



## RESEARCH ARTICLE

# Cross-Cultural Examination: Establishing Validity and Reliability of SRP 4 for Arabic Speakers

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## ABSTRACT

The study was conducted to address the need for scales to measure traits, in individuals aged 18 and older in Saudi Arabia with a strong emphasis on cultural relevance in psychological assessments by examining the Arabic Version of the Self-report Psychopathy Scale (AV SRP 4). The validation and reliability tests were carried out on a group of 921 college students in Saudi Arabia as a step towards validating the tool, for use within this setting. The study's approach involved analysis to establish the accuracy and consistency of the AV SRP 4 tool. Confirmatory factor analysis (CFA) was used to evaluate the scale's validity. The CFA outcomes supported a four-factor model suggesting that the AV SRP 4 adequately represents the aspects of psychopathy as defined in the scale. This study looked at aspects like how people interact with each other and their emotions and behaviors, like unpredictability and antisocial actions that are important when evaluating characteristics thoroughly. Ensuring the dependability of the research was also an area of interest in this investigation. Researchers used both Cronbach's ( $\alpha$ ) and Guttman Split Half coefficient to assess how consistent the scale was internally. The outcomes showed a level of reliability for the AV SRP 4 scale which suggests that the results it yields are reliable, across uses. The strong dependability of this tool gives reassurance that the AV SRP 4 could serve as a method for evaluating tendencies in Arabic-speaking communities. This is especially relevant, in the context of Saudi Arabia.

Governments worldwide, including those in Arab nations, have shown a deliberate commitment to addressing violent behaviors. This dedication extends across both security and non-security sectors, utilizing systematic, intellectual, educational, and social strategies. There is a notable emphasis on encouraging civil society organizations and research centers to actively participate in the counter-violence domain, specifically by addressing and alleviating the effects of antisocial personality disorder among individuals within and across societies. One strategy to attain this goal involves advocating for alterations in educational curricula. This would entail incorporating the principles of moderation and tolerance in interpersonal interactions, whether within one's own community or when engaging with diverse societies. Additionally, there should be a clear stance against violence, both in thought and behavior.

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Hence, the Saudi Arabian government has embraced numerous reform initiatives and programs within the education system. This reflects a dedicated attempt to improve the outcomes of the entire education and training framework, aspiring to achieve international quality standards. These efforts involve educational, rehabilitative, and training programs that stay abreast of contemporary developments, cater to the demands of the era, and align with the fast-evolving needs of both local and global job markets.

The Ministry of Education, in Saudi Arabia has introduced programs to educate and safeguard students in schools against deviations and behavioral issues specifically designed to equip students with life skills like leadership to tackle cultural and ethical challenges in society effectively. Their aim is also to improve their capacity for positive interactions with others by promoting virtues, like kindness tolerance compassion and forgiveness. Furthermore, these programs aim to inform students school personnel, and caregivers, about the nature of aggression its underlying reasons, and the signs that it may manifest.

Moreover, Saudi universities have initiated research initiatives and incentives to advocate for values of balance, tolerance, living together harmoniously, and discouraging violence, terrorism, and misguided beliefs. They have also organized global gatherings to delve into the complexities of violence and the underlying reasons, for its different forms, approaches, prevention, and its harmful impacts. Furthermore, establishing institutions dedicated to addressing hostility and launching educational programs promoting peace and nonviolence highlight their dedication to nurturing a peaceful and harmonious environment.

The Saudi Arabian government has been working diligently for, then twenty years through its establishments and security measures to foster a nurturing environment for students and families alike, with the goal of providing a secure and harmonious lifestyle for them. Additionally, it involves providing school staff and parents with appropriate preventive educational methods to reduce and address violent behaviors.

Hence, there is a pressing need for field research to explore the impact of all these initiatives carried out by the Ministry of Education and Saudi universities on public schools. This research is one of the academic the efforts to fight antisocial among youth in Saudi Arabia, considering gender and academic specialization differences. It is noteworthy that the majority (approximately 65%) of the Saudi Arabian population falls within the youth category, aged between 15 and 34 years, as reported by the General Authority for Statistics (2019).

The researchers' involvement (in line with their scientific specialization) is demonstrated in studying the validity and reliability of the antisocial scale in the Saudi Arabian context after its adaptation. This leads to the primary research question: What are the psychometric properties of the social alienation scale (Self-Report Psychopathy Scale-SRP 4) in the Saudi environment?

This research holds significance in tackling the absence of a widely recognized and psychometrically reliable scale for antisocial behavior, one that can be applied globally. Additionally, the study's outcomes play a crucial role in assessing the effectiveness of both educational and non-educational endeavors in Saudi Arabia aimed at curbing youth violence. The goal is to strengthen successful aspects and address shortcomings in these initiatives. Moreover, the research contributes to the advancement of psychopathy assessment by introducing a culturally pertinent and psychometrically validated tool. These findings not only deepen scholarly insights into psychopathic personality but also hold promise for practical applications in clinical and forensic settings, particularly within Saudi Arabia and potentially in similar cultural environments.

