

Adaptation of the Personality Type Inventory Based on Enneagram in Peruvian University Students of Health Sciences

Cristian Núñez Galvez^{1*}, Cristian Antony Ramos-Vera², Antonio Serpa Barrientos^{1,2}, Roseline Oluwaseun Ogundokun³

¹National University of San Marcos, Lima Peru

Cesar Vallejo Private University, Research Area, Faculty of Health Sciences, Lima, Peru

Department of Computer Science, Landmark University Omu Aran, Kwara State, Nigeria

ABSTRACT

The objective of the research was to adapt the Personality Type Inventory Based on Enneagram, composed of 44 items, grouped into 9 factors (enneatypes). The inventory was administered to 1096 Peruvian health sciences students, whose ages ranged from 20 to 40 years. The study was analyzed using 9 factors confirmatory factor analysis with adequate structural model fit indices and evidence of reliability in the general scale according to dimensions.

Key words: Personality, Reliability, Validity, Psychometrics, Mental health

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Corresponding author: Cristian Núñez Galvez

e-mail ✉: crisng07@gmail.com

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INTRODUCTION

Personality related to health and behavioural sciences from various perspectives has always been studied by researchers. Several personality models have earlier been proposed in general populations where known approaches to personality from more research stand out. However, it is important to evaluate other models that have attracted less attention. The Enneagram personality system is one such model that can provide an accurate map of the individual's psychological makeup [1, 2]. Enneagram is a personality typology made up of nine interconnected archetypes of the human character structure [1, 3]. Theorization about the Enneagram predates modern psychiatry [4], whose application was introduced to the clinical field by the psychiatrist Claudio Naranjo in 1970. A variety of professionals from psychiatry and clinical psychology later reviewed this model and

found resonance with various theories of mental health, particularly modern psychodynamic approaches [5,6]. For example, the clinical literature describes the use of the Enneagram to (a) Promote the therapeutic alliance; (b) Identify relational themes; (c) Identify people's strengths [7]; (d) Improve communication between couples and families [8]; (e) Provide a map of the therapeutic process; (f) Help normalize emotional pain; (g) Encourage subjects to take control of their healing process [9]. Likewise, the utility of the Enneagram has also generated positive effects in other areas such as work [10] and academic [11].

The enneagram presents nine basic psychological orientations on how people interact with the external world [1,3], through which the human psyche develops a vision of the world and relates to itself and others [12]. In turn, a relationship of these archetypes with nosological diagnoses of personality in the field of mental health was evidenced [5,13]. The nine types can be divided into three attentional strategies for processing information: The first is the heart, which prioritizes emotional information, the next is

the head, which prioritizes the processing of cognitive information, and the last is the body, which prioritizes the processing of instinctive information [14]. These three typological centers of the Enneagram are also known as the triads, the "Hornevian" groups, and the "Harmonic" groups. The Triads show the main different problems of the ego and the blocked or distorted functions [14,15]. Hornevian groups indicate social style and how everyone try to satisfy their needs [14,15]. Harmonic groups indicate the coping style and how each subject manages when they do not get what they want [14,15]. The core of the Enneagram does not focus on behavior modification; rather, it emphasizes an understanding and recognition of inner motivations, which often operate to grow a compassionate acceptance of various parts of the self [16]. These types are organized numerically but not in terms of preference. The Enneagram has no "better" or "worse" types; like other personality models, it is descriptive and not evaluative.

During the last decade, several investigations and clinical interventions using this approach have shown that the recognition of personality according to the enneagram favors the reduction of anxiety and improves self-esteem [17-19]. Therefore, the practical teaching and learning of the typological knowledge of the enneagram in mental health are important [13], given that the concept of the Enneagram is oriented so that people understand the mechanism involved in their personality, that allows them to seek freedom from their negative behavioral patterns and personality limitations [16], which arise from the deep roots of human nature's inner drives and conflicts [5].

