

Big five inventory-version 10: A two-minute personality measurement tool in Urdu

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Abstract

Objective: To translate into Urdu and validate the Big Five Inventory 10.

Method: The study was conducted at a tertiary care hospital in Kharian Cantonment, and a university in Gilgit, Pakistan, from October to December 2020. Online video meetings were held for the translation process related to the Big Five Inventory 10. A systematic six-step process was followed for translation and validation. The volunteers recruited for the pilot and validation phases were from various different administrative regions of the country. Convergent and discriminant validity to assess construct validity, and Cronbach's alpha was calculated to assess the reliability of the scale. Data was analysed using SPSS 23.

Results: Of the 500 subjects, 358(71.6%) were males and 142(28.4%) were females. The overall age range was 18-48 years. The Urdu version of the Big Five Inventory 10 was found to have a high level of construct validity supported by convergent and discriminant validity ($p < 0.05$). The Cronbach alpha for all the sub-scales fell in the conventional range (0.71-0.88). Females scored higher on the 'agreeableness' subscale than the males ($p < 0.0$).

Conclusions: The Big Five Inventory 10 Urdu version was found to be a valid and reliable tool for researchers and clinicians having time constraints.

Keywords: BFI-10, Urdu, Pakistan, Personality, Validation, Translation, Psychometric, Evaluation, Five factor model.

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Introduction

The personality of a person is the canvas on which the painting of his life is drawn, as noted in a class by Prof. Mowadat H. Rana while delivering a lecture on grading training in psychiatry on Nov 11, 2003 at Rawalpindi, Pakistan, (unreferenced). It is the "individual differences in characteristic patterns of thinking, feeling and behaving" of a person.¹

For centuries, scientists had been trying to explain human personality with different theories. The five-factor model of personality is one such contemporary popular theory. It takes into consideration the traits of 'openness to experience', 'conscientiousness', 'extraversion', 'agreeableness' and 'neuroticism'.²

Personality assessment has remained an integral part of psychiatric examination and psychometrics. Its use has now become widespread and essential in hiring, aptitude testing, adult learning and tasking.³

Not everyone was conversant with the techniques that the mental health professionals used, and this was the reason why personality assessment inventories were developed. Most of them were quite lengthy, and required taking the

student, or a worker, out of his workplace for a few hours in most cases.⁴

For people who were not well conversant with the English language, very few of these inventories were translated and validated in Urdu. The time factor, however, remained a major issue. For such individuals, who may number in millions, hope came in the shape of the Big Five Inventory 10 (BFI-10), a short inventory for personality assessment, which was based on the original BFI, which was developed in 1991 having 44 items.⁵ Due to the mounting demand of an even 'quicker' tool, a shorter version with only 10 questions was developed, with 2 questions taken from each of the BFI traits that represented the highest and the lowest pole of each domain.⁶ Developed simultaneously in English and German languages, the developed instrument had a validity and reliability comparable to the original 44-item instrument. Since then, the scale has been translated into various languages.⁶

Urdu is spoken and understood by most people in Pakistan, a country with a population of 220 million. It is understood, read and spoken in other countries, too, where people from the subcontinental origin dwell.⁷

Just like any other language and its cultural dynamics, people who speak Urdu, or who have Urdu as their mother tongue, may or may not be able to speak other languages, but they, too, harbour emotions, thoughts and

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characteristics that they could best describe in their own language. The current study was planned to translate into Urdu and validate the BFI-10 instrument.

Subjects and Methods

The study was conducted at a tertiary care hospital in Kharian Cantonment, and a university in Gilgit, Pakistan, from October to December 2020. After approval of institutional ethics review committee of Combined Military Hospital Kharian Cantonment, and written permission from the relevant authors, the previously tested methodology of the American Association of Orthopaedic Surgeons⁸ (AAOS) was utilised, involving five stages of translation. This was followed by the validation phase.

First of all, two translators, one of them being a psychiatrist, produced two different drafts after Urdu translation. The second one was a professor of English Literature who did not know the reason for the exercise. They also discussed some difficulties encountered during their task with a third 'subject expert' in an online meeting. This included mainly the appropriate phrasing of the instructions. Both the translated versions were merged together after resolving conflicts and differences. To achieve the content validity of the inventory, two bilingual university faculty members then did a back-translation. They, too, were kept blind to the purpose of the task. These two had not been provided with the original English version of BFI-10. The back-translation was found optimally similar to the original version.

