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Evaluating self-reported psychopathy and associations with personality traits outside the WERID countries: evidence from two Arabic speaking Middle Eastern countries

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ABSTRACT

The prevalence, manifestation and assessment of psychopathy might be influenced by culture. However, the vast majority of research on psychopathy has been carried out in a few Western, Educated, Industrialized, Rich and Democratic (WEIRD) countries. In contrast, there is limited knowledge in the Middle Eastern Arabic speaking countries for psychopathy. A large sample of under-graduate university students ($N = 850$) from two Arab countries (Egypt and Kuwait) administered the original version of the Levenson Self-Report Psychopathy Scale (LSRP) along with the NEO-Five Factor Inventory (NEO-FFI). The LSRP is better organized using a three-factor structure (Egocentrism, Callousness, and Antisocial) rather than its original two-factor model (primary and secondary psychopathy) and the reliabilities of *all* factors were found to be acceptable to high. In addition, all factors correlated negatively with agreeableness, conscientiousness, and extraversion but positively with neuroticism. These results provide initial evidence for cross-cultural similarity of psychopathy construct.

Introduction

Psychopathy is a constellation of a range of "dark" personality traits (Paulhus & Williams, 2002). According to Hare's conceptualisation (e.g., Hare & Neumann, 2008), psychopathy is classified into several dimensions including interpersonal (e.g., grandiose sense of self-worth and pathological deception), affective (lack of remorse or guilt and failure to accept responsibility for actions), lifestyle (e.g., the lack of realistic long-term goals and impulsivity), and antisocial (poor behavioural controls and juvenile delinquency). Psychopathy has been extensively investigated in several fields of psychological and forensic sciences (e.g., for an extensive review, see Patrick, 2018). For example, psychopathy was found to be associated with many emotional (Brook et al., 2013), personality (Lynam et al., 2018), clinical (Latzman et al., 2019), forensic (Kiehl & Sinnott-Armstrong, 2013), cognitive (Baliousis

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et al., 2019), neuro-physiological (Clark & Salekin, 2019), socio-cultural (Rubio et al., 2014), and moral (Efferson & Glenn, 2018) factors.

Although psychopathy appears in all countries with a somewhat generalisability of core features (McCuish et al., 2018; Seara-Cardoso et al., 2020; Shou et al., 2021), recent evidence indicates that culture might influences the prevalence, manifestation and assessment of psychopathy (e.g., for a review, see Fanti et al., 2018). Importantly, however, the vast majority of research on psychopathy has been carried out in a few Western, Educated, Industrialized, Rich and Democratic (WEIRD; Henrich et al., 2010) countries, especially the USA (for a review, see Patrick, 2018). On a stark contrast, there is limited knowledge in the Middle Eastern Arabic speaking countries for anti-social personality disorder generally (e.g., see Megreya, 2013; 2015; Megreya et al., 2015) and psychopathy specifically (Issa et al., 2017; Latzman et al., 2015). Accordingly, in order to examine psychopathy construct in the Arab culture, the present study is sought to examine the psychometric properties of one of the most commonly used measures of psychopathy in WERID countries and the associations between psychopathy and personality traits among a large sample of undergraduate university students in two Arabic speaking Middle Eastern countries (Egypt and Kuwait).

