Total	0.802 (0.689–0.874)	0.916				
ICC: Intraclass Correlation Coefficient; CI: Confidence Interval						

Table 3

Table 4 shows the description of each of the items. The mean value of the items ranged from 2.27 to 3.71 (standard deviation from .54 to 1.0). On the other hand, the corrected total item correlation was higher than .20 in all items. Nor does instrument reliability improve if any of the items are eliminated.

		1113 01 1110					
Summary of the contents of the items			SD	Corrected item- total correlation	Cronbach's alpha Total instrument without item		
Encounter							
P7	Gives support when the users need it		.73	.349	.915		
P10	Committed professionals	3.34	.83	.509	.913		
P11	Shows empathy	3.57	.64	.661	.912		
P12	Cares if the users get angry	3.66	.62	.568	.913		
P15	Respects the users	3.61	.62	.526	.913		
P17	Shows understanding	3.26	.72	.622	.912		
P19	Has time to listen	3.56	.65	.533	.913		
P24	Cares about the users' care	3.66	.57	.553	.913		
Participation							
P1	Users have influence over their care	2.27	.81	.460	.914		
P5	Users' view of the right care is respected	2.75	.78	.573	.913		
P6	Users take part in decision-making about their care	2.59	.81	.562	.913		
P13	Benefit drawn from the patient's earlier experience of treatment	2.99	.83	.480	.914		
P14	Users helped to recognize signs of deterioration	3.39	.78	.492	.914		
P25	Users informed in a way that they understand	3.20	.71	.474	.914		
P27	Users have knowledge about their mental troubles	3.11	.69	.548	.913		
P28	Users receive information about treatment alternatives	2.66	.81	.558	.913		
Discharge							
P8	Planning of the users' continued treatment	2.98	.76	.433	.914		
P16	Users are offered follow-up after discharge	2.84	1.08	.474	.914		
P20	Users know where to turn	3.45	.72	.460	.914		
Support							
P18	Stops the users from hurting others	3.64	.59	.573	.913		
P21	Stops the users from hurting themselves	3.71	.54	.481	.914		
P22	Nothing shameful about having mental troubles	3.69	.57	.518	.914		
P23	Shame and guilt must not get in the way	3.71	.55	.590	.913		

Table 4 Descriptive Statistics of the Items of the OPC-FIPS Scale and Cronbach's alpha

Summary of the contents of the items			SD	Corrected item- total correlation	Cronbach's alpha Total instrument without item			
Secluded environment								
P3	Access to secluded place	2.92	.94	.471	.914			
P26	There's a secluded place	3.06	.92	.276	.917			
Secure Environment								
P2	High level of security in ward	3.22	.84	.275	.917			
P4	Feel secure with fellow users	2.99	.76	.526	.913			
P9	Not disturbed by fellow users	2.38	.78	.370	.915			
Forensic specific								
P29	Informed of their rights	2.97	.84	.604	.912			
P30	Help the users in contact with the Administrative Court	3.45	.84	.290	.917			
P31	The doctor explains the users' medical reports clearly	2.79	.82	.465	.914			
P32	Support from their lawyer	2.84	.76	.410	.915			
P33	Professionals help the users to talk about their crimes	2.94	.78	.362	.915			
P34	Professionals involved in the users' care	2.56	.77	.414	.915			
SD. Standard Deviation								

Discussion

The objective of this study was to adapt the Quality in Psychiatric Care Inpatient Staff (QPC-FIPS) instrument to Spanish, as well as analyzing its reliability and validity. The purpose of the adaptation is to have a useful instrument to evaluate the quality of the care provided and to compare, in the future, the perception of the professionals with that of the people treated in the penitentiary mental health units.

The process of translation and back-translation from the original version²¹ did not present any major difficulties. The expert committee suggested modifying two elements to improve comprehension in their cross-cultural adaptation. These results are consistent with what is specified in the Danish adaptation ¹⁶¹⁶ of the instrument, therefore, it is demonstrated that the construct of quality in care in penitentiary mental health units has a similar meaning to that proposed in the Swedish or Danish context.

In relation to the sample used, it is worth noting the smaller number of participants (153) in our study compared to the original Swedish version (348) ²¹ and the Danish adaptation (630) ¹⁶; although the percentage proportion of women (60%) and men (40%) with a similar mean age and representation of the different professional categories in a similar way is maintained.

