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Palsson, Thorvaldur Skuli; Skou, Søren Thorgaard; Pape, Morten Haugaard; Hirata, Rogerio Pessoto; Rafn, Trine; Bellosta-López, Pablo; Christensen, Steffan Wittrup McPhee

RESEARCH ARTICLE

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Cross-cultural translation and adaptation of the Danish version of the brief version of the 10-item Big Five Inventory

Thorvaldur Skuli Palsson[1,2] 🄳 | Søren Thorgaard Skou[3,4] 🄳 |
Morten Haugaard Pape[5] | Rogerio Pessoto Hirata[1,6] 🄳 | Trine Rafn[1] |
Pablo Bellosta-López[7] 🄳 | Steffan Wittrup McPhee Christensen[1,8] 🄳

[1]Department of Health Science and Technology, Aalborg University, Aalborg, Denmark

[2]Department of Physiotherapy and Occupational Therapy, Aalborg University Hospital, Aalborg, Denmark

[3]Research Unit for Musculoskeletal Function and Physiotherapy, Department of Sports Science and Clinical Biomechanics, University of Southern Denmark, Odense, Denmark

[4]Department of Physiotherapy and Occupational Therapy, Næstved-Slagelse-Ringsted Hospitals, Slagelse, Denmark

[5]Department of Physiotherapy, Johnson Instituttet, Odense, Denmark

[6]Sport Sciences – Performance and Technology, Faculty of Medicine, Department of Health Science and Technology, Aalborg University, Aalborg, Denmark

[7]Department of physiotherapy, Universidad San Jorge, Campus Universitario, Zaragoza, Spain

[8]Department of Physiotherapy, University College of Northern Denmark, Hjørring, Vendsyssel, Denmark

Correspondence
Pablo Bellosta-López, Department of Health Science, Universidad San Jorge, Campus Universitario Villanueva de Gállego, Autovía A-23 Zaragoza-Huesca Km. 299, Villanueva de Gállego, 50830 Zaragoza, Spain.
Email: pbellosta@usj.es

Abstract

Background: Personality traits are associated with pain-related beliefs and coping strategies, and different chronic conditions are linked through specific personality profiles. This highlights the importance of having valid and reliable measures of personality traits for use in clinical and research settings when assessing patients in chronic pain.

Purpose: To translate and cross-culturally adapt the 10-item Big Five Inventory (BFI-10) into Danish.

Methods: A bilingual expert panel ($N = 4$) and a panel of laymen ($N = 8$) translated and culturally adapted the questionnaire into Danish. Face validity was evaluated in a group of persons suffering from recurring or ongoing painful conditions ($N = 9$). Data were collected to evaluate the internal consistency, test–retest reliability and factor structure ($N = 96$).

Results: Some of the participants in the lay panel considered the questionnaire too short, considering its aim of assessing personality. Acceptable internal consistency was found for two out of five subscales (0.78 for both Extraversion and Neuroticism), while the internal consistency was non-acceptable for the remaining subscales (0.17–0.45). Test–retest reliability was acceptable for three subscales (0.80 for Neuroticism, 0.84 for Conscientiousness, and 0.85 for Extraversion). Assumptions for determining the factor structure were not met and therefore was this analysis omitted.

Discussion: Although face valid, only two out of five subscales had acceptable internal consistency and only three subscales had acceptable test–retest reliability. These findings indicate that interpreting findings regarding personality using the Danish BFI-10 should be done with caution.

KEYWORDS
cross-cultural comparison, personality, psychometrics, translations

1 | INTRODUCTION

It is widely recognized that chronic pain is a complex and multidimensional phenomenon (Turk & Okifuji, 2002) that is influenced by several modulating factors, ranging from the nociceptive input to the actual processing of these sensory signals (Arendt-Nielsen & Graven-Nielsen, 2011; Gwilym et al., 2008; Turk & Okifuji, 2002). An awareness of the association between personality traits and chronic pain conditions has existed for hundreds of years, most likely due to the inadequacy of the biomedical model in terms of explaining chronic pain (Gamsa, 1994; Naylor et al., 2017).

