



Psychopathy in Iran: Developing and Validating a Persian Version of the Comprehensive Assessment of Psychopathic Personality- Self-Report (CAPP-SR)

S. Fatemeh Sajjadi¹ · Zahra Emadi² · Leila Shameli³ · Julien Gross¹ · Yadollah Zargar⁴ · Martin Sellbom¹

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Abstract

The *Comprehensive Assessment of Psychopathic Personality-Self-Report* (CAPP-SR) is the most recent operationalization of the CAPP model which uses 33 symptoms to conceptualize psychopathic personality disorder. In the current study, we sought to examine the cross-cultural utility of the CAPP-SR in an Iranian sample. In Study 1, we translated the CAPP-SR into Persian and assessed the linguistic convergence between the Persian and original English versions using a sample of Persian–English bilingual university students in New Zealand. In Study 2, we examined the reliability and validity of the Persian CAPP-SR using a sample of university students in Iran. Our results showed that the Persian CAPP-SR has a promising pattern of convergent and incremental validity in terms of their associations with conceptually-relevant criterion measures, including those designed for the Iranian cultural context. Overall, the findings from the current study support the use of the Persian CAPP-SR as well as having implications for the cross-cultural utility of the CAPP model.

Keywords Comprehensive Assessment of Psychopathic Personality · Psychopathic personality · Cross-cultural · Validation

Psychopathy is argued to be the first personality disorder to be identified in psychiatry (Millon et al., 1998). Despite its popularity, the psychopathy construct has been a source of controversy at both conceptual and operational levels for more than a century. What constitutes psychopathy (e.g., Cooke et al., 2007; Hicks & Drislane, 2018), which aspects of psychopathy are central to the construct (e.g., Arrigo & Shipley, 2001; Cooke & Sellbom, 2019), and whether psychopathy is a dimensional or categorical structure (see Harris et al., 2001; Sellbom & Drislane, 2020, for further details) are some of the matters under debate in the

literature. Historically, the major emphasis of psychopathy is on the behavioral deviant manifestations versus tendencies towards dysfunctional affective and interpersonal traits (Venables et al., 2014). The evidence that has emerged in the last decade characterizes psychopathic personality as a constellation of affective deficits (e.g., callousness, lack of remorse, and empathy); interpersonal deficits (e.g., deceitfulness, grandiosity, manipulateness); and corresponding behavioral manifestations (e.g., anti-social acts, aggression, quick temperedness; Skeem et al., 2011). In the current study, we focused on the Comprehensive Assessment of Psychopathic Personality (CAPP; Cooke et al., 2004, 2012), which is the most recent attempt to integrate the scientific and clinical literature of psychopathy into a comprehensive concept map.

Controversies aside, there is a general consensus that socio-cultural factors have a significant influence on shaping psychopathic personality and the integral part of psychopathy assessment is deviations from social and cultural norms (Cooke & Michie, 1999). However, the construct of psychopathic personality is mainly formulated based on Western cultures. The literature is fraught with Western-based

✉ Martin Sellbom
martin.sellbom@otago.ac.nz

¹ Department of Psychology, University of Otago, PO Box 56, Dunedin 9054, New Zealand

² Department of Psychology, Tehran University, Tehran, Iran

³ Department of Psychology, Ardakan University, Ardakan, Iran

⁴ Department of Counseling, Hazrat-e Masoumeh University, Qom, Iran

measures which have been mainly developed in the Euro-American cultures, but skeptics have warned that these measures have limited applicability for the study of Non-Western cultures, especially developing societies (Naidoo et al., 2020; Sinha, 1990). To fill this gap, researchers have begun to examine the validation and applicability of the existing psychopathy construct and measurements in Non-Western societies such as the East Asian cultural context (Sea, 2018; Shou et al., 2016, 2017, 2020; Sohn & Lee, 2016; Wang et al., 2018), however, there are a few studies that have examined the psychopathy construct in Middle Eastern countries (Atari & Chegeni, 2016; Chegeni & Atari, 2016; Latzman et al., 2015; Shariat et al., 2010; see our introduction to the relevant literature later). As such, to develop a more universal psychology surrounding psychopathy, the current study was conducted to begin to fill this gap in the literature.

Comprehensive Assessment of Psychopathic Personality

The Comprehensive Assessment of Psychopathic Personality (CAPP; Cooke et al., 2004, 2012) was developed as a conceptual map of psychopathic personality based on a dynamic personality-trait approach, comprising a semi-structured interview-based Institutional Rating Scale (CAPP-IRS; measurement of personality pathology and psychosocial adjustment in the past six months) and the Staff Rating Scale (CAPP-SRS; measurement of functional deficits as rated by practitioners), which have been merged into the CAPP Symptom Rating Scale (see Cooke et al., 2021, for further details). Founded on the lexical hypothesis, similar to prominent ‘normal’ personality models such as the Big 5 (e.g., Goldberg, 1990), the CAPP model encompasses 33 psychopathic personality symptoms; each symptom (e.g., unreliable) reflects disruption of various personality functions and is described by three adjectives or adjectival phrases (e.g., undependable, untrustworthy, irresponsible; see Cooke & Logan, 2018). These symptoms can be thematically organized into six functional domains of psychopathy personality (i.e., Attachment, Behavioral, Cognitive, Dominance, Emotional, and Self) which gives the CAPP a hierarchical structure (Cooke et al., 2012; Florez et al., 2018; Kreis & Cooke, 2011; Kreis et al., 2012; Sandvik et al., 2012; Sellbom et al., 2015). The CAPP is also a gender-neutral model intended to be used in different settings and be able to detect potential psychopathy personality changes over time with more focus on personality traits and less focus on antisocial and criminal behaviors (Cooke et al., 2012; Florez et al., 2015; Kreis & Cooke, 2011; Pederson et al., 2010).

The content validity of the CAPP model is promising across different languages, cultures, gender, expertise, and lay populations (e.g., Florez et al., 2015; Hoff et al., 2012; Hoff et al., 2014; Kreis et al., 2012; Kreis & Cooke, 2011). The psychometric and structural properties of the CAPP have been also well established. Some researchers found support for the clinical utility (Pederson et al., 2010); construct validity (Sandvik et al., 2012); and content validity (e.g., Florez et al., 2018; Hoff et al., 2012; Kavish et al., 2020; Kreis et al., 2012; Sellbom et al., 2015) of the CAPP model. Others have evaluated interview-based measures of CAPP (i.e., CAPP-SRS) in a sample of prison inmates and have demonstrated the reliability and robust psychometric properties of the CAPP model (Cooke et al., 2021; Florez et al., 2018).

To complement the available suite of CAPP operationalizations, Sellbom et al. (2019) developed a new operationalization of the CAPP model, the CAPP Self-Report (CAPP-SR; see <https://capp-network.no/capp-sr/> for the formal CAPP-SR manual, Sellbom & Cooke, 2020). The CAPP-SR inventory has 99 items; 3 items for each of 33 CAPP symptoms. Sellbom et al. (2019) developed the CAPP-SR through various latent modelling and classical test theory procedures and validated the scale across two university and community samples from two different English-Speaking countries (i.e., United States and New Zealand; Sellbom et al., 2019). Overall, they found that the CAPP-SR scale has good criterion-related validity with the CAPP-Lexical Rating Scale (CAPP-LRS; Cooke et al., 2004); promising convergent validity with those of other psychopathy personality measures; and sufficient incremental validity over the CAPP-LRS symptoms in capturing variance in other psychopathy personality measures. Furthermore, to inform the hierarchical interpretation of the CAPP model, Sellbom et al. (2021) examined the higher-order factor structure of the CAPP-SR symptom scales in a large community sample of adults, university students, and offenders derived from three different countries (i.e., the United States, New Zealand, and Lithuania). Sellbom et al. (2021) found a robust three-factor structure in the community sample (Antagonism/Meanness, Disinhibition, and Fearless Grandiosity) which was also confirmed across two other samples (i.e., university and offenders) using Exploratory Factor Analysis with targeted rotation. They reported promising convergent and discriminant validity of the resulting latent factor scores. They argued that this three-factor structure can be considered as an alternative hierarchical interpretation of CAPP-SR.

To date, the CAPP-SR has been translated into Chinese (Shou et al., 2020) and Lithuanian (Sellbom et al., 2020). To enhance cross-cultural research on psychopathic personality

pathology, in the current study, we aimed to translate and cross-validate the CAPP-SR in a sample from Iran.