The enneagram method has contributed to reinforcing the conceptualization of modern approaches to the personality of great importance in mental health research and evaluation [20-22]. Likewise, another parameter that strengthens the suitability of this measure of personality is the correlations with other constructs related to physical and psychological well-being [23-25], which has demonstrated the convergent validity of the Enneagram measure in clinical research. The referred contributions demonstrate the criteria used by personality researchers to establish a precise personality

system [5, 6, 13] in the practice and theory of mental health.

Recent studies have framed enneatypes in alignment with modern psychodynamic approaches that help people identify ineffective patterns and facilitate corrective emotional experiences to learn new ways of relating to others. The enneagram theory bears conceptual similarity to contemporary psychodynamic therapy models, especially brief models such as Time-Limited Dynamic Psychotherapy (TLDP), for which there is research to support its efficacy, for example, increased attachment security [26], and for the maintenance of therapeutic effects [27]. TLDP emphasizes that everyone has a "maladaptive cyclical pattern (PCM)," or a primary pattern of a problematic relationship. The PCM describes patterns of feelings toward the self, expectations, and perceptions of others, and ways of relating that are dynamically interconnected and perpetually dysfunctional relationships [28]. Therefore, this definition of the functioning of the personality is parallel with the Enneagram theory.

In addition to psychodynamic models such as the TLDP, the Enneagram could also be useful in cognitive and behavioral approaches. For example, in Cognitive Behavioral Therapy (CBT) [29], individuals are guided to explore their perspectives and schemas, including cognitive distortions, which may be connected to unhelpful feelings and behaviors. Research has found connections between Enneagram types and cognitive schemes [30], so understanding the typology of personality according to this approach helps the individual to understand their cognitive tendencies and possible distortions. In Acceptance and Commitment Therapy [31], one of the key goals is to reduce the rigid response and improve psychological flexibility. Likewise, it enables the subject to increase awareness of situations that involve a rigid way of relating to others, following the tendencies of their archetype. This is considered a starting point to start working on decreasing rigid responses and increasing psychological flexibility.

Consequently, from the psychometric perspective, it was considered to carry out an instrumental study of the Personality Type Inventory Based on Enneagram [32] that assesses the nine personality representations according to

the Enneagram [13, 15]. Therefore, this research aims to evaluate the psychometric properties of the present enneagram instrument in a sample of Peruvian students of health sciences to gather adequate evidence of validity and reliability, thus complying with the standards for its specific use such as those provided by The Standards for Educational and Psychological Testing [3,4,33].

MATERIALS AND METHOD

Sample

This research is instrumental because it analyzed the psychometric properties and the adaptation of a psychological instrument [34]. The study sample was made up of 1096 Peruvian university students, which comprises 520 men (47.4%) and 576 women (52.6%) with ages between 20 and 40 years (ME=23.62; SD=3.53). The samples were mostly made up of psychology students (80.7%), the rests were nursing and nutrition students, whose students belonged to two university centers in the Peruvian city of Lima. The total sample was included for comparison according to sex and age (20-23, and 24-40) using the Bayesian t-test [35] to select those significant differences with conclusive evidence of Bayes factor [BF]> 10.

The Personality Type Inventory Based on Enneagram (PTIBE) (x) was used. It composed of 44 items, grouped into 9 factors (enotypes): perfectionist style composed of items [1-5], helper [6-9], Achiever [10-15], romantic [16-20], researcher [21-25], loyal [26-29], adventurer [30-33], challenger [34-39] and pacifist [40-44]. The items score from 1 to 6 (Certainly no, No, Partially no, Neither yes nor no, Partially yes, Yes, Certainly yes). It was however decided upon the recommendation of the experts in the content validation of the instrument to modify four types of responses (Never, Almost never, Almost always, Always).