The Levenson Self-Report Psychopathy Scale (LSRP; Levenson et al., 1995) is a brief self-report measure of psychopathy consisting of 26 items, which measure primary psychopathy (16 items) versus secondary psychopathy (10 items). Primary psychopathy refers to an inclination to lie, lack of remorse, callousness, and manipulativeness, whereas secondary psychopathy includes impulsivity, intolerance of frustration, quick-temperedness, and lack of long-term goals (Levenson et al., 1995). Levenson et al. (1995) reported that this two-factor structure of the LSRP was supported by principal component analysis, with moderate inter-correlation between the two factors ($r = .40$) and generally acceptable reliability rates (αs = .82 and .63 for primary psychopathy and secondary psychopathy, respectively). Although the two-factor structure of the original version of the LSRP was replicated in some studies (Brinkley et al., 2001; Lynam et al., 1999), it was under question (e.g., for a review see Sellbom et al., 2018). For example, Brinkley et al. (2008) reported a poor fit for its two-factor model. Instead, Brinkley et al. (2008) found that the structure of the LSRP is best organised on a three-factor oblique solution using a modified reduced version of the LSRP consisting of 19 items. These factors include Egocentricity (10 items), Antisocial (five items), and Callousness (five items). Egocentricity refers to an egocentric, manipulative, and Machiavellian interpersonal style. Antisocial trait is defined as an angry, impulsive, and antisocial approach to life. Callousness is a cold-hearted and greedy approach to life. Cronbach's alphas for these three factors were .82, .69, and .63, respectively (Brinkley et al., 2008). Subsequent studies have confirmed this three-factor solution for the 19-item version of the LSRP (Salekin et al., 2014; Sellbom, 2011; Somma et al., 2014). Importantly, however, internal reliability rates were generally low for Callous and Antisocial subscales (Brinkley et al., 2008; Salekin et al., 2014). In order to remedy this issue, Christian and Sellbom (2016) have added 16 new items to the original 26 items so that Egocentric, Callous, and Antisocial are now consisting of 11, 12, 13 items, respectively. Christian and Sellbom (2016) found that this expended 36-item version was associated with significant improvements in construct validity compared to the 19-item version, but internal reliabilities of Callous and Antisocial subscales were still generally low.

A very large body of studies have examined the associations between psychopathy and personality traits (e.g., for reviews see Decuyper et al., 2009; Lilienfeld et al., 2015; Lynam et al., 2018; Lynam & Derefinko, 2006; O'Boyle et al., 2015). In the classic three-dominion personality framework, Eysenck and Eysenck (1978) primary psychopathy to be associated with psychoticism and neuroticism whereas secondary psychopathy to be associated with neuroticism and extraversion. Meta-analysis studies that examined the Five-factor Model (FFM) profile of psychopathy in Western countries (mainly the USA) have reported a generally consistent pattern of FFM descriptions of psychopathy. For example, O'Boyle et al. (2015) reported that psychopathy is characterised by (i) a very low level of agreeableness (mean $r = -.53$), (ii) a moderate low level of conscientiousness (mean $r = -.39$), (iii) very small increments in neuroticism, extraversion and openness to experience (mean rs ranged from .05 to .06). A meta-analysis of the correlations between the Psychopathy Checklist-Revised (PCL-R) and FFM personality traits reported that psychopathy was associated with maladaptive (low levels of agreeableness and conscientiousness) and adaptive (high extraversion, low neuroticism, and high openness to experience) personality traits (Lilienfeld et al., 2015). Therefore, Miller and Lynam (2003, 2015) suggested that an FFM personality profile for psychopathy construct includes (i) low levels of agreeableness and conscientiousness, (ii) heightened extraversion, and (iii) a combination of low and high neuroticism (low levels of anxiety, depression, vulnerability to stress, and self-consciousness; but high levels of angry hostility and impulsiveness).

Importantly, however, relatively little work investigated the associations between the LSRP and the FFM personality traits (for reviews see Lynam et al., 2018; Sellbom et al., 2018), and the results were somewhat inconsistent with the suggested FFM profile of psychopathy construct. For example, Lynam et al. (1999) found that primary and secondary psychopathy negatively correlated with extraversion, agreeableness, and conscientiousness, whereas only secondary psychopathy demonstrated a positive correlation with neuroticism. No correlation was found with openness to experience (Lynam et al., 1999). In addition, Ross et al. (2004) reported that primary psychopathy was characterised by low levels of agreeableness, while secondary psychopathy was marked by high scores on neuroticism and low levels of conscientiousness and agreeableness. Furthermore, Miller et al. (2008) indicated that primary psychopathy was related to an antagonistic interpersonal style (low agreeableness, high narcissistic personality disorder and ratings of prototypical psychopathy), whereas secondary psychopathy was related to negative emotionality (neuroticism), disinhibition (low conscientiousness), and a broad array of personality disorder symptoms. Fewer studies have examined the associations between the LSRP three-factor model and FFM personality traits. Using a sample of university students in China, Shou et al. (2017) found that the three LSRP factors correlated negatively with agreeableness, while none of them correlated with extraversion. In addition, Shou et al. (2017) found that Antisocial, but not Egocentricity and Callousness, was associated with low levels of conscientiousness and openness to experience and a high level of neuroticism.