Psychopathy in Iran

Reviewing the existing literature published in both English and Persian, relevant studies on psychopathic traits among the Iranian population is sparse. In one study, Shariat et al. (2010) examined the factor structure of the Psychopathy Checklist: Screening Version (PCL: SV) in a sample of Iranian prisoners and compared this population with the original standardization sample (as described in the PCL: SV manual; Hart et al., 1995) from Canada and the United States. They found no consistent pattern of differences between the two samples when tested for structural invariance. Using Item Response Theory (IRT) analysis, however, Shariat et al. found that compared to the standardization sample, Arrogant and Deceitful Interpersonal Style (i.e., Superficial, Deceitful, and Grandiose items) had less discrimination power, whereas, Deficient Emotional Experience (i.e., Lacks Remorse and Lacks Empathy, but not Doesn't Accept Responsibility) had higher differentiating power among the Iranian sample. Shariat et al. argued that cultural expectations, a collectivist culture, the duality of social life in Iran, authoritarianism, and the political atmosphere of suppression in Iranian society might underlie the differences in their findings.

In another study, Latzman et al. (2015) examined the construct validity of self-reported psychopathy using the Arabic version of the Psychopathy Personality Inventory-Revised (PPI-R; Lilienfeld et al., 2005) among undergraduate students in Egypt and Saudi Arabia, and then compared this population with a sample from the United States. Although Latzman et al. (2015) observed a similar profile of psychopathy among Arabic-speaking Middle Eastern and American samples, they reported that in the Saudi Arabian sample, the PPI-R Cold-Heartedness scale was less strongly associated with other psychopathy traits. Latzman et al. argued that the PPI-R Cold-Heartedness scale might function differently in Western and Middle Eastern societies. In a similar study, Neumann et al. (2012) examined psychopathic traits using the English version of the Self-Report Psychopathy scale (SRP; Paulhus et al., 2009) in a very large sample recruited from 58 nations, including the Middle East. Neumann et al. found that compared to sample from the United States, Middle Eastern participants scored higher on the interpersonal domain of psychopathy, and scored moderately higher across affective, lifestyle, and antisocial aspects of psychopathy.

Like any other disorder, we need to consider ethnic and cultural factors when it comes to the psychological construct

of psychopathy. To the best of our knowledge, there is only one research study in Iran that has investigated psychopathic traits, and there are few studies that have been conducted in non-Persian Middle Eastern countries. Given that Middle Eastern countries are distinct by language and culture and given the differences in the manifestation of psychopathic traits across different ethnicities (Hare, 1991), there is a need for context-specific studies to explore the differential expression of psychopathy traits across different societies. Moreover, the CAPP is the most comprehensive model of psychopathy personality that not only integrates various perspectives but also targets measuring affective-interpersonal traits rather than behavioral traits. Using this measure may help to understand which traits are necessary to be included in the concept of psychopathy. Thus, the current study is another attempt to examine whether the CAPP-SR can operationalize psychopathy similarly in a very different and distinct culture from those previously examined.

The Current Study

The primary goal of this study was to evaluate the CAPP model in the Persian context. In particular, we aimed to translate and validate the Persian CAPP-SR in a sample of Iranian university students. Our research builds on the literature in two important ways. First, it expands on the research base of the CAPP-SR, which remains limited. Second, it considers whether the CAPP-SR can be adapted to the Persian cultural context and whether such scores are associated with external criteria specific to the Iranian context. In Study 1, we initially translated the CAPP-SR into Persian, and then we examined the psychometric properties of Persian and English versions of CAPP-SR to establish equivalence in meaning between the CAPP-SR items in both versions. In Study 2, we assessed the internal consistency reliability of CAPP-SR symptom scale scores via examining the model-based and classic test theory estimates of internal consistency. We also validated the Persian CAPP-SR via examining the convergent and divergent validities of the Persian CAPP-SR scale scores in predicting other theoretically-relevant variables, including measures that were specific to the Iranian cultural and social fabric. Finally, to explore the incremental validity, we studied the degree of variance that the Persian CAPP-SR scale scores accounted for in other external psychopathy measures relative to that of the CAPP-LRS scores, which is an alternative briefer measure of the CAPP model.

More specifically, we examined (a) the criterion validity of the Persian CAPP-SR by examining its correlates with the CAPP-LRS and Levenson Self-Report Psychopathy Scale (LSRP; Levenson et al., 1995); (b) the convergent

validity of the Persian CAPP-SR by examining its correlates with other psychopathic-related personality measures (e.g., Inventory of Callousness-Unemotional Traits; Frick, 2004) and culturally specific measures (e.g., social deviance behavior); and (c) the incremental validity of the Persian CAPP-SR in predicting other conceptually-relevant constructs.

Method

Study 1: Developing the Persian CAPP-SR

The purpose of Study 1 was to translate the CAPP-SR into Persian. Both the Persian and the original English version of the CAPP-SR were examined in a sample of Persian–English bilinguals. We assessed the convergence between the two language versions by examining the correlations and mean differences in the items across the two versions.

Participants and Procedures

The scale development sample consisted of 20 Persian–English bilinguals (11 males) who were current or previous students at the University of [name] at the time of the study. The age of participants ranged from 19 to 41 years (M age = 31.60, SD = 5.05). Participants were all Iranian nationals and were recruited through invitations and snowball sampling. Participants completed both English and Persian versions of the CAPP-SR online using Qualtrics software. The order of the two language versions was randomized and a 30-minute interval was imposed between the completion of each scale. All participants provided online consent before completing the questionnaire and were reimbursed \$25 for their time. The research was reviewed and approved by the University's Human Ethics Committee (Health).

Measures

Comprehensive Assessment of Psychopathic Personality-Self-Report (CAPP-SR; English Original) The CAPP-SR (Sellbom & Cooke, 2020) is a 99-item self-report questionnaire developed to assess the relevant symptoms of psychopathic personality disorder. The CAPP-SR measures six broad functional domains and 33 psychopathic personality symptoms, including Attachment (4 symptoms, 12 items); Behavioral (6 symptoms, 18 items); Cognitive (5 symptoms, 15 items); Dominance (6 symptoms, 18 items); Emotional (5 symptoms, 15 items); and Self (7 symptoms, 21 items). Participants indicated how much they agreed with each statement (e.g., *I think telling the truth is the best policy*) using a 4-point scale ranging from 1 (*False*) to 4 (*True*)

with a higher score indicating greater psychopathic symptoms. The CAPP-SR psychometric features in previous studies support its internal consistency with a median AIC of 0.36 in the university sample and a median AIC of 0.40 in the community sample (Sellbom et al., 2019). In the current study with the bilingual sample (Study 1), Cronbach's α was calculated to be 0.87 for both English and Persian versions.

Persian CAPP-SR The translation involved processes of English to Persian translation, Persian to English back-translation, and independent verification. Accordingly, the Persian version of the CAPP-SR for the present research was prepared by the first author, who is a native speaker of Persian with a good understanding of the psychopathy concept and literature, and has a PhD from an English-speaking country. The translated items were then back-translated into English by an independent bilingual translator who has a PhD in linguistics from an English-speaking country, but no expertise in psychology. The back-translated items were then independently evaluated by the senior author (the co-developer of CAPP-SR) to determine whether the translated items were equivalent in meaning to the original English version of the CAPP-SR. Items that were considered to be non-equivalent in meaning with the original content were retranslated, and the same revision process continued until the senior author had formally approved that all back-translated items were equivalent in meaning to the original English. None of the translators nor back-translators were participants in Studies 1 or 2.

Results and Discussion

We conducted paired-sample correlations and t -tests to examine the convergence between the English and Persian items of CAPP-SR (see online supplementary Table S1 for complete details). Among the 99 items, 90 items indicated no significant difference in the means between the two language versions. The correlations between the English and Persian item pairs ranged from 0.46 ($p < .05$) to 1.00, with a median of 0.80, and the great majority of items (i.e., 96 items) were associated with large effect sizes (r 's ≥ 0.50). With respect to the 9 less agreed-upon items, the correlations between the English and Persian item pairs ranged from 0.65 to 0.89 ($p < .01$), with a median of 0.79, and small to moderate effect sizes (Cohen's d ranged from 0.22 to 0.50). Overall, the results of Study 1 demonstrated good convergence for the Persian CAPP-SR items with their original English counterparts.

Study 2: Validating the Persian CAPP-SR

The purpose of Study 2 was to evaluate the reliability and validity of the Persian CAPP-SR in a sample of Iranian university students. To do this, we recruited university students studying in Iran to better understand how cultural and societal differences may affect the external correlates of psychopathic personality in a non-Western, non-clinical population. It is important to reiterate that one of our goals in the current study was to examine the relation between psychopathy personality and culturally-specific measures in Iran. To date, much of the research literature has used Western-designed measures to investigate psychopathy in the Middle Eastern and non-Western contexts. To bridge this gap, in this study, we used three scales that were originally developed in Iran to measure psychopathic-related constructs of addiction potential and social deviance among Iranian students.