The multidimensional complexity of pain requires an approach, which acknowledges varying contributions from biomedical, emotional, cognitive, and social processes (Edwards et al., 2016). Specific personality traits are associated with pain-related beliefs, unhelpful coping strategies (Asghari & Nicholas, 2006; Bucourt et al., 2017; Williams et al., 1994) and pain medication misuse (Clark et al., 2017). Moreover, personality disorders are more common in people with chronic pain (Naylor et al., 2017) where different chronic pain types and conditions are linked through a mutual personality profile (Gustin et al., 2016; Naylor et al., 2017). Personality traits are stable, although they may change across a life span (Schwaba & Bleidorn, 2018; Srivastava et al., 2003). Based on the above, it is important that physiotherapists and other healthcare professionals are mindful of various personality traits and how these may inform the clinical assessment and be accounted for in the management strategy.

Personality is commonly divided into specific personality traits and assessed in relation to how an individual interprets and interacts with the environment (Sadock et al., 2017). In recent years, assessing five main personality traits, referred to as the Big Five (Raad, 2000), has been widely used: extraversion, agreeableness, conscientiousness, neuroticism, and openness (Costa & Mccrea, 1992). One of the most well-established and widely used instruments to quantify the five personality traits is The Big Five Inventory (BFI) (John et al., 2008). The full 44-item BFI, containing five subscales (one per trait) was developed in the 1990s (John et al., 1991; John & Srivastava, 1999) but since then, a growing demand for a shorter version, applicable in clinical practice and as part of larger research studies, has emerged (Rammstedt & John, 2007). This led to the development of the 10-item BFI-10, with two items per subscale, which has previously demonstrated acceptable levels of reliability and validity in English and German in comparison to the full BFI (Rammstedt & John, 2007).

The BFI has recently been found both valid and reliable in Danish (Palsson et al., 2020). The length of this version (44 items) may however make it less feasible to use for short screening purposes. The BIF-10 has not previously been cross-culturally adapted and scrutinized for its psychometric properties in Danish. Therefore, the aim of this study was to first translate and culturally adapt the BFI-10 into Danish.

2 | METHODS

2.1 | The Big Five Inventory, 10-item version

Each of the 10 items includes a statement where the individual respondent indicates his/her level of agreement on a five-point Likert scale, ranging from (1) Disagree strongly to (5) Agree strongly. Based on the two items from each subscale, five subscale scores are calculated. Items 1, 3, 4, 5, and 7 (one from each subscale) are scored by reversing the response, for example, a score of 2 is reversed to 4, while the rest is scored according to the actual response (John & Srivastava, 1999; Rammstedt & John, 2007).

2.2 | Design

To ensure the most accurate translation, we applied a multistep approach involving a centralized review process (Acquadro et al., 2008). The study was divided into three phases; (1) a translation phase followed by (2) a two-step validation phase (including feedback from panels two and three), supervised and evaluated by the authors, and finally (3) an evaluation of the internal consistency, test–retest reliability, and standard error of measurement (SEM) (Figure 1). The process of translation was conducted alongside the translation of the full BFI with the same participants, but as two separate questionnaires and processes (Palsson et al., 2020). Specifically, the participants were asked to first translate the full version of the BFI and then afterward, the BFI-10. None of the panels included professional translators.