At the psychometric level, the results of the Spanish adaptation of the QPC-FIPS were adequate. Regarding construct validity, the CFA showed a significant chi-square value (2 = 1115.705; df = 506; p < .0001); results which are very similar to the Danish ¹⁶ and Swedish versions ²¹. The convergent validity of the instrument was calculated using the Pearson correlation ratio between the QPC-FIPS and the NTP 394 General Satisfaction Scale. The correlation obtained was

moderate. Furthermore, as an additional method, a Pearson correlation analysis was also performed between the factors of the QPC-FIPS questionnaire. It was observed that, in the vast majority of cases, the correlation coefficients between the QPC-FIPS factors were moderate (0.40-0.60). While it is true that a greater degree of correlation between the correlation coefficients is observed in the Danish¹⁶ or Swedish version²¹, we noted that the correlation was higher between each factor and the general scale than the correlations between the subscales, confirming the Fayer & Machin (2000) hypothesis. With respect to reliability, the internal consistency of the instrument was evaluated at a general level, showing a Cronbach's alpha of .916, which is similar to that obtained with the original version $(.94)^{21}$ and the Danish adaptation $(.93)^{16}$. Regarding the internal consistency of each of the factors, it should be noted that in each of the versions of the QPC-FIPS created so far, Swedish, Danish and Spanish, the factors with the lowest score are F3. "Discharge", F5. "Secluded environment" and F6. "Secure Environment"; with F7 "Forensic specific" (Lundqvist et al., 2014) added to this list from the Danish version. The ICC analysis showed that the test-retest reliability was adequate at .802 (95% CI: .689 – .874; n = 77).

When analyzing the psychometric measures of the QPC-IPS-Spanish scale, validated in the hospital context, we found that the factors indicated above: F3. "Discharge", F5. "Secluded environment" and F6. "Secure Environment" also show a lower score ¹⁸. Finally, the psychometric properties of this instrument also agree with those obtained in the adaptation of QPC_OPS-Spanish scale, validated at the community level ²⁰.

Limitations

Recruitment itself was a limitation due to the limited number of professionals working in the field of forensic psychiatry. However, this limitation is mitigated by the comparison of similar psychometric outcomes in the original studies of Lundqvist et al. (2014) ¹⁶ as well as those carried out in our context with mental health professionals from other healthcare settings ¹⁸.

Another limitation is in relation to convergent validity. During the instrument selection phase, no instrument was found in the Spanish context that could be considered as the "Gold Standard" with which to correlate the instrument to be validated, therefore, the NTP 394 instrument was used, bearing in mind the limitation that could emerge.

Steps should be taken in future research to avoid the present limitations.

Conclusion

The results obtained indicate that the psychometric properties in terms of temporal stability and internal consistency are adequate and that the factorial structure of the Spanish version of the QPC-FIPS is equivalent to the original Swedish version ²¹, demonstrating that the concept of quality perceived by professionals at forensic psychiatry units in Spain fits the concept of their counterparts in Sweden ²¹. Likewise, the factorial loads, such as the homogeneity of the dimensions, were also similar to those of the Swedish version. The Spanish version of QPC-FIPS is the first instrument that allows assessment of the perceptions of forensic psychiatry professionals in Spain regarding the care they provide.

Declarations

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AUTHOR STATEMENT

M.D.d.C., Data curation, Formal analysis, Writing Original draft preparation, Writing - Review & Editing. A.R.M.P., Writing Original draft preparation, Writing - Review & Editing. M.P.LL, Conceptualization, Methodology, Writing - Review & Editing. M.T.LL.C, Conceptualization, Methodology, Writing - Review & Editing. N.F.R.Z, Conceptualization, Methodology, Data curation, Formal analysis, Writing Original draft preparation, Writing - Review & Editing. M.T.J., Formal analysis, Writing Original draft preparation, Writing - Review & Editing. S.S.B, Conceptualization, Methodology, Writing - Review & Editing. A.S., Conceptualization, Writing - Review & Editing. L.O.L., Conceptualization, Writing - Review & Editing. G.E.R., Data curation, Writing - Review & Editing. J.R.M, Conceptualization, Methodology, Formal analysis, Writing Original draft preparation, Supervision, Writing - Review & Editing.

DATA AVAILABILITY

The data that support the findings of this study are available upon reasonable request from the corresponding author. The data are not publicly available due to privacy and ethical restrictions. The data were taken from our own study.

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Figures



Figure 1

Factor loadings derived from the LS estimation (least squares)

Confirmatory Factor Analysis (λij)

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