Participants

The scale validation sample consisted of 366 Iranian university students who were recruited from the University of Tehran and the University of Ahvaz. No formal data on ethnicity were collected, but participants were all Iranian nationals with Persians accounting for the great majority of the Iranian population. Participants were recruited through invitations and snowball sampling. Participants completed an online battery of 9 questionnaires including the Persian CAPP-SR. Using embedded failed-attention questions (e.g., “If you are reading this statement, please respond ‘False’”), 57 participants were excluded from the experiment due to suspected random or non-content-based responding. The final sample ($N=309$) consisted of 219 women and 90 men; no participants identified as gender diverse. Participants ranged in age from 18 to 41 years ($M_{age}=25.79$, $SD=5.58$). With respect to educational attainment, 6.1% of participants reported having obtained an associate degree, 53.7% Bachelor’s, 28.8% Master’s, and 11.3% PhD. The research was reviewed and approved by both the University of Otago’s Human Ethics Committee (Health) and the equivalent Ethics Committee at the University of Ahvaz.

Measures

Persian CAPP-SR The 99-item Persian CAPP-SR developed in Study 1 was used. Each item was rated on a 4-point scale ranging from 1 (*False*) to 4 (*True*).

Comprehensive Assessment of Psychopathic Personality – Lexical Rating Scale (CAPP-LRS) The CAPP-LRS (Cooke et al., 2012; Sellbom et al., 2015; Persian version, Shariati, 2012, unpublished translation) is a 42-item self-rating

measure designed to assess each of the 33 CAPP symptoms (defined by three descriptive adjectives each) related to psychopathic personality traits as well as 9 ‘foil’ items (which are conceptually irrelevant to psychopathy). Participants rate themselves on each personality characteristic using a 7-point Likert scale (1 = *Not at all characteristic of me* to 7 = *Very characteristic of me*). The six CAPP-LRS domain scores have documented validity support (e.g., Hannibal et al., 2021; Kavish et al., 2020). In the current study, the CAPP-LRS demonstrated high internal consistency for the total score ($\alpha=0.94$) as well as all six domains (Attachment: $\alpha=0.75$, Behavioral: $\alpha=0.76$, Cognitive: $\alpha=0.76$, Dominance: $\alpha=0.80$, Emotional: $\alpha=0.70$, and Self: $\alpha=0.82$).

Levenson Self-Report Psychopathy Scale The LSRP (Levenson et al., 1995; Persian version, Karimi, 2014) is a 26-item self-report questionnaire designed to assess the two-factor construct of the Psychopathy Checklist-Revised (Hare, 1991). Participants rate their agreement with each item using a 4-point Likert scale (1 = *Strongly disagree* to 4 = *Strongly agree*), with seven items being reversed scored to control for various response biases. Items were summed to create a total score with higher scores indicating greater levels of psychopathic traits. We scored the LSRP based on the three-factor model (19 items); Callous (4 items), Antisocial (5 items), and Egocentricity (10 items). The LSRP scores have well-documented validity support (see Dickison & Sellbom, *in press*, for a review). The psychometric properties of the LSRP in Persian-speaking samples have been supported by previous studies (Karimi, 2014). In the current study, the internal consistency (Cronbach’s α) of the total scale was 0.70 and for each sub-scale were 0.57 (Egocentricity), 0.61 (Antisocial), and 0.70 (Callous).

Inventory of Callousness-Unemotional Traits The ICU (Frick, 2004; Persian translation, Palizian et al., 2017) is a 24-item self-report questionnaire to measure callous-unemotional traits. Participants rate their agreement with each item using a 5-point Likert scale (0 = *Not at all true* to 3 = *Definitely true*) with a higher score indicating greater levels of callous-unemotional traits. The ICU has three subscales, including callousness (11 items), uncaring (8 items), and unemotional (5 items). The ICU showed high internal consistency in prior research using Iranian undergraduate students ($\alpha=0.74$; Paliziyan et al., 2019). In the current study, internal consistency for the total scale was $\alpha=0.81$ and for subscales were 0.63 (unemotional), 0.66 (uncaring) and 0.81 (callousness).

Iranian Addiction Potential Scale (IAPS) The IAPS (Original Persian; Zargar & Ghaffari, 2009) is a 36-item self-report questionnaire designed to measure individuals’ susceptibility

toward substance misuse. Participants rate their agreement with each item using a 4-point Likert scale (0 = *Completely disagree* to 3 = *Completely agree*) plus 5 ‘lie detector’ items being reversed scored. The IAPS measures two factors; Active Addiction Potential represents anti-social behaviors, a tendency to drug abuse, positive attitudes towards drugs, and sensation seeking (28 items) and Passive Addiction Potential represents lack of assertiveness and presence of depressive symptoms (9 items). The IAPS scale has shown high internal consistency in prior research using Iranian undergraduate students; Cronbach’s α was 0.87 for the total scale, 0.85 for the active addiction potential subscale, and 0.70 for the passive addiction potential subscale (Sajadi et al., 2014). In the current study, Cronbach’s α was 0.94 for the total scale, 0.95 for the active addiction potential subscale, and 0.77 for the passive addiction potential subscale.

Narcissistic Personality Inventory-16 (NPI-16) The NPI-16 (Ames et al., 2006; Persian version, Mohammadzadeh, 2010) is a 16-item pairs questionnaire designed to measure narcissistic personality traits that were developed as a brief measure of the 40-item NPI measure (Raskin & Terry, 1988). For each pair of statements, participants are asked to choose the item that they identify with most. The NPI-16 scores have documented validity support (e.g., Gentile et al., 2013). In the current study, internal consistency (Cronbach’s α) for the total scale was 0.80.

Barratt Impulsiveness Scale (BIS) The BIS (Patton et al., 1995; Persian version, Eftekhari et al., 2008) is a 30-item self-report questionnaire designed to measure personality/behavioral construct of impulsiveness. Participants rate their agreement with each item using a 4-point Likert scale (1 = *Never* to 4 = *Always*). The BIS has three subscales: motor (11 items), cognitive (8 items) and non-planning (11 items) impulsiveness. The scale showed high internal consistency in prior research using Iranian university students; Cronbach’s α was reported to be 0.81 for the total score (Javid et al., 2012). In the current study, internal consistency (Cronbach’s α) for the total scale was 0.79, and for each subscale was 0.59 (non-planning), 0.60 (cognitive), and 0.71 (motor).

Students’ Deviant Behaviors (SDB) The SDB (Original Persian; Aliverdina & Younesi, 2015) is a 21-item self-report questionnaire designed to measure deviant behavior among Iranian university students. The SDB has four subscales including “substance abuse, use of alcoholic drinks, psychedelia and sexual perversion” (9 items), “vandalism and robbery” (5 items), “educational cheating” (3 items), and “aggression” (4 items). Participants were asked to specify whether they had acted on each described behavior using six

response options (0 = *No*, 1 = *Yes, but only once*, to 5 = *Yes, more than ten times*). The scale has shown high internal consistency in prior research using Iranian undergraduate students; Cronbach’s α was reported to be 0.92 for the total score (Aliverdina & Younesi, 2015). In the current study, internal consistency (Cronbach’s α) for the total scale was 0.88.

Social Deviance Checklist (SDC) The SDC is a 20-item self-report questionnaire developed for the current study to measure dimensions of social deviance that are directly relevant to the Iranian context. To do this, we conducted two preliminary experiments. First, we recruited 103 participants who ranged in age from 19 to 54 years (M age = 31.53 years; SD = 8.18; 63% females) via social media in Iran. Participants were presented with a brief lay definition of social deviance and then were asked to write down at least five forms of social deviance that they believed were prevalent in Iranian society. In total, participants provided 20 examples of social deviance including embezzlement, aggression, substance abuse, unreliability (i.e., lying), vandalism, sexual deviance (homosexuality, group sex), infidelity, violence against women, privacy violation, vilification, animal-cruelty, driving offences, and favoritism.

Next, we recruited 43 practicing Iranian clinical psychologists who ranged in age from 27 to 53 (M age = 33.16; SD = 8.41; 65% females) and presented them with a description of psychopathy personality. We then presented participants with the 20 forms of social deviation obtained in the first experiment and asked them to use a 10-point rating scale (1 = *Not relevant* to 10 = *Very relevant*) to rate how relevant each form of social deviance was to psychopathy personality in the context of Iran. The Intra-class Correlation Coefficient (ICC; two-way random effects model with the absolute agreement) used to assess reliability across raters was 0.87.