According to the Danish Act on Research Ethics Review of Health Research Projects, studies that only involve interviews and
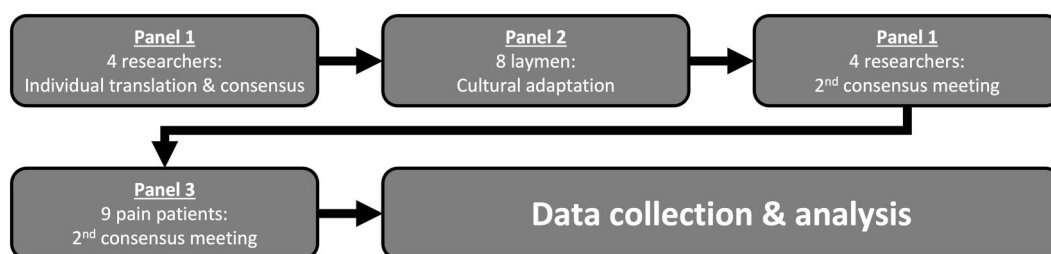

FIGURE 1 A schematic overview of the project's panels including a short description of activities in each phase.

questionnaires do not require approval from the ethics committee. Nevertheless, all participants were asked to provide their informed consent prior to participating. The study was reported to the Danish Data Protection Agency. The current report adheres to the Guidelines for Reporting Reliability and Agreement Studies (GRRAS) (Kottner et al., 2011).

2.3 | Phase 1: translation

We applied a dual-panel translation approach, as it has been demonstrated to be advantageous as compared with the forward–backward translation method in terms of preferences by the target population and laymen without any apparent psychometric differences between the two methods (Hagell et al., 2010). The translation followed the recommendations by Swain-Verdier et al. (2004) and was conducted by a bilingual panel (panel 1) and a panel consisting of laymen (panel 2). The four-researcher bilingual (Danish and English) panel 1 (Table 1) independently translated the English version of the BFI-10 (Rammstedt & John, 2007) into Danish after which a consensus meeting, led by the lead author (Thorvaldur S. Palsson), was held. At the meeting, the individual translations were compared and any disagreements were resolved through discussion until consensus had been reached. After explaining the purpose of the study, this version of the questionnaire was then administered to eight laymen (panel 2, Table 1), who were asked to independently review the translated questionnaire. The panel members were not asked to translate the questionnaire but to evaluate whether the wording in the translated version reflected the original English version. Following this, a focus group interview with all members of the panel, led by Morten H. Pape, was held. During the interview, the panel qualified the phrasing of the translated questionnaire to ensure that it could be administered to laymen of different ages and professions. Following the interview, panel 1 met again to discuss the changes in phrasing suggested by panel 2. Suggestions to changes that were considered appropriate were implemented.

2.4 | Phase 2: face validity

There is a growing interest into investigating whether ongoing, painful clinical conditions can be attributed to the personality of the sufferer (Bar-Shalita & Cermak, 2019; Clark et al., 2017; Grouper et al., 2021). Therefore, a third panel, consisting of nine patients suffering from recurring or ongoing painful conditions and undergoing treatment at an out-patient clinic, was recruited to independently review and fill out the questionnaire. The composition of the panel was determined with the heterogeneity of standard clinical practice

TABLE 1 Demographics of participants in panel 1 (top), panel 2 (middle), and panel 3 (bottom).

	Gender	Age	Occupation	Diagnosis
Panel 1	Male	35	Academia (PhD)	N/A
	Male	37	Academia (PhD)	N/A
	Male	38	Academia (PhD)	N/A
	Male	30	Academia (MSc)	N/A
Panel 2	Female	36	Administrative worker	N/A
	Male	33	Book keeping	N/A
	Male	36	Insurance broker	N/A
	Male	37	Medical doctor	N/A
	Male	66	Retired	N/A
	Female	65	Retired	N/A
	Male	65	Retired	N/A
	Male	46	Auto mechanic	N/A
Panel 3	Male	46	Works with disabled	Multiple sclerosis
	Male	44	Incapacity benefit	Hemiparesis after stroke
	Male	67	Retired	Psoriatic arthritis
	Male	84	Retired	Hemiparesis after stroke
	Male	52	Incapacity benefit	Multiple sclerosis
	Female	74	Retired	Osteoarthritis
	Male	61	Incapacity benefit	Syringomyelia
	Male	83	Retired	Hemiparesis after stroke
	Male	72	Retired	Chronic symptoms following meningitis

in mind where pain was the only factor the panel members had in common. For the patient profile, see Table 1. During a subsequent focus group interview led by Morten H. Pape, panel three discussed the questionnaire. Their feedback was then presented to panel 1, who integrated all relevant changes into the final version of the questionnaire (Appendix A).