The SRP-4 has been translated into languages to ensure its accuracy and relevance, in cultural contexts. For instance, the full version and the abbreviated version (SRP-4 SF) of SRP-4 were found to have construct validity and align with the four-factor model of psychopathy in a study conducted with a community sample in Belgium (referenced as Gordts et al., 2017). The SRP-4 SF exhibited consistency in evaluating psychopathy within a population of inmates, in Mexico (cited as Sánchez-Bojórquez et al., 2022). In French-speaking Belgium, the extended version of the SRPI effectively identified aspects. Distinguished psychiatric individuals, from non-psychiatric ones (study by Ducro et al., 2016). In Latin America, the SRP-4 Short Form showed potential. Needs validation for consistent measurement (research, by Trajtenberg et al., 2023). Furthermore, in

a study involving UK prisons it was found that both the extended version and the abbreviated form of SRPs demonstrated consistency and ability to predict outcomes when compared to the Psychopathy Checklist Revised (conducted by Tew et al., 2015). By conducting validation studies in languages, it enhances the trustworthiness and applicability of research results resulting in accurate and meaningful conclusions.

Numerous research studies have looked into the effectiveness of psychopathy assessment tools, in a setting; however, no one has tailored the SRP-4 for the Arabic cultural context yet. For instance, Latzman and colleagues (2015) explored how well the Psychopathic Personality Inventory. Revised (PPI-R) holds up across cultures by studying data from the US, Egypt, and Saudi Arabia noting characteristics and consistent links to personality traits, under the Five Factor Model (FFM). Ghossoub and colleagues (2024) in their study, on the population outside of institutions validated the Levenson Self Report Psychopathy (LSRP) showcasing its validity and adding to the research on psychopathy in the Arab region. Megreya and team (2024) on the other hand determined that a three-factor structure including Egocentrism Callousness and Antisocial traits better portrayed the LSRP scale compared to its two-factor model. They noted reliability and similarities across cultures, in their findings. In a study, by El Keshky (2022) the Dark Triad Dirty Dozen was confirmed in Saudi Arabia with evidence supporting its three-factor structure and demonstrating internal reliability and validity across tests.

The PPI-R and SRP-4 are questionnaires that aim to measure traits in individuals but use methods for evaluation purposes. In a vein of comparison to the examples mentioned earlier in regard to psychopathy assessment tools such as LSRP and SRP-4 show variations not only in their theoretical underpinnings but also their structural components. Additionally, The Dark Triad Dirty Dozen alongside the SRP-4 focuses on capturing interpersonal tendencies albeit with differing extents of detail. The former provides a concise summary of characteristics while the latter presents a more in-depth analysis of psychopathic features.

The main objectives of the research include customizing and verifying the Self-Assessment Psychopathy Scale (SRP-4) to suit the environment and evaluating the measurement characteristics of the modified SRP-4 within the Saudi demographic group while also enrichening the limited field of studies regarding psychopathy, in Arabic-speaking nations. Moreover, the research endeavor seeks to guide and shape strategies and regulations for addressing conduct among young Saudis and deepening insights, into the elements that contribute to psychopathy in the cultural setting of Saudi Arabia. In aiming for these objectives, the research aims to offer perspectives into the occurrence and attributes of psychopathy, among individuals, in Saudi Arabia, consequently guiding the creation of prevention and intervention initiatives based on evidence.

The latest version of the Self-Assessment Psychopathy Scale (SRP-4) which contains 64 questions designed to identify traits while following the established structure of the Hare Psychopathy Checklist Revised (PCL) now also offers a condensed version, with 29 items, for cases where conducting the complete evaluation is not feasible or problematic (Paulhus et al., 2017). Both editions serve as self-assessment instruments tailored to evaluate characteristics in individuals aged 18 and older in environments (Roy & Neumann 2023).

The abbreviated version has shown an association, with the assessment (correlation coefficient of .92 as reported by Paulhus et al., 2017) and aligns with the four-dimensional structure proposed by Gordts et al. (2017). Both forms of SRP-4 psychopathy scales are increasingly used in research and practice despite criticisms that they may be susceptible to response distortion and bias (Knack, Blais, Baglole, & Stevenson, 2021). Therefore, we decided to translate the SRP into Arabic, adopt the AV-SRP 4, and examine its psychometric properties within the Saudi Arabian context.

The SRP-4 stands out among popular self-report measures of psychopathic personality due to several noteworthy strengths. Notably, the statistically supported and theoretically sound latent structure of SRP 4 is a significant advantage, setting it apart from other self-report psychopathy measures (Neumann & Hare, 2008; Roy & Neumann, 2023). SRP 4 demonstrates convergent validity (the extent to which responses on a test exhibit a strong relationship with responses on conceptually similar tests) with alternative measures of psychopathy and discriminant validity (when a test shows a lack of correlation with another measure whose underlying construct is conceptually unrelated) with associated constructs. Strong convergent correlations were identified between the facets of SRP 4 and two other psychopathy assessments: the Youth Psychopathic

Traits Inventory (YPI; Neumann & Pardini, 2014), and the Elemental Psychopathy Assessment (EPA, Lynam et al., 2011). The EPA is a psychopathy measure derived from the five-factor model of general personality (McCrae & Costa, 1990, as referenced in Lynam et al., 2011).