The cultural context of Arab countries greatly differs from that of Western countries. For example, on the individualism-collectivism continuum (Hofstede & Bond, 1984), Arab countries such as Egypt and Kuwait are considered collectivistic societies, whereas Western countries are considered individualistic societies (Hofstede Insights, 2021). Therefore, living in a collectivistic society may lead to variations in psychopathy. For example,

previous studies reported lower reliability rates for the factors of the Psychopathic Personality Inventory-Revised in Egypt, Kingdom of Saudi Arabia (Latzman et al., 2015) and Lebanon (Issa et al., 2017) as compared with the reliability rates in the USA. Therefore, the purpose of the present study is twofold. First, we examine the psychometric properties of an Arabic translation of the original (26-item) and reduced (19-item) versions of the LSRP using a large sample of young adults from two Arab speaking countries (Egypt and Kuwait). This validation will have important implications on psychopathy construct in the Arab culture. The second aim was to investigate the associations between self-reported psychopathy and the FFM personality traits. Notably, the FFM framework reflects the structure of human adult personality and reflects the most important individual differences in personality traits, which are ubiquitous across different cultures (e.g., see McCrae & Allik, 2002; Saucier et al., 2014). Based on the suggested FFM profile of the psychopathy construct (Miller & Lynam, 2003, 2015), we expect that the LSRP factors would show strong negative correlations with Agreeableness and Conscientiousness and week positive correlations with Extraversion and Neuroticism.

Method

Participants

A total of 850 participants from Egypt ($n = 400$; $M_{age} = 19.3 \pm .7$; 200 females and 200 males) and Kuwait (n = 450; $M_{age} = 18.7 \pm 2.2$; 250 females and 200 males) volunteered to participate in this study. None of the participants had a history of any psychiatric disorders as they self-reported. Data were collected using identical procedures across the two countries. The questionnaires were administered in groups in the students' classes using the original instructions of the questionnaires. All procedures were approved by a university's institutional review board, which required a written informed consent form from each participant.

Measures

(1) *Levenson Self-Report Psychopathy Scale* (LSRP; Levenson et al., 1995). The LSRP is a 26-item self-report measure of primary (16 items) and secondary (10 items) psychopathy using a four-point Likert-type scale (*strongly disagree*, disagree somewhat, agree somewhat, disagree strongly). However, subsequent studies confirmed that a three-factor model (Egocentricity, Antisocial, and Callousness) is the best fit for a reduced (19-item) version of the LSRP (Brinkley et al., 2008; Salekin et al., 2014; Sellbom, 2011). The LSRP items included for those two- or three-factor models are presented in Tables 2 and 3.

(2) *NEO-Five Factor Inventory* (NEO-FFI; Costa & McCrae, 1992). The NEO-FFI is a 60-item self-report measure of big five personality traits (neuroticism, extraversion, openness to experiences, agreeableness, and conscientiousness) using a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree), with 12 items for each trait. The NEO-FFI has been translated into many different languages (for a review see, McCrae & Allik, 2002), including Arabic (Latzman et al., 2015). Although the psychometric properties of the Arabic version of the NEO-FFI were generally

good, the reliability rate for the openness to experiences was too low in two samples of university students in Egypt and Saudi Arabia (Latzman et al., 2015). Subsequent studies replicated the low rate of internal consistency of this FFM factor in four Arab countries (Egypt, Kuwait, Saudi Arabia, and Qatar; Al-Attiyah et al., 2017; Megreya et al., 2016). Accordingly, openness to experience was removed from the Arabic version of the NEO-FFI. Notably, some validation studies have consistently reported low reliability for the openness to experience as measured by other personality measures such as the HEXACO-60 Inventory in Arabic countries (Alrajhi et al., 2020).

Translation procedures

The LSRP was translated from English into Arabic to be used in the current study following the same procedures by which the NEO-FFI was translated (see Latzman et al., 2015). The translation was completed using the committee translation method followed by the back-translation method (Hambleton, 2005; van de Vijver & Leung, 1997). For the committee translation method, two independent translations were obtained for the LSRP (one from the first author of this study and the other from a bilingual research assistant who was unfamiliar with the questionnaire). These versions were compiled into a single version by comparing translations with each other and with the original English version. For the back-translation method, the compiled version of the Arabic translation was back-translated into English by a bilingual scholar in English Department who was unfamiliar with the original LSRP. The back-translated items were evaluated by a native English researcher, and comments were addressed in the final Arabic version of the LSRP.

