

Network Analysis of Dark Triad Traits and Emotional Intelligence in Peruvian Adults

Cristian Ramos-Vera¹, Dennis Calle¹, Yaquelin E Calizaya-Milla², Jacksaint Saintila³ 

¹Research Area, Universidad Cesar Vallejo (UCV), Lima, Perú; ²Faculty of Health Sciences, Universidad Peruana Unión, Lima, Perú; ³School of Medicine, Universidad Señor de Sipán, Chiclayo, Perú

Correspondence: Jacksaint Saintila, School of Medicine, Universidad Señor de Sipán, Carretera a Pimentel, Km 5, Chiclayo, 14001, Perú, Email jacksaintsaintila@gmail.com

Background: The study of Dark Triad traits and emotional variables has been conducted in numerous regions; however, there is a lack of research focusing on Latin American samples and considering variables such as sex and age. Incorporating these variables could enhance our understanding of underlying aversive patterns.

Purpose: This study aimed to analyze the associations between Dark Triad traits and emotional intelligence in Peruvian adults.

Methods: Data were collected in 2021 and 272 adults (M=31.8 years, 68% female) participated through online surveys via non-probability purposive sampling. Dirty Dozen and Trait Meta-Mood Scales were used. Two partial correlation network models were applied between the study variables with and without controlling for gender and age. Bridge-expected influence and predictability analysis were calculated to find interconnected traits and higher connections, respectively.

Results: Subclinical psychopathy primarily showed negative associations with emotional clarity ($r=-0.17$), followed by emotional attention ($r=-0.08$) and emotional repair in networks with and without age and gender variables. Machiavellianism consistently displayed a negative association with emotional repair ($r=-0.13$) in both estimated networks. Conversely, subclinical narcissism exhibited a positive association solely with emotional attention ($r=0.15$). Furthermore, younger age was linked to higher Machiavellianism ($r=-0.23$), females showed higher emotional attention ($r=0.11$), and narcissism connected intrapersonal emotional domains with Dark Traits (bridge expected influence >1.25) while Machiavellianism exhibited greater predictability ($r^2>0.45$) due to reinforcement by other Dark Traits.

Conclusion: This study revealed negative connections between the Dark Triad and emotional intelligence traits, except for narcissism, which was positively associated with emotional attention and functioned as a “bridge” between all traits. However, relying solely on this single positive emotional aspect of narcissism may not be adequate to characterize it as possessing fully adaptive emotional traits. Findings suggest that detailed aspects of emotional intelligence and sociodemographic factors can provide valuable insights into the complex nature of aversive patterns and their broader impact on society.

Keywords: Machiavellianism, narcissism, subclinical psychopathy, emotional intelligence, network analysis

Introduction

Peru is a country known for its rich and diverse cultural heritage, natural resources, and strong value on interpersonal relationships shared by family, friends, and communities.¹ However, it has experienced a serious political and social crisis in the last decades, marked by authoritarianism, corruption, violence, instability, and inequality.² These factors may have contributed to create a context that fosters various adaptive and aversive ways of expressing affective and behavioral patterns among certain segments of the population such as Lima, which is seen as a center for progress and development.¹ Further studies are needed to understand the underlying emotional and behavioral patterns in recent Peruvian contexts, aiming to gain insight into their emergence and persistence.

For example, political instability caused by high presidential turnover and corruption resulted in distrust towards institutions such as the police and representatives of the legislature.³ This may have increased the appeal of entitled leaders who promise to solve the country’s problems with charisma and arrogance, but who may also dominate those they

perceive as inferior or different. On the other hand, socioeconomic inequality and exclusion may have driven some people to adopt Machiavellian strategies to survive or succeed in a competitive and unfair environment. As a result, they may feel justified in manipulating or deceiving others, and may even form social connections with family or friends for their own benefit.⁴ Similarly, cultural values such as a high degree of hierarchy or power distance⁵ may have contributed to the development of callous behaviors in executives and politicians who seek to acquire more power and financial resources, without regard for the harm they may cause to others.⁶ These traits have also been observed in everyday contexts, such as independent merchants and health-related students exhibiting antisocial tendencies and distrust toward others.^{7,8}