While the SRP 4 scales exhibited strong associations with the Impulsive Antisociality and Cold-heartedness scales of the Psychopathic Personality Inventory — Revised (PPI-R; Lilienfeld & Widows, 2005, as referenced in Miller & Lynam, 2012), as well as with the Meanness and Disinhibition scales of the Triarchic Psychopathy Measure (TriPM, Patrick, 2010, as cited in Sleep et al., 2019), they demonstrated small to moderate correlations with the Fearless Dominance and Boldness scales of these measures, respectively (Crego & Widiger, 2014). This finding was anticipated, given that the SRP 4 does not assess positive adjustment traits, which some researchers consider a fundamental aspect of psychopathy. Collectively, the connections observed between the SRP 4, SRP-SF, and other widely recognized measures of psychopathic traits suggest that these instruments share a common theoretical framework.

Concerning discriminant validity, studies indicate that SRP 4 scores cannot be entirely explained by general personality measures, as demonstrated by research conducted by Paulhus et al. (2016). Furthermore, the scores of SRP-4 also show connections with other negative personality traits like narcissism, Machiavellianism, and sadism in both self-reports and evaluations by peers. These results indicate that psychopathy identified through SR4 signifies a trait distinct from negative personality types (Paulhus et al., 2016).

In addition, to the known factor structure and results regarding consistency and distinctiveness validity presented in SRP-4 and SRP-SF; further evidence supporting the credibility of these measures can be seen in their connections with external indicators of psychopathy such as antisocial actions self-reported outward psychopathology, past criminal pasts, and forecasts of forthcoming criminal activities (Roy & Neumann 2023).

The latent correlations, representing statistical correlations between not directly observed variables, revealed varying degrees of correlation between SRP-4 and the Hare Psychopathy Checklist (PCL-R) suggesting a concordance between the two (Neumann et al., 2016). These correlations play a role in evaluating and improving equation models and provide a valuable understanding of how hidden variables interact with each other. Their findings help us better understand the framework and behavior of the validity of SRP-4 as studied by Roy and Neumann (2023).

The results of the reliability analyses showed that the total scores of SRP-III and SRP-SF demonstrated good reliability levels as per Gordts et al., (2017) findings. In addition to this, the internal consistencies of SRP-III subscales were found to range from acceptable to excellent ( $\alpha = .69$  to  $\alpha = .90$ ). The test-retest reliability for both scores was considered excellent while at the subscale level, it ranged from satisfactory to excellent based on bivariate test correlations. Test consistency over time declined for all subsections when using correlations. The correlation coefficients varied from  $r = 0.60$ , to  $r = 0.86$  as noted by Gordts and colleagues (2017).

Terms revealed by this study show that the SRP scale is a tool, for evaluating psychopathic characteristics on a comprehensive basis as well as at a more detailed level of analysis; however, it is advisable to exercise some caution when interpreting scores in specific subscales due to potential effects, from other factors at play.

Governments, around the world have been working diligently to address behavior through approaches in countries like Saudi Arabia in the Arab region by implementing a combination of security and non-security strategies that emphasize educational improvements and collaboration, with civil society organizations and research institutions. In Saudi Arabia specifically, initiatives focusing on promoting moderation, tolerance and leadership among students have been implemented through programs while universities are actively involved in conducting research and organizing conferences to tackle issues related to violence and antisocial conduct. However, it is necessary to conduct on-site investigations to gauge how these programs are affecting schools with a focus on gender and academic concentrations in mind. This study aims to assess how well the Self report Psychopathy Scale (SRP-4) Holds up in the context of Saudi Arabia, addressing the lack of measures for antisocial behavior while also examining the success of Saudi Arabia's endeavors, in decreasing youth

violence. The SRP-4, which has been adapted into various languages and shown strong construct validity and reliability in different cultural settings, including Belgian, Mexican, and UK prison populations, has not yet been adapted for Arabic-speaking populations. This study aims to adapt and validate the SRP-4 for Saudi Arabia, enhancing understanding and addressing psychopathy in Arabic-speaking countries and contributing to the development of culturally relevant tools for clinical and forensic use.

### Methodology

This section will provide comprehensive details regarding participants, data collection instruments, the methodology of data collection, and the statistical analysis procedures utilized.

#### Participants

The study aims to validate the Self-Response Psychopathy scale within the youth population in Saudi Arabia. The target population includes young individuals, both male and female, aged between 18 and 26 years, reflecting diverse cultural backgrounds. Convenience sampling was utilized to select units from the target population in a non-systematic manner, without systematic planning. This nonprobability sampling method is suitable for humanities research and is commonly employed in validation and reliability studies.

As outlined in the methodology, by Al Suhaihi (2003) a total of 1076 individuals participated in the study sample from the population group. The participants consisted of 567 men and 509 women as shown in Table 1 alongside their characteristics.