Statistical analyses

In a first step, data from Egyptian and Kuwaiti samples were analysed separately in order to examine country-related differences in the factorial structure of the LSRP and associations with personality traits. However, the results were generally consistent across these two Arabic countries. Accordingly, for reasons of economy, data were collapsed together. First-order confirmatory factor analyses (*CFA*) was performed to evaluate the two- and three-factor models of the Arabic translation of the LSRP. Because of the categorical nature of the items used as indicators for each of the factors, weighted least squares means and variance adjusted (*WLSMV*) estimator was used in Mplus (Muthén & Muthén, 1998-2012). For evaluating the model fits, we used the common fit indices, including Comparative Fit Index (*CFI*; >.90), Tucker Lewis Index (>.90), Root mean square error of approximation (*RMSEA*; ≤.05), and Standardized Root Mean Square Residual (*SRMR*; ≤.05) (Schermelleh-Engel et al., 2003). Concerning convergent validity, the associations between the LSRP and the NEO-FFI were examined using Pearson's correlation coefficients. The reliabilities were examined using Omega and Cronbach's alpha, and descriptive statistics (means and standard deviations) are provided.

Results

Table 1 shows model fit statistics for the two- and three-factor models of the LSRP that indicate a better fit for the three-factor model. For example, the *CFI* and *SRMR* indicate a good fit for the three-factor model (.945 and .048, respectively), whereas they indicate a generally weak fit for the two-factor model (.889 and .068; respectively). Similarly, the *TLI* and *RMSEA* are in favour of the three-factor model.

Tables 2 and 3 show the standardised factor loadings for the two- and three-factor models on their corresponding items. Moderate to high loadings were observed for the two-factor model (with means of .61 for primary psychopathy and .70 for secondary psychopathy) and the three-factor model (with means of .63 for Egocentricity, .74 for Callousness, and .74 for Antisocial).

Table 4 illustrates descriptive statistics and internal consistency. Both omega rates and Cronbach's alpha indicate higher reliabilities for the two-factor model than the three-factor model. Table 5 shows the correlations between the LSRP and NEO-FFI factors in the two countries. To summarise, all of the LSRP factors correlated negatively with Agreeableness, Conscientiousness, and Extraversion and positively with Neuroticism.

Discussion

Using large samples of young adults from two Arab-speaking Middle Eastern countries (Egypt and Kuwait), this study found that the LSRP is best-organised using a three-factor structure (Egocentricity, Callousness, and Antisocial) rather than its original two-factor model (Primary vs. Secondary Psychopathy), with acceptable to high reliability rates for all factors. In addition, all of the LSRP factors correlated negatively with agreeableness, conscientiousness, and extraversion, but positively with neuroticism.

Interestingly, the results of the present study found that the factorial structure of the LSRP and the associations between psychopathy and personality traits are highly consistent in Egypt and Kuwait in spite of the significant differences between these two Arabic countries in social economic status (SES). Consistently, previous studies conducted in Western countries reported no relationship between psychopathy and SES (Lynam et al., 2007; Lynam et al., 2008), supporting the assumption that psychopathy is genetic, with a small societal effect (e.g., see Bezdjian et al., 2011).

One of such societal effects might relate to the collectivism–individualism dimension (Hofstede & Bond, 1984). A recent study by Shou et al. (2021) found that collectivism negatively correlates with the maladaptive aspects of psychopathy, whereas individualism positively correlate with the behavioural aspect of psychopathy. However, these associations were consistently found for both Western and East Asian samples, suggesting that psychopathy construct in relation to such cultural values is universal (Shou et al.,

Table 1. Model fit statistics for the two- and three-factor models of the LSRP.

Models	df	CFI	TLI	SRMR	RMSEA
Two-factor model	.294	.889	.878	.068	.086
Three-factor model	145	.953	.945	.048	.065

CFI: Comparative Fit Index; TLI: Tucker Lewis index; SRMR: Standardized Root Mean Square Residual; RMSEA: Root mean square error of approximation.

Table 2. The standardised factor loadings for the two-factor model of the LSRP.