Many of these patterns of negative behaviors have been conceptualized in a theoretical model called the Dark Triad of personality, which has been studied for several decades due to its common antagonistic social characteristics.⁹ Individuals with these traits are characterized by a profile of manipulative, dominant, and dishonest intentionality in social relationships, as well as exhibiting behavior lacking in empathy.¹⁰ Machiavellianism involves a pattern of manipulation tactics in social interactions, low levels of empathy, a focus on obtaining long-term rewards or power, and indifference to moral norms.¹¹ High Machiavellianism individuals maintain strategic relationships to achieve what they desire.¹¹ Primary or subclinical psychopathy is characterized by tendencies of superficial charm and instrumental use of social relationships, insensitivity or lack of remorse for harming others, cynicism, and impulsivity.¹² This trait is estimated to have a high prevalence not only in the prison population but in various contexts of everyday life (eg, educational, work, among others).¹³ On the other hand, individuals with subclinical narcissism traits represent a profile of grandiosity perception in their abilities, need for admiration, success, and entitlement to special treatment.^{10,14} Given these characteristics, they may exhibit a greater desire for social contact to establish relationships in terms of dominance and a constant need for attention and affection to validate their beliefs of high personal esteem.¹⁰

To understand these interpersonal dynamics, it has been argued that many of these personality patterns may be related to certain emotional traits. When examining the case of Peru, it is important to consider how emotional expression and development can be shaped by a range of sociocultural factors. This country is known to be a society that highly avoids uncertainty.⁵ This means that people may feel threatened by situations that are unknown, such as the likelihood of being a victim of crime or dealing with heavy traffic. In this way, this can make it more challenging for individuals to handle negative emotions such as fear, anxiety, anger, or sadness. As a result, some individuals may seek support from others or even behave in self-centered ways. Also they could have difficulty to manage their emotions and acting in aggressive ways in familiar or sentimental relationships in order to cope with these emotions.^{15,16} Additionally, this society has more inequality in power distance, meaning that people may harbor feelings of anger and frustration towards their political or economic opponents. This can lead some individuals to use these emotions to justify their own protests or unethical behaviors in order to “get ahead”.^{2,17}

To reduce these expressions, emotional intelligence is postulated as one of the most relevant indicators that improves social relationships, psychological well-being, coping with stress, and the treatment of affective disorders.¹⁸ This concept is defined as a set of emotional skills at the intrapersonal and interpersonal level; that is, the use of emotions towards a goal of well-being with oneself and others.¹⁹ In this framework, this type of intelligence is comprised of emotional attention, emotional clarity, and emotion repair that can promote adequate personal and social functioning. The attentional component contemplates the degree to which a person is able to assess and perceive the intensity of his or her own emotional states.²⁰ Clarity of emotions is directed to the understanding, interpretation, and degree of effort to pinpoint the reasons for emotional complexity.²¹ Finally, emotion repair is one of the aspects of self-regulation in this context, which involves the degree of belief of being able to prolong positive emotions, or to change negative states to positive ones.²²

In this sense, previous studies have tried to understand the connection between these behavioral and emotional traits in different countries. Meta-analysis studies²³ have consistently found that individuals with high levels of Machiavellianism have lower commitment to assessing and managing their own emotions, and may have difficulty distinguishing between them.²⁴ On the other hand, individuals with high scores in psychopathy have been associated with lower abilities to perceive emotional states in themselves and others, resulting in lower resources for regulation and impulsive behavior to achieve material benefits, sexual practices, among others.¹² However, individuals with narcissistic

tendencies apparently develop positive emotional skills, sufficient to coexist satisfactorily with others due to their more social nature.^{23,25}

Nonetheless, another key point is that both domains need to be studied considering variables as gender and age. Gender differences in the Dark Triad have been found in multiple studies, with men displaying higher levels of psychopathy than women, and small gender differences observed for narcissism and Machiavellianism.¹⁰ However, when controlling for shared variance, only psychopathy showed significant gender differences within the Dark Triad.¹⁰ In addition, Michels and Schulze²³ found a moderating effect of gender on the relationship between psychopathy and trait emotional intelligence, being significantly stronger in men. Age was also found to moderate the relationship between Machiavellianism and emotional intelligence, with a stronger association observed in younger individuals compared to older individuals.²³

At a methodological level, an aspect to highlight is that traits of emotional intelligence have been studied in recent decades but their connection with other domains of personality has not been jointly explained coherently. For example, according to taxonomic models of personality, there are lower-level traits (unidimensional) that include facets of affective or behavioral nature that can interact with each other, although they do not have a defined organization, and can be represented in non-hierarchical structures such as network systems.^{26,27} Furthermore, according to the Integrated Model of Affect-Related Individual Differences,²⁸ emotional and behavioral variables can be associated with each other as elements of a microsystem with similar motivations that promote the explanation of emotional regulation. In this way, it is necessary to implement new perspectives to better understand these relationships.