Overall, the social deviance dimensions that received the highest ratings of relevance to psychopathy personality in Iran were unreliability, vandalism, aggression, and substance abuse. However, because these four dimensions were already part of existing Persian measures that we used in the current study (i.e., Students’ Deviant Behaviors and the Iranian Addiction Potential Scale), we used the four next most highly-rated dimensions (infidelity, privacy violation, vilification, and violence against women) in the Social Deviance Checklist. In the final version that we used in Study 2, participants were presented with 20 questions (e.g., “*Have you ever been in a romantic relationship with more than one person at a same time?*”) and were asked to specify whether they had acted on each behavior using six response options (1 = *No*, 2 = *Yes, once*, to 6 = *more than five times*).

The internal consistency (Cronbach's α) for the total scale was 0.88.

Results

Internal consistency reliability To explore the reliability estimates of the Persian CAPP-SR, we calculated model-based (i.e., omega; McDonald, 1999) and classic test theory (i.e., coefficient alpha) estimates of internal consistency. The Persian CAPP-SR demonstrated high internal consistency for the total score ($\alpha=0.91$, $\omega=0.91$), and adequate internal consistency for all the six domains (Attachment: $\alpha=0.73$, $\omega=0.73$; Behavioral: $\alpha=0.73$, $\omega=0.73$; Cognitive: $\alpha=0.73$, $\omega=0.73$; Dominance: $\alpha=0.72$, $\omega=0.72$; Emotional: $\alpha=0.53$, $\omega=0.57$; and Self: $\alpha=0.76$, $\omega=0.76$). For the 33 symptoms scales, omega estimates ranged from 0.37 (Insincere) to 0.67 (Lacks Emotional Stability), with a median of 0.55 (Table 1). While the brevity of the symptom scales (i.e., 3 items per symptom scale) is a strength in terms of time and ease of administration, it also affects lower omega estimates due to scale brevity (see Revelle & Condon, 2019), and therefore need to be interpreted with that caution in mind.

Criterion validity To explore the criterion validity of the Persian CAPP-SR, we conducted a series of Pearson product-moment correlations between the CAPP-SR total scores, domains, and symptoms with their direct counterparts of the CAPP-LRS and with LSRP total scores and its three factors. We conservatively interpreted the bivariate correlations as meaningful only if their strength was at least of medium effect size ($r \geq |0.30|$) to account for the influence of shared method variance. The results are presented in Table 1.

With respect to LSRP, we found a large criterion correlation between CAPP-SR total score and LSRP total score ($r=.79$). At the CAPP-SR domain level, all domains were largely correlated with theoretically corresponding LSRP factors ($r \geq |0.50|$), except for the emotional ($r=.43$) and cognitive ($r=.46$) domains. At the CAPP-SR symptom level, most of the correlations between CAPP-SR symptoms and LSRP factors were consistent with conceptual expectations, and their magnitude ranged from medium to large (See Table 1). There were, however, exceptions to this pattern. The correlations between CAPP-SR Detached ($r=.29$), Lacks Emotional Depth ($r=.24$), Lacks Pleasure ($r=.15$), and Lacks Anxiety ($r=.00$), with LSRP Callous did not reached our priori threshold for meaningfulness. Also, the correlations between CAPP-SR Lacks Planfulness ($r=.29$) and Unreliable ($r=.08$) with LSRP Antisocial failed to meet our threshold for meaningfulness. Moreover, the

correlations between CAPP-SR Self-Aggrandizing ($r=.27$) and Deceitful ($r=.22$) with LSRP Egocentricity were other exceptions to our hypothesized pattern.

With respect to CAPP-LRS, we found a large criterion correlation between the CAPP-SR total score and CAPP-LRS total score ($r=.54$). At the CAPP-SR domain level, all domains were correlated with their direct counterparts of CAPP-LRS, and their magnitudes ranged from medium to large. The largest correlations were between CAPP Attachment domains ($r=.50$) and the lowest correlation was between CAPP Emotional domains ($r=.36$). At the CAPP-SR symptom level, the criterion correlations were more variable. Twelve CAPP-SR symptoms did not reach our priori threshold for meaningfulness ($r \geq |0.30|$), with the majority being in the 0.22-0.29 range (See Table 1). The highest correlations were between Detached, Restless, and Lacks Concentration scales ($r_s=0.49$), and the lowest correlations, that met the threshold for meaningfulness, were between Lacks Anxiety and Self-Aggrandizing scales ($r_s=0.30$). Unexpectedly, the CAPP-SR Unreliable scale showed no criterion correlation with neither the LSRP total and its three factors nor with the corresponding CAPP-LRS.

Convergent validity To explore the convergent validity of the Persian CAPP-SR scale scores, we calculated a series of Pearson correlations between the CAPP-SR total scores, domains, and symptoms with those of other conceptually-relevant criterion measures. These correlations are reported in Tables 1 and 2. In bold typeface, we indicate which CAPP-SR domains and symptoms are expected to be most theoretically relevant to those of the external psychopathy scale. Again, we interpreted the correlations as meaningful only if their strength was at least of medium effect size ($r \geq |0.30|$).

As shown in the tables, for the most part, the CAPP-SR domains and symptoms converged with their conceptually hypothesized scales on the ICU, IAPS, BIS, and SDC. There were, however, some exceptions to this pattern. For example, CAPP-SR Lacks Anxiety, Lacks Pleasure, and Sense of Entitlement did not correlate to a meaningful degree with their conceptually-expected subscales on the ICU. Although the CAPP-SR Attachment domain was significantly correlated, at a medium effect size, with ICU Unemotional, the correlations between the Attachment symptoms and ICU Unemotional did not reach our threshold for meaningfulness. With respect to correlations with Active and Passive Addiction Potential, CAPP-SR Reckless, Restless, and Lacks Planfulness scores did not meet our significance threshold for meaningfulness with their respective conceptually-related scales. With respect to NPI, CAPP-SR Self-Aggrandizing and Sense of Uniqueness were the only

Table 1 Correlations between Persian CAPP-SR with LSRP, Persian CAPP-LRS and ICU scores

Persian CAPP-SR	LSRP			CAPP-LRS				ICU Total	Uncaring	Umemotional
	Mean (SD)	ω	Total	Egocentricity	Callous	Antisocial	Callousness			
Total	2.11 (0.27)	0.91	0.79	0.59	0.40	0.64	0.54	0.50	0.22	0.17
Attachment	1.72 (0.39)	0.73	0.56	0.30	0.50	0.35	0.50	0.65	0.44	0.30
A1. Detached	1.88 (0.57)	0.59	0.33	0.15	0.29	0.29	0.49	0.38	0.21	0.28
A2. Uncommitted	1.58 (0.59)	0.57	0.53	0.40	0.40	0.29	0.27	0.52	0.31	0.19
A3. Unemphatic	1.69 (0.51)	0.38	0.35	0.17	0.42	0.14	0.37	0.53	0.33	0.25
A4. Uncaring	1.72 (0.50)	0.45	0.38	0.15	0.35	0.30	0.22	0.46	0.43	0.13
Behavioral	2.12 (0.33)	0.73	0.64	0.41	0.30	0.63	0.47	0.40	0.21	0.07
B1. Lacks perseverance	2.10 (0.57)	0.47	0.40	0.15	0.16	0.51	0.37	0.27	0.25	0.07
B2. Unreliable	2.35 (0.46)	0.41	0.02	-0.03	-0.10	0.08	0.07	0.01	-0.01	-0.04
B3. Reckless	2.20 (0.55)	0.53	0.42	0.31	0.15	0.39	0.29	0.15	0.03	-0.03
B4. Restless	2.30 (0.66)	0.60	0.33	0.23	0.12	0.37	0.49	0.08	-0.05	-0.04
B5. Disruptive	1.97 (0.58)	0.43	0.48	0.29	0.31	0.45	0.36	0.44	0.36	0.15
B6. Aggressive	1.80 (0.62)	0.59	0.49	0.40	0.35	0.31	0.39	0.39	0.19	0.13
Cognitive	2.11 (0.36)	0.73	0.70	0.46	0.35	0.66	0.48	0.42	0.26	0.18
C1. Suspicious	2.24 (0.53)	0.55	0.48	0.38	0.24	0.37	0.33	0.23	0.09	0.17
C2. Lacks concentration	2.27 (0.60)	0.55	0.41	0.24	0.13	0.50	0.49	0.17	0.12	0.03
C3. Intolerant	1.77 (0.59)	0.57	0.58	0.45	0.36	0.43	0.14	0.34	0.16	0.09
C4. Inflexible	2.12 (0.62)	0.57	0.51	0.41	0.18	0.48	0.41	0.36	0.19	0.19
C5. Lacks planfulness	2.14 (0.55)	0.61	0.22	-0.05	0.18	0.29	0.43	0.25	0.30	0.08
Dominance	2.10 (0.36)	0.72	0.62	0.58	0.30	0.39	0.45	0.30	0.08	0.03
D1. Antagonistic	1.95 (0.60)	0.60	0.52	0.38	0.32	0.40	0.40	0.35	0.18	0.03
D2. Domineering	2.48 (0.60)	0.56	0.27	0.39	-0.02	0.15	0.38	-0.00	-0.08	-0.11
D3. Deceitful	1.70 (0.56)	0.48	0.40	0.22	0.39	0.20	0.28	0.44	0.34	0.21
D4. Manipulative	2.04 (0.62)	0.56	0.39	0.40	0.17	0.23	0.27	0.22	0.09	0.11
D5. Insincere	2.38 (0.59)	0.37	0.23	0.32	0.03	0.10	0.22	-0.03	-0.16	-0.03
D6. Garrulous	2.07 (0.64)	0.54	0.39	0.35	0.21	0.28	0.23	0.10	-0.06	-0.05
Emotional	2.10 (0.30)	0.57	0.62	0.41	0.43	0.46	0.36	0.54	0.30	0.34
E1. Lacks anxiety	2.64 (0.60)	0.49	0.07	0.23	0.00	-0.13	0.30	0.03	-0.11	-0.07
E2. Lacks pleasure	2.08 (0.62)	0.65	0.14	-0.07	0.15	0.28	0.37	0.19	0.22	0.25
E3. Lacks emotional depth	2.03 (0.60)	0.53	0.42	0.29	0.24	0.34	0.35	0.45	0.22	0.49
E4. Lacks emotional stability	2.19 (0.62)	0.67	0.50	0.31	0.22	0.56	0.33	0.21	0.11	0.08
E5. Lacks remorse	1.57 (0.58)	0.51	0.41	0.27	0.47	0.10	0.31	0.49	0.31	0.09
Self	2.35 (0.36)	0.76	0.56	0.54	0.12	0.49	0.47	0.19	-0.06	-0.00
S1. Self-centered	2.17 (0.58)	0.48	0.50	0.44	0.21	0.36	0.35	0.29	0.13	0.08
S2. Self-aggrandizing	2.55 (0.66)	0.60	0.18	0.27	-0.03	0.10	0.30	-0.05	-0.20	-0.08
S3. Sense of uniqueness	2.39 (0.62)	0.59	0.36	0.39	0.11	0.24	0.42	0.12	-0.04	-0.03
S4. Sense of entitlement	2.69 (0.61)	0.55	0.30	0.40	-0.04	0.28	0.26	-0.04	-0.28	-0.03