**Table 1.** Characteristics of The Sample.

		N	%
Gender	Male	567	52.7
	Female	509	47.3
	<b>Total</b>	<b>1076</b>	<b>100</b>
Age	18 – less than 20	230	30.3
	20 – less than 22	330	34.3
	22 – less than 24	170	22.4
	24 – 26	29	3.8
	Total	963	89.5
	Missing Data	113	10.5
<b>Total</b>		<b>1076</b>	<b>100</b>
Academic Specializations	Scientific Colleges	449	41.7
	Humanities Colleges	627	58.3
	<b>Total</b>	<b>1076</b>	<b>100</b>

The study adhered to the American Psychological Association's guidelines for ethical conduct in psychological research, education, and practice. The researchers informed participants about the procedures for data confidentiality, which included minimizing the involvement of third parties in the data collection process, keeping adequate records to ensure service provision and compliance with legal and institutional requirements, discussing the potential need to disclose confidential information, maintaining records for an appropriate period, and securely disposing of records. Participants provided written informed consent after receiving comprehensive information about the study's purpose, procedures, risks, and benefits. They were assured of confidentiality and informed of their right to withdraw from the study at any time without penalty.

The research has the advantage of having a group of 1076 participants consisting of both men and women aged, between 18 and 26 years old selected from the people in Saudi Arabia. The determination of the group size follows well-known methods that show methodological thoroughness. The variety of cultural backgrounds among the participants adds value to the study's discoveries. Boosts its applicability. Reporting details openly in Table 1 also bolsters the study's trustworthiness.

Around 11% of the age data was not available; however, we found that the remaining 89 percent of the 1076 participants (i.e., 963 individuals) provided a basis for thorough analysis and results evaluation. Hence, we chose not to use any imputation techniques or carry out sensitivity assessments.

In general, it appears that our sample is a reflection of the target population, for this study. This is likely due to the range of ages represented gender diversity, variation, in demographics a sizable sample size, and a suitable method of sampling.

### Measures

***The Self-Report Psychopathy Scale.*** The Self Evaluation Psychopathic Measure (SRP-4) is widely utilized for assessing characteristics in individuals over 18 in environments. is a well-known tool for self-assessment purposes The SRP-4 (Paulhus et al., 2017) comprises a total of 64 questions specifically designed to assess psychopathy traits. It is organized into four distinct facets of psychopathy. The four factors of SRP 4 are: (1) interpersonal factor (IPM) captures traits associated with a manipulative, deceptive interpersonal style, as well as tendencies towards pathological lying, (2) affective factor (CA) indexes disturbances in empathy and affiliative emotions toward others, (3) lifestyle factor (ELS) entails an impulsive and erratic behavioral approach, and (4) antisocial factor (CT) captures an inherent disregard for social and conventional norms such as delinquency and criminality (Massa, & Eckhardt, 2017). Each dimension was assessed using an equal number of items (16 for each), prompting participants to indicate, on a 5-point Likert Scale, the extent to which specific personality traits apply to them based on self-reporting, ranging from 1 (strongly disagree) to 5 (strongly agree).

Although there exists a robust correlation between the short form and the full-length measure of SRP 4 ( $r = .92$ ; Paulhus et al., 2017), and it aligns well with the four-facet model (Gordts et al., 2017), we have chosen to validate the complete version of SRP 4. This decision is supported by several advantages offered by the complete version, including greater depth of assessment, specificity of measurement, criterion validity, comparative analysis, and alignment with research objectives. Therefore, despite the strong correlation with the short form, validating the complete version is deemed beneficial.

***Personal information form.*** The questionnaire was designed to gather details of the participants, like age and gender. It also aimed to identify the interests of the participants for comparison with findings, from studies conducted in SRP-4 validation research.

***Adaptation of the Arabic Version of the Self-Report Psychopathy (AV-SRP 4).*** The researchers followed the rules, for translating and adjusting tests as recommended by Hernández et al. (2020). Various other studies, like Beaton et al., (2000) Tsang et al., (2017), and Hambleton & Lees (2013).

Four main steps were used to convert SRP-4 into a language which involved. (1st step); Forward Translation in which a professional translator translated SR 4 from its language, into Arabic; (Step 2); Backward Translation where another proficient translator retranslated it back into the original language to confirm precision and uniformity; The Expert Committee Translation was executed by a group of specialists, in both languages and psychometrics who scrutinized both the forward and backward translations to spot any inconsistencies and guarantee linguistic and cultural parity. Finally, a preliminary pilot test was conducted on the translated version of SRP-4 by giving it to a group of Arabic-speaking individuals to assess understanding, clarity, and cultural suitability before completing the translation process. Participants in the pilot study were requested to offer explanations of how they understood each question and its respective answers. During the stage of translation known as the Forward Translation, in process, we acquired a rendition of the SRP-4 from a specialist well-versed in psychology who is proficient in both Arabic and English and has familiarity, with the Saudi cultural environment. In the Backward Translation step, we received English translations of the previously translated Arabic version of the SRP-4 from a different expert with similar qualifications. During the Expert Committee Translation phase, three experts with the same qualifications as the translators reviewed both the forward and backward translations to identify discrepancies, ensure linguistic and cultural

equivalence, and assess whether the translated items were culturally relevant and understandable to the target population. The final SRP-4 form includes only those items for which at least two out of three experts agreed on their quality. This form was then used in the Preliminary Pilot Testing Translation step to evaluate comprehension, clarity, and cultural appropriateness from the participants' perspective. Feedback from participants was collected and used to revise the final form based on the majority of their input.