2.5 | Phase 3: internal consistency, test–retest reliability, standard error of the measurement, smallest detectable change, and factor structure

One hundred people of different age, gender, profession, and educational level were invited to complete the final version of the translated questionnaire twice with a 7-day interval. These data were used to assess internal consistency, test–retest reliability, and SEM of the questionnaire. The data were likewise used to investigate the factor structure. Internal consistency measures the extent to which items from a specific subscale of a questionnaire are correlated, while reliability measures the extent to which people can be distinguished from each other, despite of the measurement error (de Vet et al., 2011; Terwee et al., 2007). The SEM measures the measurement error of the questionnaire (de Vet et al., 2011; Terwee et al., 2007). The construct validity attempts to measure if the questionnaire validly measures the constructs and underlying dimensions that are going to be measured (Kirshner & Guyatt, 1985; Streiner & Norman, 2003). Determining structural validity is only recommended to be done if the dataset is acceptable, as determined by the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy (Kaiser, 1974).

2.6 | Sample size

In phases 1 and 2, we aimed at recruiting between 5 and 10 individuals for each panel similar to what previous studies with similar aims have done (Hagell et al., 2010; Riel et al., 2019; van Genderen et al., 2016) assuming that data saturation could be reached (Malterud et al., 2015). In phase 3, we aimed at including 100 people based on published recommendations (Terwee et al., 2007) and previous studies with similar aims (Hansen et al., 2018; Zhang et al., 2018). Participants were recruited through convenience sampling.

2.7 | Test–retest reliability, internal consistency, criterion validity, and factor solution

To determine the reliability and internal consistency of the Danish version of the BFI-10, we asked 100 people to fill out the questionnaire twice with a gap of 7 days in between. To investigate the criterion validity, we evaluated the correlation between the items in each subscale and the corresponding items from the dataset from a

previously published translation study on the full version of the BFI (Palsson et al., 2020). To determine whether the assumptions for performing a factor analysis in the data were met, we applied a KMO measure of sampling adequacy and a Bartlett's test of sphericity. Pending on the outcome, a confirmatory factor analysis (CFA) or a principal component analysis (PCA) with a five-factor varimax rotation was performed to evaluate the structural validity, that is, how well the items measured loaded onto the different subscales (constructs) of the questionnaire. Standardized factor loadings higher than 0.4 were considered acceptable (Hair et al., 2006).

An a priori power calculation was not performed but the group size was deemed sufficient based on previous studies with similar aims (Hansen et al., 2018; Zhang et al., 2018).

2.8 | Analysis

To investigate the internal consistency of the questionnaire, the Spearman–Brown Correlation coefficient was determined for each of the five subscales. This was done because of the few items per domain as previously recommended (Eisinga et al., 2013). The coefficient ranges from 0 to 1, with numbers closer to 1 indicating a stronger correlation between each item of the subscale. A correlation between 0.70 and 0.95 is acceptable (de Vet et al., 2011; Terwee et al., 2007). To determine the test–retest reliability of the questionnaire, the Intraclass Correlation Coefficient ($ICC_{2,1}$) was calculated for each of the five subscales. The coefficients range from 0 to 1 and were defined as low (0.26–0.49), moderate (0.50–0.69), high (0.70–0.89), and very high (0.90–1.00) (Munro, 2005). ICCs of 0.70 or above were considered acceptable (Terwee et al., 2007). Measurement error, $SEM_{consistency}$, was calculated by dividing the SD of the mean differences between two measurements ($SD_{difference}$) by $\sqrt{2}$ (de Vet et al., 2006). The ICC and Spearman–Brown coefficients were calculated using SPSS V25 (IBM corporation, NY, USA) while the $SEM_{consistency}$ was retrieved using Microsoft Excel 2016 (Microsoft, Washington, USA).