Table 1 (continued)

	LSRP		CAPP-LRS			ICU	
	2.62 (0.54)	0.50	0.13	0.31	-0.12	0.02	0.23
S5. Sense of invulnerability			0.13	0.31	-0.12	0.02	0.23
S6. Self-justifying	1.87 (0.60)	0.60	0.48	0.30	0.26	0.47	0.23
S7. Unstable self-concept	2.16 (0.61)	0.50	0.39	0.15	0.10	0.58	0.40
Mean			56.08	22.40	6.39	11.13	1.13
SD			7.59	3.89	2.40	2.50	0.89

Note. ω = McDonald's omega reliability coefficient; CAPP-SR = Comprehensive Assessment of Psychopathic Personality-Self-Report; LSRP = Levenson Self-Report Psychopathy Scale; CAPP-LRS = CAPP Lexical Rating Scale; ICU = Inventory of Callous-Unemotional Traits. Correlations in bold typeface are conceptually hypothesized. All $r \geq |0.30|$ are statistically significant ($p < .001$); lower correlations are not deemed meaningful

symptom scales that reached our threshold for meaningfulness with their conceptually-related scales. With respect to Social Deviance Behaviors (i.e., SDC and SDB measures), CAPP-SR Uncommitted, Disruptive, Aggressive, Intolerant, Deceitful, and Lacks Remorse reached our threshold for meaningfulness with their conceptually-related scales. However, CAPP-SR Lacks Perseverance, Reckless, Restless, Lacks Planfulness, Lacks Emotional Stability, and Self-Justifying did not reach our threshold for meaningfulness with their conceptually-related scales. Again, CAPP-SR Unreliable scale did not show any correlation with any of the psychopathic-related personality scales.

We also examined the amount of variance of criterion measure (i.e., LSRP), and other external psychopathy personality measures (i.e., ICU, IAPS, BIS, SDC, NPI, and SDB) that could be accounted for by CAPP-SR symptom scales, and also, which of the latter scales contributed uniquely to these predictions. For this purpose, we conducted a series of regression analyses with the strategy of entrance condition that only those hypothesized CAPP-SR symptoms that reached our threshold for meaningfulness ($r \geq |0.30|$) in the previous bivariate analyses were included in the models. The results of the regression analyses are reported in Table 3.

As shown in Table 3, the hypothesized symptoms explained the substantial amount of variance of the LSRP subscales scores ($R^2 = 0.32-0.61$). The CAPP-SR symptoms Suspicious, Intolerant, Antagonistic, Domineering, Manipulative, Garrulous, Sense of Entitlement, and Sense of Invulnerability remained significant predictors for LSRP Egocentricity. LSRP Callous was uniquely predicted by CAPP-SR Unempathic and Lacks Remorse. The significant predictors of LSRP Antisocial were CAPP-SR Lacks Perseverance, Restless, Lacks Concentration, Inflexible, Lacks Emotional Stability, and Unstable Self-Concept.

The amount of ICU score variance explained by CAPP-SR symptoms ranged from 0.23 to 0.45. The CAPP-SR symptoms significantly predicting ICU subscales were CAPP-SR Uncommitted, Unempathic, Uncaring, Lacks Emotional Depth, and Lacks Remorse. The amount of IAPS variance accounted for by CAPP-SR symptoms was 0.29 for Active addiction potential and 0.28 for Passive addiction potential. Active addiction potential was uniquely predicted by CAPP-SR Lacks Perseverance, Aggressive, and Self-justifying, and Passive addiction potential was uniquely predicted by CAPP-SR Lacks Concentration, Lacks Pleasure, and Lacks Emotional Stability. The amount of BIS variance explained by CAPP-SR symptoms was 0.43. BIS was uniquely predicted by CAPP-SR Lacks Perseverance, Reckless, Restless, Disruptive, and Lacks Planfulness. The amount of SDC variance explained by CAPP-SR symptoms was 0.22. The significant unique predictors of SDC

Table 2 Correlations between Persian CAPP-SR and psychopathic-relevant personality measures