Procedure

For the adaptation of the instrument, a certified translation process of the original PTIBE items was carried out using the translation method "back translation" [36], which consisted of translating the scale from English to Spanish and, later, retranslating the version. from Spanish to English, ensuring the equivalence of the translation. Subsequently, a concordance analysis was carried out between judging with

experience in the field of clinical psychology and psychological measurement, on attributes such as clarity, relevance, and relevance of the items concerning the construct to be evaluated, whose V values of Aiken were greater than the established minimum [≥ 0.70] [37]. After evidencing the content validity, the survey was applied to a single sample of 1096 Peruvian students of health sciences.

Statistical analysis

Confirmatory factor analysis (CFA) was performed using R Studio software (psych package, version 3.4.2). Preliminarily, the analysis was considered in the nine types of asymmetry and kurtosis in the range ± 1.5 [38]. Similarly, factor loadings greater than 0.30 were considered [39], and the inclusion of the most frequent adjustment indicators, such as the CFI and TLI comparative adjustment indices, expecting a value > 0.95, the root residual standardized mean square means SRMR ≤ 0.08 , the mean square error of approximation: RMSEA < 0.08 [40], and the ratio between chi-square and degrees of freedom (χ^2/df), whose good fit are referred to in those with values less than five.

The second factorial model included the general measure and the general scores of the nine enotypes. Finally, to verify the evidence of the reliability of the instruments, this was analyzed through the internal consistency method with the omega coefficient: $\omega \geq 0.65$ [41].

RESULTS AND DISCUSSION

Descriptive

The factorial validity was estimated, starting with the identification of the normality of the enneatypes utilizing asymmetry (-0.551 to -0.125) and kurtosis (-0.551 to 0.721) that were at adequate values ± 1.5 as shown in Table 1.

Confirmatory factor analysis

Using the CFA, the structure of two models was evaluated, the first the factorial version composed of the correlation of the 9 enatypes and 44 items referred goodness of fit values of $\chi^2 / df = 1.16$, RMSEA=0.012, SRMR=0.014, CFI=0.99, TLI=0.99, also presented factorial loads between 0.35 and 0.70. While in the second model composed of the general factor and the total scores of each personality type according to the enneagram, it also reported values of

Table 1: Descriptive data and reliability of the enneagram personality types.

Enneatype	ME	DS	Asymmetry	Kurtosis	ω
Perfectionist	10.885	3.09	-0.551	0.268	0.727
The Helper	9.702	2.100	-0.223	-0.184	0.727
The Winner	9.980	1.107	-0.143	-0.046	0.725
The Romantic	10.019	3.099	-0.246	-0.251	0.733
The Researcher	9.885	2.111	-0.125	-0.435	0.699
The Loyal	10.577	1.089	-0.232	-0.551	0.677
The Adventurer	10.710	1.102	-0.478	0.075	0.694
The Challenger	10.434	2.078	-0.345	-0.316	0.659
The Peacemaker	10.322	3.087	-0.323	0.265	0.696
Enneagram	10.555	1.256	-0.587	0.721	0.808

Notes: ME: Mean. SD: Standard Deviation. ω =Omega coefficient

Table 2: Analysis of the internal structure of the RETHI (n=1096).

Models	χ^2/df	CFI	TLI	GFI	SRMR	RMSEA
PTIBE	1.16	0.99	0.99	0.99	0.014	0.012
9 factors	3.76	0.93	0.92	0.92	0.07	0.07

Note. χ^2 : Chi-square, df: Degrees of freedom, χ^2/df : Global fit, CFI: Comparative goodness of fit index,

TLI: Tucker-Lewis index, GFI: global goodness of fit index, SRMR: Residual root mean square, RMSEA: Root of the approximate mean square residual.

good fit of the model ($\chi^2 / df=3.75$, RMSEA=0.07, SRMR=0.07, CFI=0.93 and TLI=0.92, GFI=0.92) whose factor loadings required values from 0.39 to 0.60 and this is shown in table 2.