### Data Collection Process

The study employed a convenience sampling method to recruit participants, selecting college students due to their accessibility to the researchers. Convenience sampling, commonly used in the humanities, allowed the study to gather data from this readily available group. At first, the individuals were briefed on the objectives of the study before being requested to respond to SRP-4 inquiries utilizing a 5-level Likert Scale (ranging from 1 for strongly disagree, to 5 for strongly agree). Most participants spent around 10 to 15 minutes on average finishing the SRP-4 assessment thoroughly and comprehensively.

### Data Analysis

The research team analyzed the data using SPSS 25 and AMOS 24 software tools confirming the AV SRP 4 structure, with Confirmatory Factor Analysis (CFA), in the AMOS 24 program.

After ensuring that the scales structure was both valid and reliable, through Confirmatory Factor Analysis (CFA) the assessment of validity employed in Confirmatory Factor Analysis (SEM) a part of structural equation modeling (SEM) focused on assessing measurement models and exploring the connections between observed measures (like test items or scores) and factors (Brown 2015). Before conducting CFA for the scale, in question, factor analysis assumptions (Ulman 2001). It was confirmed that there were no outliers and that there were no issues regarding multicollinearity or singularity. Furthermore, we did not find any values that could negatively impact the analysis.

To gauge the trustworthiness of the scales accuracy and consistency measures, like Cronbach's ( $\alpha$ ) and the Guttman Split Half Coefficient were computed for evaluation purposes in the following section that elaborates on the trustworthiness and dependability of the AV-SRP4 scale.

## Results

This section includes descriptive statistics of the scale as well as findings regarding its validity and reliability.

### Construct Validity Studies of the AV-SRP 4

Confirmatory Factor Analysis (CFA) plays a role in ensuring the validity of constructs by providing a method to assess and confirm the factor structure of a measurement tool accurately and reliably (Bollen & Long 1993). Before conducting CFA to validate the structure of AV SRP 4 various assumptions were checked which included outliers, multicollinearity, and singularity problems. Exceptionally unusual observations known as outliers stand out from the rest of the data points in Table 1 as there are no data points among the participants listed thereon. Likewise in Table 2 summary statistics regarding participants' scores, on the AV-SRP4 revealed no indication of outliers among them.

**Table 2.** Descriptive Statistics

Factor Name	Min	Mean	Max	SEM*	Std. Deviation
IPM	24	44.24	75	0.219	7.195
CA	20	41.64	62	0.212	6.944
ELS	12	39.69	80	0.262	8.604
CT	2	28.84	63	0.330	10.812
Total Score	74	154.41	246	0.81	26.577

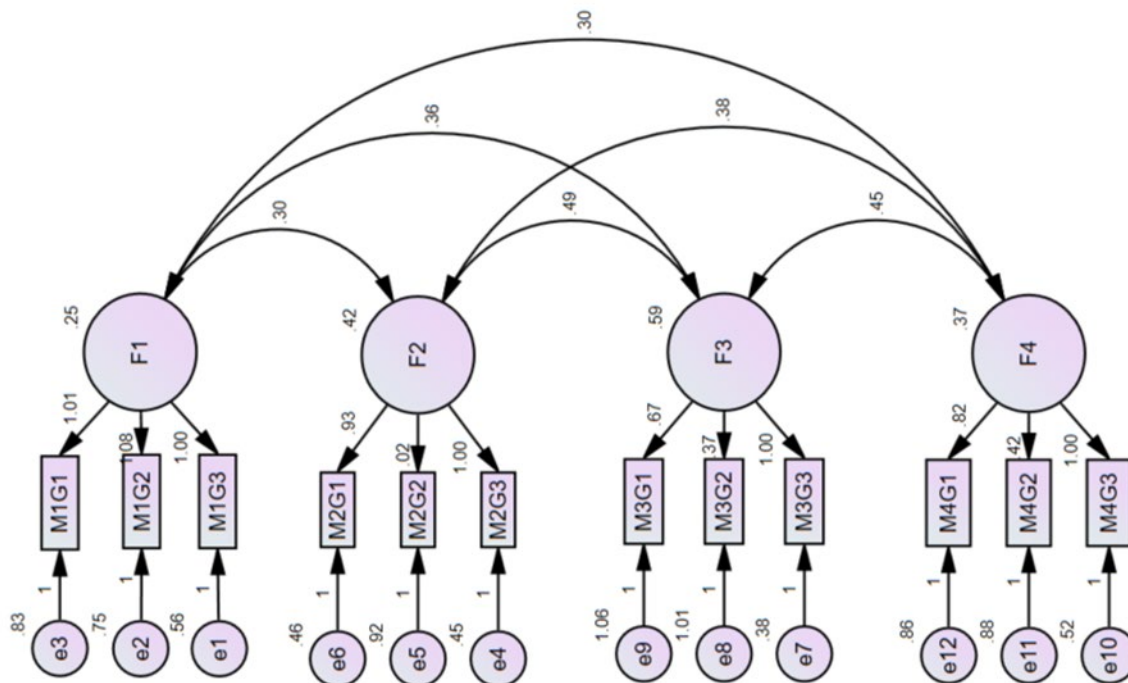
\* The SEM estimates the precision of the sample mean as an estimator of the population mean, the smaller value suggests that the sample mean is likely a more accurate estimate of the population mean (i.e., no outliers).