Persian CAPP-SR	IAPS				SDB						
	Total	Active	Passive	BIS	SDC	NPI	Total	Substance abuse	Vandalism	Educational Cheating	Aggression
Total	0.56	0.53	0.45	0.48	0.43	0.31	0.40	0.30	0.29	0.21	0.43
Attachment	0.40	0.40	0.21	0.34	0.32	0.14	0.29	0.23	0.29	0.08	0.31
A1. Detached	0.20	0.18	0.23	0.09	0.09	0.00	0.07	0.02	0.13	-0.02	0.12
A2. Uncommitted	0.41	0.42	0.17	0.33	0.35	0.24	0.30	0.24	0.26	0.14	0.28
A3. Unemphatic	0.27	0.28	0.09	0.21	0.27	0.07	0.27	0.25	0.22	0.07	0.27
A4. Uncaring	0.28	0.29	0.10	0.34	0.24	0.10	0.22	0.19	0.22	0.05	0.21
Behavioral	0.51	0.49	0.39	0.56	0.39	0.17	0.36	0.26	0.26	0.20	0.39
B1. Lacks perseverance	0.35	0.32	0.38	0.46	0.21	0.03	0.16	0.10	0.09	0.13	0.17
B2. Unreliable	-0.04	-0.06	0.02	0.11	-0.05	-0.03	-0.03	-0.00	-0.03	-0.05	-0.02
B3. Reckless	0.28	0.27	0.24	0.41	0.27	0.15	0.25	0.20	0.19	0.17	0.22
B4. Restless	0.30	0.28	0.26	0.30	0.23	0.10	0.16	0.11	0.14	0.08	0.17
B5. Disruptive	0.36	0.35	0.22	0.37	0.31	0.11	0.35	0.26	0.28	0.18	0.37
B6. Aggressive	0.42	0.44	0.17	0.25	0.30	0.17	0.30	0.20	0.19	0.14	0.39
Cognitive	0.49	0.45	0.49	0.50	0.38	0.22	0.34	0.25	0.25	0.19	0.35
C1. Suspicious	0.23	0.19	0.30	0.21	0.24	0.23	0.15	0.11	0.09	0.07	0.17
C2. Lacks concentration	0.30	0.25	0.44	0.40	0.22	0.07	0.17	0.11	0.12	0.15	0.17
C3. Intolerant	0.43	0.40	0.36	0.29	0.35	0.26	0.28	0.26	0.22	0.08	0.30
C4. Inflexible	0.31	0.30	0.22	0.24	0.25	0.13	0.24	0.17	0.18	0.15	0.23
C5. Lacks planfulness	0.27	0.26	0.21	0.44	0.15	-0.01	0.22	0.15	0.17	0.15	0.21
Dominance	0.40	0.38	0.28	0.29	0.31	0.32	0.30	0.21	0.22	0.19	0.31
D1. Antagonistic	0.31	0.31	0.20	0.28	0.21	0.09	0.23	0.15	0.19	0.09	0.28
D2. Domineering	0.13	0.13	0.09	0.03	0.10	0.28	0.11	0.11	0.04	0.11	0.07
D3. Deceitful	0.29	0.30	0.13	0.22	0.35	0.12	0.32	0.22	0.32	0.15	0.32
D4. Manipulative	0.26	0.26	0.13	0.16	0.17	0.15	0.17	0.10	0.15	0.05	0.22
D5. Insincere	0.12	0.10	0.15	0.09	0.15	0.25	0.09	0.04	0.06	0.12	0.05
D6. Garrulous	0.28	0.25	0.30	0.24	0.12	0.23	0.16	0.12	0.02	0.15	0.16
Emotional	0.42	0.40	0.33	0.29	0.33	0.15	0.35	0.31	0.22	0.17	0.35
E1. Lacks anxiety	0.07	0.11	-0.12	-0.01	0.06	0.19	0.12	0.11	0.05	0.12	0.10
E2. Lacks pleasure	0.14	0.09	0.30	0.08	0.00	-0.10	0.03	0.09	0.02	-0.05	0.01
E3. Lacks emotional depth	0.31	0.28	0.28	0.11	0.19	-0.03	0.20	0.15	0.14	0.13	0.19
E4. Lacks emotional stability	0.28	0.24	0.34	0.30	0.24	0.07	0.21	0.12	0.07	0.17	0.27
E5. Lacks remorse	0.25	0.27	0.00	0.25	0.33	0.26	0.31	0.30	0.28	0.06	0.32
Self	0.42	0.39	0.36	0.29	0.30	0.35	0.26	0.19	0.15	0.14	0.30
S1. Self-centered	0.36	0.35	0.27	0.26	0.31	0.26	0.24	0.24	0.19	0.07	0.22
S2. Self-aggrandizing	0.18	0.18	0.09	0.08	0.15	0.37	0.10	0.06	0.06	0.04	0.13
S3. Sense of uniqueness	0.24	0.23	0.13	0.07	0.15	0.34	0.18	0.15	0.11	0.09	0.18
S4. Sense of entitlement	0.16	0.13	0.22	0.09	0.11	0.29	0.06	-0.06	0.00	0.15	0.15

Table 2 (continued)

	IAPS		SDB									
S5. Sense of invulnerability	0.08	0.09	-0.03	-0.02	0.07	0.17	0.14	0.09	0.04	0.13	0.16	
S6. Self-justifying	0.41	0.37	0.40	0.38	0.27	0.02	0.24	0.22	0.18	0.08	0.25	
S7. Unstable self-concept	0.34	0.29	0.44	0.34	0.17	0.01	0.13	0.11	0.07	0.04	0.16	
Mean	29.18	17.73	11.08	61.93	0.54	4.47	1.59	1.33	1.30	2.61	1.77	
SD	<i>19.82</i>	<i>17.40</i>	<i>4.95</i>	<i>9.99</i>	<i>0.69</i>	<i>3.50</i>	<i>0.66</i>	<i>0.65</i>	<i>0.73</i>	<i>1.40</i>	<i>1.05</i>	

Note. IAPS = Iranian Addiction Potential Scale; BIS = Barratt Impulsiveness Scale; SDC = Social Deviant Checklist; NPI = Narcissistic Personality Inventory; SDB = Students' Deviant Behaviors. Correlations in bold typeface are conceptually hypothesized. All $r \geq |0.30|$ are statistically significant ($p < .001$); lower correlations are not deemed meaningful

were CAPP-SR Intolerant, Deceitful, and Lacks Remorse. The amount of NPI variance explained by CAPP-SR symptoms was 0.16, and CAPP-SR Self-Aggrandizing and Sense of Uniqueness were the unique significant predictors of NPI. The amount of SDB Aggression variance explained by CAPP-SR symptoms was 0.22, and CAPP-SR Disruptive, Aggressive, and Lacks Remorse were its significant predictors.

As can be seen in Table 3, the CAPP-SR symptoms remained significant in at least one regression model, with five exceptions; Detached, Unreliable, Insincere, Lacks Anxiety, and Self-centered. The results of both sets of regression analyses indicate that the Persian CAPP-SR appear to capture a substantial range of psychopathic personality traits.

Incremental validity. To examine the incremental validity of the Persian CAPP-SR symptom scores over the CAPP-LRS symptom scores in capturing variance in other external psychopathy personality measures' total scores and subscales, we conducted two series of hierarchical regression analyses. In the first series of regressions, we examined the amount of additional variance accounted for by the CAPP-SR scales. To do so, we regressed the 33 CAPP-LRS symptoms in one block, followed by the 33 CAPP-SR symptoms in the subsequent block, to predict each criterion variable. To fully test the partitioning of variance in this model, we conducted a second series of regressions to examine the amount of incremental variance accounted for by CAPP-LRS scales, above and beyond CAPP-SR scale scores. To do so, we reversed the order of entry, with the 33 CAPP-SR symptoms in the first block and the 33 CAPP-LRS in the following block. These results are reported in Table 4.

As shown in Table 4, the CAPP-SR outperformed the CAPP-LRS in all the predictions (mdn. $R^2 = 0.54$; range: 0.47-0.66 [CAPP-SR] vs. mdn. $R^2 = 0.30$; range: 0.23-0.41 [CAPP-LRS]). In terms of incremental validity, the CAPP-SR scales added a substantial amount of variance (mdn. $\Delta R^2 = 0.32$; range: 0.24-0.44) to the CAPP-LRS scales in all the instances. However, the CAPP-LRS accounted for far less variance above and beyond CAPP-SR scale scores (mdn. $\Delta R^2 = 0.08$; range: 0.05-0.13), with most increments being statistically non-significant.

General Discussion

The current study was an attempt to further globalize the conceptualization and operationalization of psychopathic personality disorder by translating and validating the CAPP-SR in an Iranian population—a nation and culture in which psychopathy research is grossly underrepresented. In Study 1, we translated the CAPP-SR into Persian, and the results

Table 3 Multiple regression analyses predicting external psychopathy personality measures

CAPP-SR predictor variables	LSRP			ICU			IAPS		BIS	SDC	NPI	SDB Aggression
	Ego	Callous	Anti	Callousness	Uncaring	Unemotional	Active	Passive				
A1. Detached	--	--	--	0.04	--	--	--	--	--	--	--	--
A2. Uncommitted	--	0.11	--	0.21	0.09	--	--	--	--	0.10	--	--
A3. Unemphatic	--	0.16	--	0.19	0.10	--	--	--	--	--	--	--
A4. Uncaring	--	0.10	--	0.05	0.31	--	--	--	--	--	--	--
B1. Lacks perseverance	--	--	0.12	--	--	--	0.17	--	0.21	--	--	--
B2. Unreliable	--	--	--	--	--	--	--	--	--	--	--	--
B3. Reckless	--	--	0.07	--	--	--	--	--	0.22	--	--	--
B4. Restless	--	--	0.08	--	--	--	--	--	0.11	--	--	--
B5. Disruptive	--	--	0.02	--	--	--	0.08	--	0.11	0.10	--	0.22
B6. Aggressive	--	0.06	-0.02	0.09	--	--	0.33	--	--	0.05	--	0.22
C1. Suspicious	0.13	--	--	--	--	--	--	--	--	--	--	--
C2. Lacks concentration	--	--	0.15	--	--	--	--	0.34	0.09	--	--	--
C3. Intolerant	0.15	0.12	--	0.08	--	--	--	--	--	0.13	--	--
C4. Inflexible	--	--	0.19	--	--	--	--	--	--	--	--	--
C5. Lacks planfulness	--	--	--	--	--	--	--	--	0.26	--	--	--
D1. Antagonistic	0.10	--	--	--	--	--	--	--	--	--	--	--
D2. Domineering	0.14	--	--	--	--	--	--	--	--	--	--	--
D3. Deceitful	--	--	--	--	--	--	--	--	--	0.15	--	--
D4. Manipulative	0.15	--	--	--	--	--	--	--	--	--	--	--
D5. Insincere	0.03	--	--	--	--	--	--	--	--	--	--	--
D6. Garrulous	0.11	--	--	--	--	--	--	--	--	--	--	--
E1. Lacks anxiety	--	--	--	--	--	--	--	--	--	--	--	--
E2. Lacks pleasure	--	--	--	--	--	--	--	0.21	--	--	--	--