Network analysis in psychology is a relatively recent methodology that uses nodes (circles) to represent psychological variables and edges to represent the estimated relationships between them. These correlations can be positive or negative and have a value that represents their magnitude.²⁹ From this perspective, the strongest connections between different items or domains generate clusters that can be interpreted as psychological variables with a common nature, which emerge from the joint activation of various elements of the network. This type of analysis allows us to understand personality as a complex system of interactions between cognitive, behavioral, affective, and other components.³⁰ Moreover, unlike other methods, this approach allows the identification of the most influential components in the network through the evaluation of centrality indices, such as the bridge expected influence (BEI). This index analyzes the elements that facilitate communication between different domains and that are important for maintaining a stable network of connections at a global level, so it is possible to interpret them as important indicators or “bridges” that positively or negatively favor the maintenance of other psychological indicators.³¹ This network perspective has already been used in previous research to understand how personality variables, including aversive social traits that extend beyond classical models (eg, Big Five), mutually reinforce each other.^{32,33}

Therefore, the first objective of this study was to examine the connections between emotional intelligence and the Dark Triad in Peruvian adults without considering variables such as age and sex. The second objective was to include the control of these variables in a new network, given their relevance found in previous studies. Finally, the third objective was to analyze the most central interconnection traits (bridge expected influence) between Dark Triad domains and trait emotional intelligence in both networks.

Materials and Methods

Participants

The study sample consisted of 272 Peruvian adults ($M_{age} = 31.8$; $SD = 10.91$) who were selected through non-probabilistic purposive sampling, i.e., accessible voluntary participants who were selected according to specific characteristics by researchers. Regarding the inclusion criteria, we included Peruvian participants over 18 years old, who belonged to districts of northern Lima, and who did not present physical or sensory impediments to answering the questionnaires. An a priori size calculator was used to calculate the minimum sample size required for psychometric network models, given the number of variables used, the minimum expected effect size of 0.20, a probability level of 0.05, and statistical power of 0.95.³⁴

The distribution of males and females was 87 (32%) and 185 (68%), respectively. In terms of educational level, the participants reported having primary or secondary education (14.3%), higher technical education (21.7%), and higher

university education (64%). Regarding current activities, 5.9% were neither studying nor working, 24.3% were only studying, 42.6% were only working, and 27.2% were doing both.

Instruments

Trait Meta Mood Scale (TMMS-24).²² This is the Spanish version of the scale of Salovey et al.²⁰ This questionnaire measures perceived emotional or trait intelligence based on the ability model by means of 24 Likert-type scale items with five response options (from 1= “I do not agree at all” to 5= “I totally agree”). It presents three dimensions: emotional attention (eg “I am usually very conscious of what I feel”), emotional clarity (e.g, “I often become aware of my feelings in different situations”), and emotional repair (e.g, “I try to have positive thoughts even when I feel bad”). In the original and adapted scale, the reliability of the component scores is adequate.²² In the present study, the internal consistency by omega coefficient had values of 0.86, 0.87, and 0.82 for attention, clarity, and repair, respectively. Regarding the internal structure, acceptable comparative fit indices (CFI): 0.96, Tucker-Lewis index (TLI): 0.97, root mean square error of approximation (RMSEA): 0.09, and root mean square error (RMR): 0.08 were observed.

*Dirty Dozen Dark Triad (DDDT)*¹⁴ in the Peruvian version of Lonzooy et al.³⁵ This scale has demonstrated stability in measurement in more than 56 countries (Ragoza et al, 2021). It measures aversive personality traits such as Machiavellianism (e.g, “I have used deceit or lied to get my way”), subclinical psychopathy (e.g, “I tend to be callous or insensitive”), and subclinical narcissism (e.g, “I tend to want others to pay attention to me”). It presents 12 items and five Likert-type response options (from 1= “Never” to 5= “Almost always”). Scores are interpreted for each domain. The reliability using the omega coefficient in this study was 0.82 for Machiavellianism, 0.78 for subclinical psychopathy, and 0.83 for subclinical narcissism. The internal structure showed values of CFI: 0.96, TLI: 0.95, RMSEA, 0.09, and SRMR: 0.06.

Procedures

Due to restrictions in the pandemic context, the survey application was conducted using the Google Form and distributed through social networks (WhatsApp and Facebook). In this survey, participants were provided with prior notification that they would undergo assessment related to personality and emotional traits for research purposes. Additionally, the confidentiality and ethical treatment of the data, and informed consent was obtained. The collection of information was anonymous and voluntary, without any remuneration, and was carried out in June 2021. The procedures used for the development of this research were carried out in accordance with the requirements of the 1964 Declaration of Helsinki and article 27 of the Professional Code of Ethics of the Peruvian College of Psychologists. The research protocol was approved by the Research Ethics Committee of the Universidad Peruana Unión (approval number: 2022-CEUPeU-0026).