The criterion validity between the BFI-10 and the BFI-44 was assessed with the Pearson's correlation coefficients (ρ). Correlations were considered as "*strong*" ($\rho \geq 0.70$), "*moderate*" ($0.40 > \rho < 0.69$), "*weak*" ($0.10 > \rho < 0.39$), or "*negligible*" correlation ($\rho < 0.10$) (Akoglu, 2018).

The factor structure in the Danish version of the BFI-10 explored using CFA or PCA with the Varimax rotation method (Field, 2013). CFA and PCA were calculated using STATA v.16.1 (StataCorp, College Station, Texas 77845, USA).

3 | RESULTS

Nine participants did not submit both questionnaires for phase 3 and thus data from 91 individuals were available for data analysis. The demographics of the included participants are presented in Table 2.

3.1 | Translation and face validity

Both panels provided feedback that resulted in changes in the final version of the translated questionnaire (Appendix B). In general, the participants in both panels considered the questionnaire to be a bit short to evaluate personality.

3.2 | Test–retest reliability, internal consistency, criterion validity, and factor solution

The test–retest reliability demonstrated acceptable ICC-values (0.80–0.85) for Extraversion, Conscientiousness, and Neuroticism, but ICC-values below the threshold of acceptability (0.65) for Agreeableness and Openness (Table 3). The Spearman–Brown coefficient indicated an acceptable internal consistency for both Extraversion (0.73) and Neuroticism (0.78), while it was between 0.17 and 0.45 for Agreeableness, Conscientiousness, and Openness, indicating non-acceptable internal consistency (Table 3).

For the criterion validity analysis between BFI-10 and BFI-44, a strong correlation was found for the Extraversion ($\rho = 0.711$) and Neuroticism ($\rho = 0.794$) subscales, while a moderate correlation was found for the subscales measuring Conscientiousness ($\rho = 0.656$), Openness ($\rho = 0.662$), and Agreeableness ($\rho = 0.514$).

Bartlett's test of sphericity showed adequate sample composition of the items for the factor analysis ($\chi^2(45) = 121.012$; $p < 0.001$), but the KMO test howed poor adequacy (Kaiser, 1974) (KMO = 0.475), For the Danish version of the BFI-10, the assumed five-factor solution did not converge for CFA. Fixing factor variances to one (i.e., 1)

while freeing first indicator loadings of each factor did not fix the lack of convergence in the model. Therefore, PCA with the Varimax rotation method was calculated instead. For the PCA, the criterion of retaining factors with eigenvalues greater than one (i.e., 1) was used (Kaiser, 1974) and resulted in the retention of five factors, accounting for 1.684% of the variance. The five-factor model of the Danish version of the BFI-10 had similar loadings patterns as those theorized in the original BFI-10 model (Table 4). However, the loading of the reversed item for the agreeableness trait (i.e., item 7) was lower than expected (0.148) and was not signed contrary to non-reversed item (i.e., item 2).

4 | DISCUSSION

Although the Danish version of the BFI-10 appears to be face valid, only two out of five subscales (Extraversion and Neuroticism) had acceptable internal consistency and only three had acceptable test–retest reliability (Extraversion, Conscientiousness, and Neuroticism). Therefore, the 44-item version should be recommended, when all personality traits need to be evaluated.

Rammstedt and John found that the English and German versions of the BFI-10 had acceptable reliability and validity, but at the same time concluded that it did not perform nearly as well as the 44-item version of the BFI (Rammstedt & John, 2007). This confirms findings from a previous report developing 5- and 10-item versions of the BFI (Gosling et al., 2003), highlighting that brief versions of personality assessment instruments cannot replace more comprehensive assessments of personality and should only be used, when

TABLE 2 Demographic description of participants ($n = 91$) included for determining internal consistency, test–retest reliability, standard error of measurement, and smallest detectable change.