Table 3 (continued)

CAPP-SR predictor variables	LSRP			ICU			IAPS		BIS	SDC	NPI	SDB Aggression
	Ego	Callous	Anti	Callousness	Uncaring	Unemotional	Active	Passive				
E3. Lacks emotional depth	--	--	--	0.06	--	0.49	--	--	--	--	--	--
E4. Lacks emotional stability	--	--	0.20	--	--	--	--	0.19	-0.03	--	--	--
E5. Lacks remorse	--	0.22	--	0.21	0.10	--	--	--	--	0.12	--	0.16
S1. Self-centered	0.07	--	--	--	--	--	--	--	--	--	--	--
S2. Self-aggrandizing	--	--	--	--	--	--	--	--	--	--	0.25	--
S3. Sense of uniqueness	-0.05	--	--	--	--	--	--	--	--	--	0.20	--
S4. Sense of entitlement	0.13	--	--	--	--	--	--	--	--	--	--	--
S5. Sense of invulnerability	0.15	--	--	--	--	--	--	--	--	--	--	--
S6. Self-justifying	--	--	0.06	--	--	--	0.16	--	0.05	--	--	--
S7. Unstable self-concept	--	--	0.29	--	--	--	--	--	--	--	--	--
<i>F</i>	22.21	24.02	47.68	31.62	23.14	100.62	32.20	40.51	29.29	14.78	30.96	29.52
<i>R</i> ²	0.45	0.32	0.61	0.45	0.23	0.24	0.29	0.28	0.43	0.22	0.16	0.22

Note. LSRP = Levenson Self-Report Psychopathy Scale; Ego = Egocentricity; Anti = Antisocial; ICU = Inventory of Callous-Unemotional Traits; IAPS = Iranian Addiction Potential Scale; BIS = Barratt Impulsiveness Scale; SDC = Social Deviant Checklist; NPI = Narcissistic Personality Inventory; SDB = Students' Deviant Behaviors; Numbers in bold typeface are statistically significant at least at level $p < .05$. Only those CAPP-SR symptoms that showed a significant correlation ($r \geq .30$) were selected as predicting variables; "--" means that the CAPP-SR symptom was not selected for the regression equation for that particular criterion

Table 4 Hierarchical Regression Analyses Predicting Psychopathy Scores with the CAPP-SR and CAPP-LRS

Psychopathy measure	Step 1: CAPP-LRS; Step 2: CAPP-SR				Step 1: CAPP-SR; Step 2: CAPP-LRS			
	<i>R</i> ²	<i>F</i>	ΔR^2	ΔF	<i>R</i> ²	<i>F</i>	ΔR^2	ΔF
LSRP	0.28	2.34**	0.44	7.87**	0.66	11.85**	0.05	1.03
Egocentricity	0.23	1.83*	0.39	5.30**	0.55	7.28**	0.08	1.08
Callous	0.24	1.89*	0.30	3.23**	0.47	5.30**	0.07	0.75
Antisocial	0.32	2.80**	0.38	6.47**	0.64	10.56**	0.06	1.11
ICU	0.41	4.17**	0.27	4.42**	0.59	8.82**	0.09	1.48 [†]
Callousness	0.39	3.79**	0.27	3.90**	0.53	6.67**	0.13	1.88*
Uncaring	0.27	2.19**	0.34	4.37**	0.52	6.43**	0.09	1.18
Unemotional	0.36	3.32**	0.25	3.17**	0.47	5.37**	0.13	1.70*

Note. CAPP-SR = Comprehensive Assessment of Psychopathic Personality–Self-Report; CAPP-LRS = CAPP Lexical Rating Scale; LSRP = Levenson Self-Report Psychopathy Scale. ICU = Inventory of Callous-Unemotional Traits. [†] $p < .05$, * $p < .01$, ** $p < .001$

of bilingual validation showed that the Persian version was equivalent in meaning to the English original. In Study 2, we examined the reliability and construct validity of the Persian CAPP-SR using a sample of Iranian university students. Overall, the current findings support the use of the Persian CAPP-SR as a reliable instrument with promising validity for measuring psychopathic personality and furthering research on the CAPP model among Persian speakers in Iran. These results were generally consistent with those findings of previous CAPP-SR validation studies (Sellbom et al., 2019, 2020; Shou et al., 2020).

More specifically, means and standard deviations of the Persian CAPP-SR symptoms scores were comparable to previous validation studies (e.g., Sellbom et al., 2020; Shou et al., 2020), although mean scores for two of the CAPP symptoms (i.e., Unreliable and Sense of Entitlement) tended to be somewhat elevated among the Iranian sample. This might reflect potential cultural differences among Iranian participants and those of English-speaking participants in previous studies. We return later to a discussion of potential cultural factors that might have caused these elevations.

The results of the reliability study were generally supportive of the internal consistency associated with the Persian CAPP-SR domain scale scores. The total scores of the Persian CAPP-SR exhibited high reliability ($\alpha = 0.91$) which was similar to previous studies using an English-speaking university sample ($\alpha = 0.92$; Sellbom et al., 2020). The reliability of the six CAPP-SR domains was relatively similar to the English-speaking university samples (Sellbom et al., 2020; Sellbom & Cooke, 2020). Notably, the Emotional domain was the least internally coherent ($\alpha = 0.53$), but this is the case in all the previous CAPP-SR (e.g., $\alpha = 0.66$, Sellbom & Cooke, 2020) and CAPP-LRS studies (Kavish et al., 2020).

Furthermore, in line with previous studies examining CAPP-SR in a non-Western context (Shou et al., 2020), we found that not all of the symptoms of CAPP-SR had high internal consistency in the current sample. It is important to note that internal consistency is not only the function of scale characteristics but also it is associated with the characteristics of the population that is administered the scale (McCrae et al., 2011). In this study, the Insincere symptom scale had low reliability among the Iranian sample, but this might not exclusively represent specific characteristics of the symptom scale. Alternatively, we argue that both our non-clinical sample that might relatively represent low levels of psychopathic traits and cultural factors that cause varying understanding of the scale statements might have impacted the values of internal consistency.

The results of the validity study showed that the CAPP-SR scales generally evidenced good criterion-related validity, with few exceptions to our hypothesized pattern as

discussed earlier. Also, the CAPP-SR scales converged with other psychopathic-relevant personality measures in a manner that was generally in line with our conceptual expectations. Furthermore, the CAPP-SR outperformed the CAPP-LRS with respect to adding a variance in other psychopathic-relevant personality measures.

As we mentioned earlier, there were some unexpected findings where the CAPP-SR symptom scales did not correlate with the hypothesized measures. For example, in the Emotional Domain, Lacks Anxiety and Lacks Pleasure did not correlate with hypothesized LSRP Callous and ICU subscales (i.e., Callousness, Uncaring, Unemotional). Similarly, Lacks Emotional Depth did not correlate with LSRP Callous and ICU Uncaring. These findings are partially in line with previous CAPP-SR studies where Sellbom and colleagues (2019) did not find a correlation between Lacks Anxiety and affective deficiency measures. Our findings are also partially in line with those studies that reported an inconsistent pattern of association between Callousness factors and hypothesized psychopathy-related constructs (Christian & Sellbom, 2016; Garofalo et al., 2019; Salekin et al., 2014; Sellbom, 2011). Moreover, the focus of LSRP Callousness is mostly other-oriented (e.g., lack of consideration for others and moral principles), whereas the items of Lacks Anxiety and Lacks Pleasure are self-oriented (e.g., lack of experiencing fear, stress, and enthusiasm). The lack of expected convergence between these measures might also be because Lacks Anxiety and Pleasure are less a result of affective and emotional deficiencies among Iranians. Another example is the Aggressive scale which did not correlate with ICU Uncaring and Unemotional. Taking Iranian culture into account, not only individuals can be high on Aggressive traits without necessarily being Uncaring and Unemotional. But also, aggressive behaviors are mostly explained and justified by the level of care and emotions that individuals hold about the subject of aggression. Future studies are needed in the context of Iran to elucidate whether these variables represent a cultural issue or are associated with experiencing ongoing societal and economic crises, and how this impacts the psychological profile of psychopathy personality among Iranians.

Of particular interest for this project, not all of the conceptually-relevant psychopathy traits predicted the Iranian culturally-specific measures (i.e., social deviance and addiction potential). For instance, grounded on the Western conceptualization of psychopathy, we hypothesized that all the six symptom scales of the CAPP-SR Behavioral dimension would be associated with active addiction potential and social deviance. Our hypothesis was partially supported because the Disruptive and Aggressive scales were associated with active addiction potential and the measures of social deviance. Lacks Perseverance was also associated

with active addiction potential, but not with social deviance. However, Unreliable, Reckless, and Restless did not correlate with addiction potential or social deviance measures.