Multicollinearity arises when two or more test items exhibit high correlation with each other (e.g.,  $r^2 = 0.80$  to  $0.90$ ) (Kim, 2019). Multicollinearity is not binary but exists on a continuum. As the level of multicollinearity increases, so does the likelihood of encountering its disruptive effects. In this study, descriptive statistics of the pairwise correlation matrix ( $r$ ) of the scale items yield the following: Minimum ( $-0.31$ ), Mean ( $0.101$ ), Maximum ( $0.867$ ), indicating the absence of multicollinearity issues among the items of AV-SRP 4. Singularity problems arise when there is a flawless linear relationship among AV-SRP 4 items, causing instability in estimating factor loadings. This occurs when one or more items are accurately predicted by a linear combination of other items. To assess the presence of singularity, an examination of the descriptive statistics of the correlation matrix is conducted. In this case, since no items exhibit a perfect linear relationship, there are no singularity issues.

The CFA was executed using procedure described by Leone, Van der Zee, Oudenhoven, Perugini, & Ercolani (2005). The procedure involved grouping items of the same factor into three sets using an appropriate mathematical function tailored to the scale's nature (median was employed here). The objective was to achieve more stable parameter estimates within CFA models and minimize errors when calculating observed indicators (Bagozzi, 1993; Bentler, 1990). Analyzing all items in CFA leads to less precise outcomes due to measurement error and sample specificity (Leone et al., 2001). The obtained results are detailed below and illustrated in Figure 1.

**Figure 1:** CFA of the AV-SRP 4



F1 = interpersonal factor (IPM); F2 = affective factor (CA); F3 = lifestyle factor (ELS); F4 = antisocial factor (CT)



The Confirmatory Factor Analysis (CFA) results suggest good model fit, supporting the scale's validity. To compare this study's findings with other validation studies, we assessed goodness-of-fit indices used in Leone et al. (2005). As shown in Table 3, the proposed model demonstrates a good fit to the data, indicating strong evidence for construct validity.

**Table 3:** CFA Indices Values.

Category Name	Index's Name	Acceptance Level	Calculated Level
<i>Absolute fit</i> (assess overall theoretical model against observed data)	Chi-square Mean	$p \text{ value} > 0.05$	0.000
	The Root Mean Square Error of Approximation	RMSEA < 0.08	0.061
	Standardized Root Mean Square Residual	SRMR < 0.08	0.042
<i>Incremental fit</i> (used to evaluate how well a proposed model improves upon a more basic or null model)	Comparative Fit Index	CFI > 0.90	0.925
<i>Parsimonious fit</i> (is finding a balance between model fit and simplicity)	Chi-Square/ df	$(\chi^2/df) < 2.0$	0.792
The minimum sample size required for a given model to achieve statistical significance.	Hoelter's	critical N > 200	291

Overall: The table suggests the measurement model for the AV-SRP 4 scale has good fit, indicating it successfully captures the intended latent constructs with good validity. Next, the reliability of both the overall AV-SRP 4 and each of its sub-dimensions was evaluated. The following section will outline the specific results of the reliability assessments.

#### The Reliability of the AV-SRP 4

Reliability measures the degree to which the AV-SRP 4 yields consistent and precise outcomes across multiple administrations. Internal consistency reliability was evaluated using Cronbach's alpha ( $\alpha$ ), adhering to the widely acknowledged standard that a range of 0.6-0.7 indicates an acceptable level of reliability, while a value of 0.8 or higher indicates a very good level (Ursachi, Horodnic, & Zait, 2015).

To assess the internal consistency of the AV-SRP 4 and its sub-dimensions, we considered Cronbach's alpha values. Following Nunnally and Bernstein (1994), we interpreted the results as follows:  $\alpha \geq .70$  considered acceptable consistency,  $\alpha = .80-.90$  demonstrates good consistency, and  $\alpha \geq .90$  indicates excellent consistency.

The Guttman Split-Half Coefficient is another method used to assess the internal consistency reliability of an instrument in psychometrics. It involves dividing the instrument into two halves and comparing the responses between them. A Guttman Split-Half Coefficient of 0.70 or higher is typically considered acceptable for internal consistency reliability. While both Cronbach's alpha and the Guttman Split-Half Coefficient aim to evaluate the consistency of items within a measurement instrument measuring the same underlying construct, they differ in their calculation and evaluation of this consistency. Cronbach's alpha is often favored for its versatility and robustness in assessing internal consistency reliability. The internal consistency of the AV-SRP 4 is supported by Table 4, where both reliability measures surpassed the predefined thresholds. All individual sub-dimensions (IPM, CA, ELS) have acceptable Cronbach's alpha ( $\alpha$ ) values ( $> 0.70$ ), the CT sub-dimension has a good  $\alpha$  value ( $> 0.80$ ), and the entire AV-SRP 4 scale (Total) has an excellent  $\alpha$  value ( $> 0.85$ ). The Guttman Split-Half Coefficient values are generally lower than the Cronbach's  $\alpha$  values but follow a similar pattern: all sub-dimensions except CT have acceptable consistency, the CT sub-dimension still shows

relatively higher consistency, and the total scale maintains good consistency according to the Guttman coefficient.