	Educational level						
	Secondary school	Secondary education	Vocational education	Bachelor's degree	Master's degree	PhD	Total
Age mean years (SD)	60.5 (10.1)	39.5 (18.9)	46.6 (15.6)	38.7 (13.4)	40.1 (12.3)	41.6 (10.9)	41.1 (15.0)
Number of participants	4	18	5	29	30	5	91
Gender distribution (%Female)	75	55	20	79	63	40	69

TABLE 3 Assessment of internal consistency (Spearman–Brown), test–retest reliability (intraclass correlation, ICC), standard error of measurement (SEM) for the Danish version of 10-item Big Five Inventory (BFI-10).

Subscale of the BFI-10	Extraversion	Agreeableness	Conscientiousness	Neuroticism	Openness
Time 1, Mean ± SD score	7.4 ± 2.1	7.7 ± 1. 5	8.2 ± 1.4	4.7 ± 1.8	6.4 ± 1.9
Time 2, Mean ± SD score	7.5 ± 2.0	7.9 ± 1.5	8.2 ± 1.5	4.7 ± 1.7	6.4 ± 1.7
Diff. (Time 2 − Time 1) ± SD	0.1 ± 1.1	0.2 ± 1.2	0.01 ± 0.80	−0.05 ± 1.1	0.04 ± 1.53
Spearmann–Brown (95% CI)	0.78 (0.66–0.85)	0.26 (−0.12–0.51)	0.45 (0.20–0.65)	0.78 (0.66–0.85)	0.17 (−0.26–0.45)
ICC (95% CI)	0.85* (0.78–0.87)	0.65* (0.52–0.76)	0.84* (0.77–0.89)	0.80* (0.72–0.87)	0.65* (0.51–0.75)
(SEM$_{consistency}$)	0.79	0.87	0.57	0.79	1.1

*Significance at the 0.0001 level.

TABLE 4 Factor loadings of principal component analysis with five components.

	1	2	3	4	5
1. Extraversion(r)	**0.833**	−0.084	0.218	0.104	0.020
2. Agreeableness	−0.072	−0.046	0.012	0.003	**0.908**
3. Conscientiousness(r)	0.121	0.129	**−0.820**	0.041	0.137
4. Neuroticism	−0.077	**0.865**	0.067	−0.024	0.090
5. Openness(r)	0.173	0.000	−0.040	**0.850**	0.186
6. Extraversion	**−0.767**	0.096	0.017	−0.108	0.387
7. Agreeableness(r)	**0.556**	−0.081	−0.150	−0.246	0.148
8. Conscientiousness	0.186	0.135	**0.808**	0.002	0.165
9. Neuroticism(r)	0.117	**−0.824**	0.072	0.091	0.120
10. Openness	0.251	0.182	0.012	**−0.684**	0.317

Note: (r) Reversed item. In bold are factor loadings greater than |0.4|.

personality assessment would otherwise be impossible (Gosling et al., 2003; Rammstedt & John, 2007). In situations where brief measures are needed, personality is not the main focus or primary outcome or the diminished psychometric properties associated with brief measures can be tolerated by the researchers, a 10-item version of the BFI may be used (Gosling et al., 2003). However, some argue against brief versions as they can result in potentially spurious findings which may not be of relevance in a clinical context (Chapman & Elliot, 2017).