	λ	SE	P	95% CI	
Primary Psychopathy					
1. Success is based on survival of the fittest; I am not concerned about the losers.	.641	.021	<.001	.600	.682
2. For me, what's right is whatever I can get away with.	.596	.024	<.001	.549	.643
3. In today's world, I feel justified in doing anything I can get away with to succeed.	.590	.025	<.001	.541	.639
4. My main purpose in life is getting as many goodies as I can.	.669	.020	<.001	.630	.708
5. Making a lot of money is my most important goal.	.567	.026	<.001	.516	.618
6. I let others worry about higher values; my main concern is with the bottom line.	.623	.023	<.001	.578	.668
7. People who are stupid enough to get ripped off usually deserve it.	.571	.024	<.001	.524	.618
8. Looking out for myself is my top priority.	.657	.021	<.001	.616	.698
9. I tell other people what they want to hear so that they will do what I want them to do.	.636	.021	<.001	.595	.677
10. I would be upset if my success came at someone else's expense.	.618	.023	<.001	.573	.663
11. I often admire a really clever scam.	.645	.021	<.001	.604	.686
12. I make a point of trying not to hurt others in pursuit of my goals.	.505	.026	<.001	.454	.556
13. I enjoy manipulating other people's feelings.	.613	.027	<.001	.560	.666
14. I feel bad if my words or actions cause someone else to feel emotional pain.	.565	.024	<.001	.518	.612
15. Even if I were trying very hard to sell something, I wouldn't lie about it.	.646	.022	<.001	.603	.689
16. Cheating is not justified because it is unfair to others.	.619	.021	<.001	.578	.660
Secondary Psychopathy					
1. I find myself in the same kinds of trouble, time after time.	.755	.018	<.001	.720	.790
2. I am often bored.	.742	.019	<.001	.705	.779
3. I find that I am able to pursue one goal for a long time.	.640	.027	<.001	.587	.693
4. I don't plan anything very far in advance.	.708	.021	<.001	.667	.749
5. I quickly lose interest in tasks I start.	.717	.021	<.001	.676	.758
6. Most of my problems are due to the fact that other people just don't understand me.	.710	.021	<.001	.669	.751
7. Before I do anything, I carefully consider the possible consequences.	.578	.028	<.001	.523	.633
8. I have been in a lot of shouting matches with other people.	.703	.021	<.001	.662	.744
9. When I get frustrated, I often "let off steam" by blowing my top.	.701	.021	<.001	.660	.742
10. Love is overrated.	.729	.020	<.001	.690	.768

SE: standard error; CI: confidence interval.

Table 3. The standardised factor loadings for the three-factor model of the LSRP.

	λ	SE	P	95% CI	
Egocentricity					
1. Success is based on survival of the fittest; I am not concerned about the losers.	.664	.021	<.001	.623	.705
2. For me, what's right is whatever I can get away with.	.606	.025	<.001	.557	.655
3. In today's world, I feel justified in doing anything I can get away with to succeed.	.605	.025	<.001	.556	.654
4. My main purpose in life is getting as many goodies as I can.	.665	.022	<.001	.622	.708
5. Making a lot of money is my most important goal.	.596	.026	<.001	.545	.647
6. I let others worry about higher values; my main concern is with the bottom line.	.640	.024	<.001	.593	.687
7. People who are stupid enough to get ripped off usually deserve it.	.601	.025	<.001	.552	.650
8. I tell other people what they want to hear so that they will do what I want them to do.	.662	.022	<.001	.619	.705
9. I often admire a really clever scam.	.662	.022	<.001	.619	.705
10. I enjoy manipulating other people's feelings.	.603	.029	<.001	.546	.660
Callousness					
1. I make a point of trying not to hurt others in pursuit of my goals.	.631	.028	<.001	.576	.686
2. I feel bad if my words or actions cause someone else to feel emotional pain.	.709	.024	<.001	.662	.756
3. Even if I were trying very hard to sell something, I wouldn't lie about it.	.831	.021	<.001	.790	.872
4. Cheating is not justified because it is unfair to others.	.776	.023	<.001	.731	.821
Antisocial					
1. I find myself in the same kinds of trouble, time after time.	.793	.020	<.001	.754	.832
2. I am often bored.	.751	.021	<.001	.710	.792
3. I quickly lose interest in tasks I start.	.725	.023	<.001	.680	.770
4. I have been in a lot of shouting matches with other people.	.722	.023	<.001	.677	.767
5. When I get frustrated, I often "let off steam" by blowing my top.	.721	.023	<.001	.676	.766

SE: standard error; CI: confidence interval.