In stage four, all the aforementioned individuals met in an online video meeting, discussed all the difficulties faced, and deliberated their resolution. The final draft was thus completed, which was yet again forwarded to an Urdu

language expert to improve its face validity (Figure).

A major difference in the two languages was that with a common starting sentence in the original English version, all 10 statements that followed were expressed in very few words, including a minimum of one in point 1. This was not possible in the commonly used Urdu language. It would have been possible to use fewer high-end / difficult words, but that would have narrowed the scope of the inventory to a very few highly educated individuals. We used simple and easy-to-understand words that could be comprehended by common man. We were finally able to finish the procedure with a single sentence in Urdu for each point of the instrument.

The pilot study was conducted on healthy individuals of either gender who were students, teachers, physicians and people who were just accompanying patients to the hospital at the tertiary care hospital. They were enrolled using convenience sampling method over 5 working days. Those who furnished informed consent, were included. The subjects hailed from different administrative regions of the country and therefore represented the participation of all major ethnicities. They were asked about any difficulty reading or understanding the questionnaire. None reported any difficulty.

For the validation part, purposive sampling technique was used to recruit healthy volunteers belonging to different administrative regions of the country, thus expanding the diversity of the inputs. Basic demographic data was collected from the subjects who were male and female adults from different professions and organisations. Researchers also collected data from housewives through door-to-door visits, thus ensuring the heterogeneity of the sample to improve the generalisability of the findings. This process took a month.

The Urdu version of Ten Items Personality Inventory (TIPI)⁹ was administered to assess the convergent validity of BFI-10. TIPI also assesses similar domains of personality. The 7-item Generalised Anxiety Disorder (GAD-7)¹⁰ assessment tool was administered to establish both convergent and discriminant validity of the instrument.¹⁰

Data was analysed using SPSS 23. Cronbach's alpha values were calculated to assess the reliability of BFI-10. Translation and validation of an instrument from one language to another, involve some peculiar steps. We ran a 'pilot' study on fifty individuals, as the final step of the translation process.⁸ After this pilot study, we conducted the 'Validation' exercise on 500 subjects. Hence both 'Pilot' and 'Validation' exercises / studies took place.

(گیب فائیو انویٹری-10)

پاؤٹ:

معدنیوں کی صفات کی خصوصیت کو کتنا اچھڑ پر بیان کرتے ہیں؟
شما اپنے آپ کا ان صفات کا پائی ہو۔۔۔۔۔

بیان	بہت کم	بہت زیادہ	نہی کچھ	تھوڑا سا	بہت زیادہ	بہت کم
1						اپنے اس بات کو اچھا لگتا ہے کہ اسے کرتی۔
2						بامعنی پر اچھا لگتا ہے کہ اسے کرتی۔
3						اس کی اور کوئی طرف نہ لگے، بہت اچھی ہے۔
4						چھوٹے، چھوٹے اور ذرا بڑے کو اچھا لگتا ہے کہ اسے کرتی۔
5						فون ایف کے کھیلوں کو اچھا لگتا ہے۔
6						وہ اس بات کو اچھا لگتا ہے کہ اسے کرتی۔
7						اس کی اور کوئی طرف نہ لگے، بہت اچھی ہے۔
8						اپنے اس بات کو اچھا لگتا ہے کہ اسے کرتی۔
9						آسانی سے سمجھتا ہے کہ اسے کرتی۔
10						فون ایف کے کھیلوں کو اچھا لگتا ہے۔

Figure: The Urdu version of 10-item Big Five Inventory (BFI-10).

Table-1: Correlations among the 10-item Big Five Inventory (BFI-10) and TIPI and GAD-7 (n=500).

S#	Scale	1	2	3	4	5	6	7	8	9	10	11
1	BFI-E		00.40**	00.13**	-0.39**	0.38**						-0.31**
2	BFI-A			0.04	-0.28**	0.20**						-0.20**
3	BFI-C				-0.03	0.12**						-0.13**
4	BFI-N					-20**						0.54**
5	BFI-O											-0.16**
6	TIPI-E	0.73**										
7	TIPI-A		0.66**									
8	TIPI-C			0.71**								
9	TIPI-ES				-0.56**							
10	TIPI-O					0.73**						
11	GAD-7											

* <0.05, ** <0.02; E: Extraversion, A: Agreeableness, C: Conscientiousness, N: Neuroticism, O: Openness to experience subscale, TIPI: Ten-item Personality Inventory, GAD: Generalised anxiety disorder assessment.