Reliability

The reliability of the PTIBE was obtained employing the omega coefficient of values from 0.659 (enneatype 4) to 0.733 (enneatype 8), and 0.808 for the total scale association between enneatypes. The values of the correlations between the nine enneatypes that integrated the version of the PTIBE in model one was found between $r=0.251$ to $r=0.598$, which indicate moderate positive associations, which refer to a precision of the Enneagram structure.

Differential analysis by age and sex

They were compared using the Bayesian student's T test according to sex and age (20-23 and older than 23). According to enneatype, the findings only indicate significant differences according to sex with conclusive Bayesian evidence in the "romantic" enneatypes ($T=-3.139$; $BF=125$) and "loyal" ($T=-2.693$, $BF=18.123$). The "romantic" archetype also evidenced differences according to age ($T=-3.207$, $BF=64.87$), together with the enneatypes: "Helper" ($T=-3.874$, $BF=28.537$), "successful" ($T=-4.125$, $BF=525.573$) and "researcher" ($T=-4.753$, $BF=296$).

DISCUSSION

The main objective of the research was to evaluate the psychometric properties through

the CFA of the PTIBE in university students of the health sciences. The descriptive analysis of the enneatypes reports scores higher than the mean, that is, they present a greater tendency with such personality styles, however, it reported higher scores of the perfectionist enneatype, which was recently corroborated by two studies of an enneagram measure [42, 43] and lower in the helper type, unlike other recent studies that included an enneagram measure and require a higher helper type score [32, 44]. Although there may also be an effect of social desirability that leads the participant to answer the questions in a certain sense. To try to give a more positive image of himself, these questions evaluate descriptive personality traits, which are neither good nor bad.

The results of the CFA obtained indicate that the Peruvian version of the PTIBE is considered as a methodological contribution concerning the valid inferences of the factorial structure through the method of parceling out the nine personality enotypes according to the enneagram and only considering the total scores of the nine enneatypes. These findings confirm the hypothesis raised and contribute to the measurement of personality in health science students in the Latin American context. Regarding the evidence of reliability derived from the application of the items, the previous study only included the alpha coefficient. However, for this research it was considered to work with the omega coefficient since the latter

has two strengths: it allows the management of the sum of the standardized variables that generate stability in the reliability calculation and does not present bias due to the number of items [45], whose reliability values by enneatype were found with moderate and acceptable values. This is an instrumental methodological contribution considering that other recent psychometric studies of enneagram personality to date only report the reliability of Cronbach's alpha [42, 43].

When correlating the factors (enatypes) to show their discriminant validity, the result shows moderate correlations. These findings refer that the regrouping of the factors revealing a congruence of the multidimensionality of the Enneagram measurement model. This allows strengthening the evidence of the validity of the internal structure and the adequate discriminant validity of the PTIBE due to the strength of the relations of relative independence between the factors. The reported differences concerning age have also been reported in Enneagram investigations in Turkish and Nigerian adults [42,43]. Regarding the differences according to sex, these are reported in another recent study in favor of adult women [44-46].

CONCLUSION

Based on the study findings, it can be concluded that the PTIBE is a measure whose items are related to the Enneagram model, and require the appropriate psychometric properties, thus answering the research hypothesis. The omega reliability indices for each enneatype and the full scale are adequate. Therefore, the usefulness of structural equation models was demonstrated as a method that allows the strengthening of theoretical models in health and behavioral sciences taken to evaluation contexts. Although other more common instruments have been proposed in the assessment of personality, the PTIBE measurement is a viable and suitable alternative for the assessment of personality and greater clinical implication in mental health interventions. Regarding this, it has been suggested to strengthen the psychometric properties of the PTIBE in other Peruvian cities and other Latin American countries for the verification of its degree of adjustment, and include its relationship with other health

measures, whose evidence of convergent validity is strengthened by using the factor Bayes, and other measures such as network analysis that also allows another perspective of comparison in the health sciences.

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