Table 4. Descriptive statistics and internal consistency.

	M	SD	Omega	α
LSRP 2F model				
Primary Psychopathy	33.7	7.7	.89	.87
Secondary Psychopathy	21.8	5.5	.90	.87
LSRP 3F model				
Egocentricity	21.4	5.1	.88	.83
Callousness	7.3	2.5	.84	.76
Antisocial	11.2	3.1	.86	.82
NEO-FFI				
Neuroticism	25.9	7.1	.82	.81
Extraversion	31.3	5.7	.73	.71
Agreeableness	26.7	6.9	.77	.79
Conscientiousness	34.7	7.1	.87	.85

Table 5. The correlations between the LSRP and NEO-FFI factors.

	Primary Psychopathy	Secondary Psychopathy	Egocentricity	Callousness	Antisocial
Neuroticism	.455**	.654**	.461**	.247**	.635**
Extraversion	-.302**	-.361**	-.232**	-.345**	-.277**
Agreeableness	-.639**	-.629**	-.595**	-.470**	-.593**
Conscientiousness	-.368**	-.491**	-.284**	-.457**	-.365**

**p < .01.

2021). The results of the present study provide support to this suggestion. In the Arab cultural contexts, which are considered collectivistic (Hofstede Insights, 2021), the present results reported that three-factor model of the 19-item version of the LSRP is more appropriate than the two-factor solution of the 26-item version. This finding replicates the results of Shou et al's (2017) study that was conducted in a different collectivistic country (China). Notably, the three-factor model for the 19-item LSRP was previously confirmed in some individualistic countries such as the USA (Salekin et al., 2014; Sellbom, 2011) and Italy (Somma et al., 2014). In addition, using the expanded 36-item LSRP, this three-factor model was also confirmed in Australia (Christian & Sellbom, 2016) and French-Canadian territories (Maheux-Caron et al., 2020). Accordingly, Egocentricity, Callousness, and Antisocial might represent the psychopathy construct in both individualistic *and* collectivistic countries.

Consistent with the FFM profile of psychopathy reported in Western countries (Lilienfeld et al., 2015; O'Boyle et al., 2015), the results of the present study reported that all of the LSRP factors correlated negatively with agreeableness, extraversion, and conscientiousness. Nevertheless, all of the LSRP factors using its reduced (19-item) and original (26-item) versions correlated positively with neuroticism. Although the FFM profile of psychopathy involves a very small increment of neuroticism (O'Boyle et al., 2015) or even a low level of neuroticism (Lilienfeld et al., 2015), previous studies utilised the 26-item version of the LSRP reported that secondary psychopathy, but not primary psychopathy, was associated with high neuroticism (Lynam et al., 1999; Ross et al., 2004). This may be consistent with the emotional characteristics of secondary psychopathy such as impulsivity, intolerance of frustration, quick-temperedness, and lack of long-term goals (Levenson et al., 1995).

Intuitively, the positive correlations between the LSRP factors and neuroticism in the present study might relate to the heightened levels of negative affect in Arab countries. A study by Megreya et al. (2018) found that people in four Arab countries (Egypt, Kuwait,

Saudi Arabia, and Qatar) significantly experienced higher levels of negative emotions compared to Americans. Supporting this intuitive explanation, some previous studies reported that psychopathy construct was associated negative emotions such as anxiety and depression (Shou et al., 2017), stressful life events (Eisenbarth et al., 2019), negative affectivity (Hicks & Patrick, 2006), a deficit in empathy (van Dongen, 2020), and an impairment of inhibitory control under negative emotional contexts (Fournier et al., 2020). Therefore, future research needs to examine the influences of stress on the associations between psychopathy and Neuroticism.