Table-2: Gender differences in personality traits (n=500).

Variable	Male (n = 358) Mean ± SD	Female (n = 142) Mean ± SD	t-test
Extraversion	6.84±2.40	7.03±2.30	0.80
Agreeableness	6.52±1.93	6.92±1.79	2.12*
Conscientiousness	6.63±1.74	6.71±1.79	0.49
Neuroticism	6.22±1.88	6.32±1.82	0.55
Openness to Experience	6.73±1.75	6.54±1.82	1.10

* <0.05, ** <0.02

Results

Of the 500 subjects, 358(71.6%) were males with mean age 27.58±5.89 years and 142(28.4%) were females with mean age 28.13±6.50 years. The overall age range was 18-48 years. Among the subjects, 312(62.4%), 70(14.0%), 16(3.2%), 67(13.2%), 13(2.6%), 13(2.6%) and 9(1.8%) were from Punjab, Sindh, Balochistan, Khyber Pakhtunkhwa (KP), Azad Jammu and Kashmir (AJK), Gilgit-Baltistan (GB), and Islamabad regions, respectively. Overall, 314(62.8%) participants were married, 182(36.4%) were unmarried and 4(0.8%) ticked the "other" option. In terms of education, 1(0.2%) participant was uneducated, 24(4.8%), 161(32.2%), 189(37.8%) and 125(25.0%) reported primary/middle, matric, intermediate, and graduation levels of education, respectively. Among the subjects, 350(70.0%) were government employees, 51(10.2%) were housewives, 29(5.8%) were students, 21(4.21%) reported private jobs, and 40(0.8%) reported the "other" option. Majority 479(95.8%) participants were from the middle socio-economic class followed by lower 16(3.2%) and upper classes 5(1.0%).

The Urdu version of the BFI-10 was found to have a high level of construct validity supported by convergent and discriminant validity ($p < 0.05$). The Cronbach alpha for all the sub-scales fell in the conventional range (0.71-0.88).

To assess the construct validity, convergent and discriminant validity was preferred over confirmatory factor

analysis (CFA), as there were only two items in each subscale. The traits of 'extraversion', 'agreeableness', 'conscientiousness' and 'openness to experience' of both scales were positively and significantly correlated with each other, indicating higher level of convergent validity of the instrument. Similarly, the same personality traits were negatively and significantly correlated with GAD-7, supporting a good level of discriminant validity of BFI-10. 'Neuroticism' trait/subscale of BFI-10 was negatively and significantly correlated with 'emotional stability' trait/subscale of TIPI, but positively and significantly correlated with GAD-7, thus also reinforcing the underlying theoretical construct (Table 1).

Females scored higher on the 'agreeableness' subscale than the males ($p < 0.05$) (Table 2).

Discussion

BFI-10 has earlier been translated into several other languages, including Spanish, Italian, French, Dutch, Persian, German, etc.¹⁰

The current study was conducted to produce a psychometrically sound and linguistically accurate Urdu version of BFI-10 for personality assessment under time-limited situations. The convergent coefficient scores on 'extraversion', 'agreeableness', 'conscientiousness' and 'openness to experience' of BFI-10 and TIPI scales were 0.73, 0.66, 0.71, and 0.73 respectively, while 'neuroticism' of BFI-10 and GAD-7 was 0.54. According to a study,¹¹ a correlation coefficient of 0.75 indicates strong relationships, 0.50 to 0.74 moderate relationships, and <0.49 indicates weak relationships, but another study¹² used a benchmark coefficient of 0.50 as strong level of correlations. At least a moderate correlation is necessary to support convergent validity,¹³ while a study¹⁴ claimed that moderate to high correlations demonstrate evidence of convergent validity, and another¹⁵ reported that convergent validity might exist when two measures of the

same variable were highly correlated with each other. On the other hand, according to another study,¹⁶ there is no cut-off for correlations that define construct validity. According to Cohen's criterion,¹² the convergent scores in the current study fell within a strong range, but the same were in moderate levels when used with another criterion.¹¹ The studies cited above accepted moderate to strong relationships as an indicator of a good level of convergent validity. The current findings also met the more stringent criterion,¹⁷ i.e. convergent validity above $r = 0.70$ is recommended, and convergent validity below $r = 0.50$ should be avoided. Another study¹⁸ also reported similar findings in terms of convergent validity, despite using different instruments than the ones used in the current study.

According to a study,¹⁵ discriminant validity may exist when measures of different variables are significantly but only slightly or not significantly correlated with each other, supporting the presence of discriminant validity of BFI-10 in the present study.