**Table 4:** Cronbach's alpha ( $\alpha$ ) and The Guttman Split-Half Coefficient.

Factors	Number of Items	Cronbach's alpha ( $\alpha$ )	The Guttman Split-Half Coefficient
IPM	16	0.77	0.731
CA	16	0.733	0.714
ELS	16	0.714	0.703
CT	16	0.813	0.725
Total	64	0.871	0.759

We may conclude from the data in Table 4 that the AV-SRP 4 scale has good internal consistency, meaning that all its items fall inside each sub-dimension and that the scale measures the intended constructs consistently. Our study's results are consistent with those of previous international studies. For example, research conducted by Lilienfeld Meier and Patrick (2017) demonstrated that in a community sample, the SRP-4 displayed test reliability (ICC = 0.80) along, with good internal consistency (Cronbach's  $\alpha$  = 0.88). In another investigation, by Hart and Lilienfeld (2018) it was revealed that the SRP-4 exhibited a level of test reliability (ICC = 0.70-0.80) As well as a highly dependable score (Cronbach's  $\alpha$  = 0.80-0.90). Carneiro et al. (2018) Echeverria et al. (2016). Williams et al. (2015) have also reported similar findings in their research.

Several studies conducted to assess the reliability of SRP-4 highlight its validity and reliability as a tool, for evaluating traits; however, it's important to consider that the reliability of any measurement can vary depending on the population and circumstances in which it is utilized.

### Discussion Conclusion and Recommendations

The goal of this study was to evaluate the reliability and validity of the Arabic Version of the Self-Assessment Psychopathy Test (AV-SRP4). This modified version of the SRP-4 aims to measure four aspects of behavior. Given the research on the validation and consistency of AV-SRP4, existing literature materials infer that this adaptation investigation will significantly enrich the field. It is anticipated that this scale will prove useful for conducting studies on psychopathic personality, which is also known as antisocial personality disorder. Beyond assessing psychopathic traits, the scale holds promise for future research by enabling the development of models that explain the breakdown of psychopathic personality and inform interventions to reduce antisocial behavior in young people. Considering the significance of assessing antisocial behavior, which holds a pivotal role in terrorist operations and poses a threat to both local and international peace, the findings of this study will prove valuable in preventive, and therapeutic psychological counseling. Additionally, the AV-SRP 4 will stimulate further academic work in this field.

In order to evaluate psychopathy in non-forensic populations, the SRP 4 was created as a self-report equivalent of the Hare psychopathy checklist (PCL; Hare, 1985) and its revision (PCL; Hare, 1991, 2003). The Psychopathic Deviate scale from the Minnesota Multiphasic Personality Inventory (MMPI; Dahlstrom & Welsh, 1960 as cited in Hare, 1985) and the Socialization scale from the California Psychological Inventory (CPI; Gough, 1969) were two early measures of psychopathic personality that had weak associations with each other ( $r$  = 0.31 to 0.26) and the PCL ( $r$  = 0.32 to 0.27). Hare (1985) developed the initial versions of both the SRP and PCL. Hare et al., 2018 combined sixty elements of the second edition (SRP-II) of the SRP to improve it, considering the PCL-R's two-factor structure (Williams & Paulhus, 2004).

In order to overcome the shortcomings of the SAP-II, Williams, Paulhus, and Hare (2007) added multiple items that tapped into the four aspects of psychopathy and eliminated items that measured row anxiety. The end product was a 77-item measure known as the SRP-E. Support for a connected four-factor structure was discovered using exploratory and confirmatory factor analysis (Williams et al., 2007). The PCL-R and its derivatives' four-factor model is mirrored by the factors, which were given the names Interpersonal,

Manipulation, Callous Affect, Erratic Lifestyle, and Criminal Tendencies (Hare et al., 2018). With 16 items for each subscale, the 64-item SRP-III was further developed from the SRP-E. Furthermore, utilizing model-based measurement theory, a 29-item short form of the SRP-III was created, known as the SRP-SF (Paulhus et al., 2016).

The SRP-III full and short forms have strong internal consistency at the factor and facet levels in diverse samples (Paulhus et al., 2016), show overlap in predicting relevant psychopathy correlates (Gordts et al., 2017), and replicate the four-factor latent variable model of psychopathic personality based on PCL (Neumann et al., 2015).

The Self-Report Psychopathy Scale—fourth edition (SRP 4), a psychometrically similar refinement of the SRP-III with minor language modifications, was released in 2016 (Paulhus et al., 2016). It builds on the validation data of the SRP-III and the SRP-8F. In addition to scoring procedures and empirical support of the construct validity for both the full and short versions, the publication of the SRP 4 included a thorough manual that gives norms based on large community, university, and offender samples (Roy & Neumann, 2022).