Theories suggest a positive correlation between psychopathy and extraversion (e.g., for a review, see Lynam et al., 2018). However, previous studies examined the associations between the LSRP factors and extraversion reported highly inconsistent results. For example, Lynam et al. (1999) found that primary and secondary psychopathy negatively correlated with extraversion as measured by the Big Five Inventory (John & Srivastava, 1999). In addition, Lynam et al. (2011) reported that the LSRP total negatively correlated with two facets of extraversion (Warmth and Positive Emotions). Consistently, the present study showed negative correlations between the LSRP factors and extraversion, as measured by the NEO-FFI, in two Arab countries. However, Shou et al. (2017) showed that none of the LSRP factors correlated with extraversion, as measured by the International Personality Item Pool–Short Form (Donnellan et al., 2006), in China. In addition, although Ross et al. (2004) found no correlation between primary and secondary psychopathy and the total score of extraversion, as measured by The NEO Five-Factor Inventory, in Canada, these two types of psychopathy correlated positively with two facets of extraversion (Excitement-Seeking and Assertiveness) and negatively with two facets (positive emotions and warmth). Therefore, the associations between the LSRP and extraversion across different countries do need more investigations.

In addition, the contradictory findings regarding the association between psychopathy and extroversion might due to the different conceptualisations of extraversion across different personality measures. Indeed, the conceptualisations of extraversion greatly varies across different personality measures (e.g., for a review see Wilt & Revelle, 2009). The core feature of extraversion in the FFM model is the disposition to engage in social behaviour (Costa & McCrae, 1992). Therefore, extraversion in the NEO Five-Factor Inventory consists of six facets: warmth, gregariousness, assertiveness, activity, excitement seeking, and positive emotion (Costa & McCrae, 1992). In addition, extraversion in the Big Five Inventory involves six similar facets: gregariousness, assertiveness, activity, excitement-seeking, positive emotions, and warmth (John & Srivastava, 1999). Consistent with the results of the present study, primary and secondary psychopathy correlated negatively with extraversion as measured by the Big Five Inventory (Lynam et al., 1999) and by two facets (positive emotions and warmth) of the NEO Five-Factor Inventory (Ross et al., 2004).

Examining the magnitudes of correlations between LSRP factors and personality traits further address such cross-cultural differences. Consistent with previous studies predominately conducted in the USA (e.g., for a review, see Lynam et al., 2018), the correlation between LSRP factors and agreeableness were the strongest in magnitudes, whereas their correlations with extraversion were the weakest (see Table 5). This might provide preliminary support for the cross-cultural generalisability of the FFM profile of psychopathy. Importantly, however, the magnitudes of some correlations were inconsistent with

those reported in previous studies. For example, neuroticism correlated at a higher magnitude than conscientiousness (.63/−.36) with Antisocial subscale, whereas previous studies reported a reverse pattern of results. Specifically, the facets of conscientiousness correlated at higher magnitudes with the LSRP than the facets of neuroticism (mean rs = -.37/.18; Lynam et al., 2018). As psychopathy has been understudied in Arabic-speaking populations, it would be difficult to explain these findings. Therefore, future studies in Arab countries would need to replicate these findings and to explore the FFM profile of psychopathy related to some specific cultural factors.

Latzman et al. (2015) previously examined the cross-cultural differences between samples of American and Egyptian university students in the associations between psychopathy as measured by the PPI-R Scale and the FFM personality traits. For example, they found that coldheartedness was associated with lower levels of agreeableness and neuroticism in the American sample, whereas coldheartedness was associated lower scores of agreeableness and Extraversion in the Egyptian sample. Therefore, along with Latzman et al. (2015) study, the present study suggests that the FFM profile of psychopathy might vary across different cultures. More studies are required to examine this suggestion.

The present study is not without limitations. For example, although the study was conducted using a large sample size across two Arab countries ($N = 850$), all participants were undergraduate university students who might not be representative of community-dwelling adults who potentially might exhibit a broader distribution of psychopathy. Second, the age of Egyptian participants was significantly higher than the age of Kuwaiti counterparts, albeit the means were generally similar to each other (19.3 vs. 18.7 years). Third, due to problems in internal consistency in the Arabic version of the NEO-FFI (e.g., see Latzman et al., 2015), one of the big personality factors (openness to experience) was removed. Finally, a shorter version of the Big-Five Personality Inventory (the NEO-FFI) was utilised. Rather, future research might need to further elaborate the present results using the longer inventory (the Revised NEO Personality Inventory), which involves several facets within the big-five personality traits. Despite these limitations, using powerful analyses, the present study provides initial evidence for somewhat cross-cultural similarity of psychopathy construct in Arab collectivistic culture.

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Disclosure statement

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