In our translation and cross-cultural adaption of the 44-item BFI (Palsson et al., 2020), we found that the test–rest reliability was acceptable for all five subscales (ICC of 0.86–0.95), while the internal consistency of four out of five subscales was acceptable (Cronbach's alpha of 0.75–0.84). Removing item 2 (corresponding to item 7 in BFI-10) from the subscale Agreeableness resulted in acceptable internal consistency for that subscale too (Palsson et al., 2020). Consistent with the findings from the English and German versions of the BFI-10 (Rammstedt & John, 2007), the subscales Agreeableness and Openness performed worse in the current analysis of internal consistency and test–retest reliability as compared to the full BFI (Palsson et al., 2020). This suggests that the 2-item Agreeableness and Openness subscales do not seem to represent the full subscales sufficiently, indicating that it is less appropriate to use these subscales in their brief versions (Rammstedt & John, 2007). This is supported by the findings from the Chinese psychometric evaluation of the full BFI and the BFI-10 (Carciofo et al., 2016), where Agreeableness had the lowest internal consistency in both the full BFI and BFI-10, and that Agreeableness, Conscientiousness, and Openness had the lowest internal consistency of all subscales.

The internal consistency is influenced by the number of items in the individual subscale (Furnham, 2008; Gosling et al., 2003), so it was expected that the BFI-10 would perform worse than the full BFI for each of the subscales. This means that internal consistency is difficult to interpret for subscales with few items (Woods & Hampson, 2005) which has led some authors to suggest the use of other

measures, such as the Spearman–Brown reliability as done here (Eisinga et al., 2013). Using this method however, did not indicate acceptable internal consistency in three out of five subscales, indicating a difficulty in performing such measures with those subscales containing two items as done here.

Although personality traits are likely to be stable in the short-term, changes can occur naturally across the life span (Schwaba & Bleidorn, 2018; Srivastava et al., 2003) or as a result of certain clinical conditions, such as dementia due to Alzheimer's disease (McKhann et al., 2011). Therefore, minimal detectable changes were not evaluated in this study.

4.1 | Limitations and future considerations

The CFA was not conducted, as the necessary assumptions regarding sampling adequacy were not met and the assumed five-factor solution did not converge for CFA. It is unlikely that this can be related to inadequate sample size as these findings are in line with what was found in an Indian population with a considerably larger sample size (N = 1117) (Kunnel John et al., 2019). Moreover, the factor loading for agreeableness was lower than expected (Table 4), which has also been seen in Dutch and German populations.

This current translation process was conducted in parallel with translating the full 44-item BFI questionnaire where the same participants filled out both versions of the questionnaire in the same session. For this reason, we did not evaluate the criterion validity of the BFI-10 as this would likely have affected the correlation coefficients and thereby the interpretation of the outcome. A future investigation of the criterion validity is therefore warranted.

Although the Danish version of the BFI-10 seems to be face valid, only two out of five subscales (Extraversion and Neuroticism) had both acceptable internal consistency and test–retest reliability, while one (Conscientiousness) only had acceptable test–retest reliability. Interpreting results from the Danish version of the BFI-10 should therefore be done with caution if personality traits are the main outcome of interest. A more thorough mapping of personality traits requires either the full BFI questionnaire (44 items) or other, more comprehensive personality assessments.

5 | IMPLICATIONS FOR PHYSIOTHERAPY PRACTICE

Physiotherapists and other healthcare professionals are in general aware of the importance of performing a thorough assessment within a biopsychosocial framework although many feel unqualified to manage these aspects (Synnott et al., 2015; Zangoni & Thomson, 2017). In that respect, it is also important to note that the time used to administer a standardized assessment tool such a questionnaire, reduces the time for other elements of the patient consultation (Joukes et al., 2018). Although the length of the BFI-10 may have its advantages when screening personality types, the shortcomings of

this translated version cannot be neglected. Any use of the Danish version of the BFI-10 for clinical or research purposes should therefore be done with caution until future studies have addressed these shortcomings appropriately.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

Data can be made available.

ETHICS STATEMENT

As per guidelines from the national ethical committee in Denmark (www.nvk.dk), studies focusing on translation of questionnaires do not require a formal evaluation by the regional ethical committee.

INFORMED CONSENT

All participants in the panels were informed of the study's aims and gave their informed consent verbally after having been informed of their rights regarding their participation. This included that their participation was voluntary, and that all personal identifiable information would not be included in the data analysis. Likewise, they were informed of their right to withdraw from participation in the study and have all information about them removed from the dataset.