One possible explanation for these unexpected findings might involve the content of the scales. The items in the Addiction Potential Scale heavily focus on individuals' attitudes about drugs, alcohol, and gambling, their tendency towards using drugs, and the associated sensation-seeking traits, whereas the CAPP-SR Reckless scale focuses on the rash, impetuous, risk-taking, and CAPP-SR Restless scale focuses on being overactive, energetic, and fidget (Sellbom & Cooke, 2020). Another possible explanation might involve our sample gender distribution. More than 70% of the current sample consisted of female students who represent significantly fewer psychopathy traits (Females $M=2.08$, $SD=0.26$; Males $M=2.20$; $SD=0.28$; $t(307)=3.45$, $p<.001$, Cohen's $d=0.44$), addiction potential (Females $M=23.93$, $SD=22.65$; Males $M=41.98$; $SD=15.82$; $t(307)=7.98$, $p<.001$, Cohen's $d=0.99$) and social deviance (Females $M=1.52$, $SD=0.68$; Males $M=1.76$; $SD=0.58$; $t(307)=3.02$, $p<.01$, Cohen's $d=0.37$) compared with males in Iran. This could have introduced range restrictions and potentially attenuated our observed correlations.

Cross-Cultural Implications for Psychopathy Construct in Iran

As we mentioned earlier, mean scores for Unreliable and Sense of Entitlement symptom scales tended to be somewhat elevated among the Iranian sample. Looking more closely at the three items that form the Sense of Entitlement symptom scale, the mean score for two of the items (i.e., "I deserve special treatment" and "I might be perceived as demanding, but I am also deserving") were in a normal range. However, scores on one item related to assertiveness with entitled motivation (i.e., "I often find that I have to be quite assertive in getting what I deserve") were higher than the normal ranges evidenced by other CAPP-SR items in this sample and contributed to the elevation in the sense of entitlement symptom score.

In this study, we endorsed a more literal approach to the translation of CAPP-SR to ensure precision and that the Persian version was equivalent to the English version. However, assertiveness is a multidimensional concept that is varied as a function of social and situational contexts (e.g., Eisler et al., 1975; Hess et al., 1980), and is partially impacted by a cognitive filter that individuals interpret social cues (Kirst, 2011; Vagos & Pereira, 2010). Among Iranians, assertiveness is perceived as a valued and adaptive behavior associated with healthy personality adjustment. Thus, it is possible

that the essence of this item may not be well articulated to Iranian participants and the rating on this statement might be moderated by the differential perception of assertiveness across cultures.

Consistent with the cross-cultural approach, while there might be certain psychological universals, the form and expression of the psychological processes might be shaped by cultural differences (Cooke, 1998). Therefore, cultural norms not only influence individuals' evaluations of different behaviors (and items) but also culture forms the way that people (develop) and express psychopathic features by encouraging some behaviors while discouraging others (Cooke & Michie, 1999). This approach is compatible with our findings regarding the Unreliable symptom scale on which Iranian participants scored highly, but did not show any correlation with any of the psychopathy personality scales. This finding is partially consistent with previous findings in Iran that showed Arrogant and Deceitful Interpersonal Style (i.e., Superficial, Deceitful, and Grandiose items; as measured by PCL-SV) could not effectively differentiate Iranian participants with psychopathy from those without (Shariat et al., 2010). This is also supported by the findings of a nationwide study in Iran, where 65% of participants ($n=17,000$) believed that hypocrisy, insincerity, and flattery traits and behaviors have been increasing in that society, and only 18% did not agree with this item (Iranians' values and attitudes, 2002). In another study, 78% of Iranian respondents ($n=18,045$) agreed on the item "Nowadays, people do not really know who the true believer is and who the hypocrite is" (National Research of Iranians' religiosity, 2011; p. 22 & 132). Iranian scholars view this phenomenon as social harm with historical foundations, and they believe that various cultural, societal, economic, and political factors contribute to maintaining and reinforcing these characteristics (e.g., Anvari, 2018; Nemati, 2013). Because discussing all of these factors is beyond the scope of this paper, we will discuss one of the cultural factors that might explain these characteristics; *ta'ārof*.

Ta'ārof—which is not translatable to English—is a fundamental concept in the Persian culture, which is learned very early in life, encompasses broad complex, strategic behaviors and social attitudes, and is practiced in thousands of different ways in everyday discourse (Bahmani, 2004; Beeman, 2020). *Ta'ārof*, which represents both linguistic structure and social behavior among Iranians (see Beeman, 2020 for further details), is often equated with politeness, courtesy, and respect to create an atmosphere of trust (Izadi, 2015, 2016). However, it can be viewed as a form of deception, manipulateness, and insincerity (Campbell, 2006; Fathi, 2004; Nejat, 2004). According to Campbell, "*ta'ārof* is also a knowingly false promise based on a false premise" (Campbell, 2006; p. 26). An Iranian communicator knows

the rules of *ta'ārof*; they are able to read between lines and they understand that if, for example, someone makes promises, that can be merely following cultural norms and that does not mean that the speaker will keep those promises, or someone might withhold the truth for the sake of being polite and considerate of others. This might be perceived as lying by an outsider, but we should also remember that the concept of lying is different across cultures and is affected by sociocultural norms and moral values (Sweetser, 1987).

Importantly, in Iran, *ta'ārof* is crucial to successful participation in society and allows individuals not only to be accepted and respected by others but also to achieve their goals (Mahdavi, 2013). Not doing *ta'ārof*, on the other hand, can become a source of inefficiency, create social tension, and being labelled as bold and cheeky (Beeman, 2020; Mahdavi, 2013). To support this argument, Iranians have shown to approve of hypocrisy and flattery in society because they believe that this interaction style is “a facilitator,” “a social skill and efficiency,” “a gate to social acceptance and desirability,” “a way to make friendship and relationship,” “a shortcut to success,” and “does not impact one’s sense of commitment and responsibility” (Iran’s Research Center of Art, Culture & Communication, 2014; <http://www.ricac.ac.ir/news.php?item.1074.1>).

Thus, unreliability is considered a socially deviant behavior in Iran, but cultural norms have influenced how maladaptive or unethical behavior is perceived, leading to variations in the way unreliability is manifested. This supports our findings that despite being rated high on unreliability, there was no correlation between this symptom and other psychopathy scales. Although unreliability is a significant feature of the psychopathy, its utility may be limited in the conceptual model of psychopathy applied in the Iranian context. Therefore, it should be carefully considered within the Iranian cultural framework.

Limitations and Future Directions

There are several limitations associated with this study upon which future studies can build. First, the data was collected online without monitoring. Although the procedure of online data collection may raise concerns regarding participants’ performance in completing the survey, we used validity indicator questions to screen out all the data with suspected careless and random response patterns. Second, the current study was limited by using only self-report questionnaires for measuring psychopathy characteristics. Although self-report questionnaires are valid and very commonplace in psychopathy studies (Sellbom et al., 2018), they are associated with high false positive rates with respect to personality disorder diagnosis (Jacobsberg et al., 1995), which refer to

the rate at which a test falsely identifies a condition that is not present (Sackett & Haynes, 2002). Structured clinical interviews tend to be more accurate than self-report questionnaires in reducing false positive rates. As such, a potential direction for future studies in Iran could be to further evaluate the psychometric properties of the Persian CAPP-SR using other assessment tools, such as clinical interviews. Third, using a nonclinical sample of university students not only restricts the generalizability of the current findings to other clinical/correctional samples but also might have impacted the magnitude of correlations, because the non-clinical population is more likely to be restricted in range with respect to psychopathy traits (Sellbom et al., 2015). As such, future studies could illuminate the applied utility of the Persian CAPP-SR in the correctional and forensic population of Iran. The final limitation concerns the absence of some other important sociocultural correlates that could inform us more expansively about the culturally-bound expression of psychopathy. As such, future studies could investigate the impact of potential cultural nosology, such as *ta'ārof* immersion, collectivism, duality of social life, and political atmosphere on the expression of psychopathy traits among Iranians.

Conclusion

Overall, the results of the current study provide empirical support for the cross-cultural adequacy and validity of the Persian CAPP-SR scale scores in a non-offender context of university students. In line with our hypothesis, the Persian CAPP-SR exhibited promising criterion and convergent validity, and also evidenced strong incremental validity with the other psychopathy scales. These results were comparable to those demonstrated by Sellbom et al. (2020) in a university sample. It is important to reiterate that personality disorders, including psychopathy, are more likely to be influenced by cross-cultural factors, compared to other mental disorders (Cooke, 1996; Draguns, 1986). The full account of sociocultural factors was beyond the scope of the current study, but to enhance research on cross-cultural personality pathology, further research along these lines will be beneficial.

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