The confirmatory factor analysis (CFA) revealed a four-factor structure consistent with the original scale. The fit indices demonstrated satisfactory results:  $\chi^2/p\text{-value} = 0.00$ , RMSEA = 0.061, SRMR = 0.042, CFI = 0.925,  $\chi^2/df = 0.792$ , and critical N = 291. These results indicate that the model you are evaluating has good fit indices.

Although criterion validity is crucial for establishing the validity of the SRP-4 instrument, the current study did not assess it due to time constraints. We recommend that future research address this aspect.

In this study, the Cronbach's alpha internal consistency coefficient for the AV-SRP 4 scale was calculated as  $\alpha = 0.871$ . The different factors demonstrated  $\alpha = 0.77$  for the Interpersonal Factor (IPM),  $\alpha = 0.733$  for the Callous-Affective Factor (CA),  $\alpha = 0.714$  for the Emotionless Lifestyle Factor (ELS), and  $\alpha = 0.813$  for the Coldhearted-Thrill-Seeking Factor (CT). Comparing these values with the internal consistency coefficient of the original SRP 4 scale, which ranges from 0.80 to 0.90, indicates strong internal consistency (Hart & Lilienfeld, 2018; Lilienfeld et al., 2017). Additionally, each factor typically exhibits Cronbach's alpha between 0.70 and 0.85, demonstrating good internal consistency within themselves (Neumann et al., 2016).

The discrepancy in Cronbach's alpha results from the original scale and the adapted scale may stem from cultural and linguistic differences (Hambleton & Li, 2005). However, since all Cronbach alpha values surpass the thresholds mentioned in the literature ( $\alpha = 0.70$ ), this instills confidence in users regarding the reliability of the AV-SRP 4 scale for practical application.

The AV-SRP 4's validity and reliability are supported by evidence, indicating that it can be used in Saudi Arabian culture as well as other similar cultures. As it turns out, the scale is useful and simple to use, score, and administer. The research findings lead to several recommendations. Convenient sampling was used in the study to choose participants.

The results' generalizability could be improved by future studies employing a larger sample size and random sampling technique. We may be able to learn more about the scale's psychometric qualities by applying it to a wider range of research and sample sizes. Future research is expected to reveal more elements and frameworks associated with the idea of cultural conflict. Given that studies of validity and reliability rely on measurements, it would be advantageous to investigate the psychometric qualities of the AV-SRP 4 in the future using information from more diverse and sizable sample groups. Finally, further research is needed to assess the construct validity, criterion validity, and reliability of the scale. Such studies will contribute to the broader understanding of the topic, especially as research explores various aspects of multicultural personality in partnerships.

Understanding the cultural context is crucial for accurately interpreting research findings related to the Arabic adaptation of the SRP-4. Cultural factors influence the results, revealing culturally specific aspects and determining the applicability of findings to other settings. This insight aids in developing theories and models

tailored to Arabic-speaking populations and supports the creation of culturally relevant interventions and policies.

Different cultures have varying influences, on the manifestation and interpretation of behaviors and characteristics and are more subdued in societies that value cohesion compared to those that emphasize individualism where they are more prominent. Cultural perspectives on morality and emotional display play a role, in detecting and handling psychopathy highlighting the importance of culturally aware evaluations and treatments.

Studying psychopathy can. Question cultural beliefs that are already in existence. Recognizing perspectives aids in dispelling overly simplistic ideas about psychopathy; however, if research results align with stereotypes, it's important to recognize the potential harmful impacts they may have. It's crucial to understand these influences in order to create measures for prevention and intervention.

Research results can help shape prevention and intervention programs that are tailored to cultures by identifying risk factors and improving early intervention efforts while also guiding policy development in the field. The understanding of nuances related to psychopathy enables researchers to develop programs that connect with the intended audience effectively by tackling stigma and minimizing tendencies.

The ethical considerations surrounding research, into psychopathy carry weighty importance since the outcomes could influence perceptions of health and impact the stigma associated with it as well as access to treatment services for those affected by it. Research professionals must carefully weigh the potential impacts their findings may have on both individuals and society at large by upholding ethical standards in participant care informed consent procedures and safeguarding data privacy. These actions not uphold principles but also pave the way, for beneficial societal shifts while safeguarding the wellbeing of study participants.

### Limitations

This study is limited by convenient sampling, the lack of criterion validity assessment, and cultural influences on psychometric properties. As a self-report measure, it is prone to social desirability bias, and its cross-sectional design prevents assessing trait stability. Ethical concerns also arise regarding its association with antisocial behavior and terrorism, which may reinforce stereotypes. Further validation in diverse Arabic-speaking populations and external comparisons with clinical samples are needed to enhance its reliability and applicability.

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**Data Availability:** Data is available upon request, from the authors.

**Ethics Approval and Consent to Participate:** The authors confirmed that the research was carried out in compliance with guidelines. Participants were provided with detailed consent documents. Opted to participate in the study. It is worth noting that there was no ethics panel, at the institutions where the data was gathered.

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