The reliability of BFI-10 Urdu version was assessed using Cronbach's alpha. As a general principle, the Cronbach's alpha of 0.6-0.7 is considered an acceptable level of reliability, and 0.8 and above is considered a very good level of reliability¹⁹ but values >0.95 are not necessarily good and might be a sign of redundancy.²⁰ A study²¹ recommended a minimum level of 0.7, and another²² described a representative level of 0.77. In the present study, Cronbach's alpha values for all subscales of BFI-10 Urdu version fell well within the acceptable range, i.e., neither too high (>0.95) nor too low (<0.6).

A French study²³ reported findings almost similar to those in the current study.

Additional findings revealed that the gender difference was significant only in 'agreeableness' subscale, which was similar to a Chinese study.²⁴ Older women reported higher level of agreeableness compared to older men²⁵ and university girls showed higher scores on agreeableness compared to university boys,²⁶ which was consistent with the current findings.

Conclusion

BFI-10 Urdu version was found to have a good level of psychometric properties, including a good level of construct validity and Cronbach's alpha reliability. BFI-10 Urdu version would be a very effective personality tool for researchers and clinicians to use with the Urdu-speaking population, especially in research and clinical settings with time-constraint.

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Medical imaging in problem-based learning and impact on the students: A cross-sectional study

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Abstract

Objective: To investigate the medical students' performance with and perception towards different multimedia medical imaging tools.

Method: The cross-sectional study was conducted at the College of Medicine, Qassim University, Saudi Arabia, from 2019 to 2020, and comprised third year undergraduate medical students during the academic year 2019-2020. The students were divided into two groups. Those receiving multimedia-enhanced problem-based learning sessions were in intervention group A, while those receiving traditional problem-based learning sessions were in control group B. Scores of the students in the formative assessment at the end of the sessions were compared between the groups. Students' satisfaction survey was also conducted online and analysed. Data was analysed using SPSS 21.

Result: Of the 130 medical students, 75(57.7%) were males and 55(42.3%) were females. A significant increase in the mean scores was observed for both male and female students in group A compared to those in group B ($p < 0.05$). The perception survey was filled up by 100(77%) students, and open-ended comments were obtained from 88(88%) of them. Overall, 69(74%) subjects expressed satisfaction with the multimedia-enhanced problem-based learning sessions.

Conclusions: Radiological and pathological images enhanced the students' understanding, interaction and critical thinking during problem-based learning sessions.

Keywords: Radiological images, PBL sessions, Medical students, Qassim University, Medical imaging.

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Introduction

Problem-based learning (PBL) is one of the pedagogical learning methodologies and allows more critical thinking and problem-solving. The tutor's role during PBL sessions is to guide and facilitate the open discussion and to encourage interpersonal communication.¹ An introductory session allows brainstorming related to prior knowledge of the students, sharing information and formulating their own intended learning outcomes. This is followed by individual and group study. Later, the students present their collaborative work during a discussion session.² One of the advantages of PBL is that it provides the future physicians with the skills needed to integrate basic and clinical knowledge in order to arrive at the accurate diagnosis. In addition, it promotes their ability to select the relevant diagnostic test and to avoid the unnecessary ones.^{3,4} A meta-analysis detected that students' interaction in small groups enhanced their engagement, especially in clinical situations. It offered them a productive experience and sources of information, enabling independent learning and peer-sharing of knowledge.⁴

PBL depends on learning through exploration, which is influenced by students' activities and interaction. Therefore, students' interest is the driving force.^{1,5} The use of multimedia in PBL activities promotes students' engagement, interaction and high thinking levels.¹ The audio-visual aids have been used in the health sciences institutions to improve the learning process. In 1999, the Faculty of Health Sciences (FHS) in Sweden created web-based digital scenarios for undergraduate students, while in Germany it was found that students' overall satisfaction improved with online simulations.⁶

Due to the recent limitations imposed by the coronavirus disease-2019 (COVID-19) pandemic, educational institutions had to terminate physical in-person learning. As a result, the College of Medicine at Qassim University in Saudi Arabia had to redesign its PBL modality to the online format.

The current study was planned to investigate the medical students' performance with and perception towards different multimedia medical imaging tools.

Subjects and Methods

The cross-sectional study was conducted at the College of Medicine, Qassim University, Saudi Arabia, from 2019 to 2020, and comprised third year undergraduate medical students of either gender during the academic year 2019-

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