ORCID

Thorvaldur Skuli Palsson https://orcid.org/0000-0002-4418-0133
Søren Thorgaard Skou https://orcid.org/0000-0003-4336-7059
Rogerio Pessoto Hirata https://orcid.org/0000-0002-9943-2713
Pablo Bellosta-López https://orcid.org/0000-0003-4750-9077
Steffan Wittrup McPhee Christensen https://orcid.org/0000-0001-9068-0641

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

APPENDIX A

EN KORT VERSION AF THE BIG FIVE PERSONALITY INVENTORY—DANSK VERSION

Big Five Inventory-10 (BFI-10)

Adapteret fra Rammstedt, B. & John, O.P. (2007). Måler personlighed på ét minut eller mindre: En kort version af the Big Five Inventory på engelsk og tysk med 10 elementer. *Journal of Research in Personality*, *41*, 203–212.

Brugervejledning: Hvor godt beskriver de følgende udsagn din personlighed?

Jeg ser mig selv som en der...	Meget Uenig	Lidt Uenig	Hverken enig eller uenig	Lidt eni	Meget enig
1. ...er reserveret	(1)	(2)	(3)	(4)	(5)
2. ...generelt er tillidsfuld	(1)	(2)	(3)	(4)	(5)
3. ...har tendens til at være doven	(1)	(2)	(3)	(4)	(5)
4. ...er afslappet, god til at håndtere stress	(1)	(2)	(3)	(4)	(5)
5. ...har få kunstneriske interesser	(1)	(2)	(3)	(4)	(5)
6. ...er udadvendt, social	(1)	(2)	(3)	(4)	(5)
7. ...har tendens til at finde fejl hos andre	(1)	(2)	(3)	(4)	(5)

(Continued)

8. ...udfører et grundigt stykke arbejde	(1)	(2)	(3)	(4)	(5)
9. ...nemt bliver nervøs	(1)	(2)	(3)	(4)	(5)
10. ...har en god fantasi	(1)	(2)	(3)	(4)	(5)

Note: Scoring af subskalaer i BFI-10. Extraversion: 1R, 6; Agreeableness: 2, 7R; Conscientiousness: 3R, 8; Neuroticism: 4R, 9; Openness: 5R; 10 (R = Spørgsmål scores omvendt, f.eks. scoren 2 = 4).

APPENDIX B

OUTCOME FROM PANEL 2 DISCUSSIONS OF THE BFI-10

Participants: eight healthy laymen (see Table 1 for further description of the panel).

General and specific comments

- The questionnaire seems too short to be trustworthy (e.g., one participant asked "How are you able to know, if I really am friendly/outgoing in only two questions?")
- One participant wondered whether it was possible to determine whether a person was open or outgoing in only two questions
- The setup of the questionnaire is better than in the long version as the response options is placed directly after the statements making it easier to see how to answer the individual items.
- Item 5: "Har få æstetiske interesser" ("Has few artistic interests") should be changed to "Har få kunstneriske interesserer" as the panel felt it was too difficult to understand. The word is understood as very high-cultural ("meget høj-kulturel").

OUTCOME FROM PANEL 3 DISCUSSIONS OF THE BFI-10

Participants: Nine patients suffering from recurring or ongoing painful conditions and undergoing treatment at an out-patient clinic (see Table 1 for further description of the panel).

General and specific comments

- When comparing the two questionnaires (the BFI and BFI-10), the panel feels that the long version is too long, and the short version is almost too short. They suggest a version with approx. 20 items.
- Item 9: "let bliver nervøs" ("gets nervous easily") should be changed to "nemt bliver nervøs"
- Item 5: "Har få kunstneriske interesserer" ("Has few artistic interests"). The way the question is phrased can make the word "få" ("few") disappear when reading the statement. Could perhaps be rephrased to "har ikke så mange kunstneriske interesser" ("does not have so many artistic interests").