Data Analysis

Analyses were performed with R software version 4.1.3³⁶ using the statistical packages qgraph, bootnet, mgm, psych, and networktools.^{37–39}

No missing data were recorded in the database obtained. First, descriptive statistics, normality tests, and reliability were determined. Normality results suggested using nonparametric statistics.

Then, two types of networks were estimated: one exclusively with psychological variables; and another, where influential demographic variables such as age and gender were added, as pointed out by the Dark Triad literature²³ and another previous network study.³⁸ For this purpose, the Gaussian graphical model (GGM), which represents a network based on regularized partial correlations (r , Spearman), was used to model the interaction of emotional and personality variables. Additionally, the mgm estimator was used, which is particularly suitable for nominal and ordinal variables. Each domain is symbolized by circles called nodes, which are connected by lines called “edges”, which can be understood as conditional dependency relationships between elements after controlling other associations in the network.⁴⁰ To estimate the GGM, the absolute minimum selection and shrinkage operator or graphical LASSO method, which represents the dispersion of the nodes and describes the data with parsimony, was used.^{37,41}

In addition, measures of bridge expected influence were reported, which reflected the importance of the nodes in the network based on the number of positive and/or negative connections.^{41,42} On the other hand, the predictability index

provides evidence of which nodes are predicted by others in a network model, given the variance explained (R^2).^{37,43} To strengthen the results, nonparametric tests of edge estimation accuracy were performed based on 1500 samples (bootstrapping). Finally, higher and significant centrality and edge values in the network were analyzed.³⁷ Both bridge-expected^{31,38} influence and predictability analysis^{32,33,38} have been utilized in previous network studies to provide more informative results.

Results

Table 1 shows the descriptive statistics of the participants' responses according to the measures used in the two estimated networks. The mean score ranged from 7.82 (Machiavellianism) to 30.94 (emotional repair), while the highest standard deviation was found in the emotional attention dimension and the lowest in Machiavellianism. The domain that presented the highest indexes of expected influence in the first and second networks was subclinical narcissism, with indexes of 0.96 and 0.69, respectively. Regarding predictability, expressed as the coefficient of variance explained (R^2), it was higher in the Machiavellianism domain in both networks (45% and 50%), followed by emotional repair (39% and 38%), and narcissism (38% and 39%).

Figure 1 shows the first network structure without control of demographic variables. Partial correlations between subclinical psychopathy with emotional clarity ($r=-0.17$, $p<0.05$) and emotional attention ($r=-0.07$, $p<0.05$) are highlighted. Machiavellianism was associated with emotional repair ($r=-0.13$; $p<0.05$) and clarity ($r=-0.04$; $p<0.05$); while subclinical narcissism had a positive relationship with emotional attention ($r=0.14$; $p<0.05$). Likewise, positive associations are reported between Dark Triad traits ($r=0.21$ to 0.42 ; $p<0.05$) and between trait emotional intelligence dimensions ($r=0.12$ to 0.39 ; $p<0.05$).

On the other hand, the second network is observed with control for variables such as age and gender. Age was associated with different variables such as Machiavellianism, negatively ($r=-0.23$; $p<0.01$) and positively with emotional clarity ($r=0.21$; $p<0.05$), as well as with gender ($r=-0.08$; $p<0.05$). According to codes (male=1; female=2), being female was mainly associated with high emotional attention scores ($r=0.11$; $p<0.05$) and being male with more Machiavellian indicators ($r=-0.04$; $p<0.05$). On the other hand, subclinical psychopathy had negative links with emotional clarity ($r=-0.16$; $p<0.05$), emotional attention ($r=-0.08$; $p<0.05$), and emotional repair ($r=-0.03$; $p<0.05$). Machiavellianism maintained a negative association with emotional repair ($r=-0.13$; $p<0.05$) and clarity ($r=-0.03$; $p<0.05$). Subclinical narcissism also preserved a positive relationship with emotional attention ($r=0.15$, $p<0.05$), as did positive associations between Dark Triad traits (between $r=0.22$ to 0.41 , $p<0.05$) and between dimensions of trait emotional intelligence ($r=0.14$ to 0.38).

The stability of all associations in the network was also graphically reported (Figure 2A–B) using nonparametric indices. This was an important step to demonstrate the accuracy of the estimations in both networks. Next, we utilized additional network analysis measures, specifically edge centrality differences, to assess significant relationships within the networks (Figure 3A–B). These measures indicated that the positive relationships between Machiavellianism and subclinical narcissism were significantly stronger compared to other associations within the network. Similarly, the

Table 1 Descriptive Analyses, Partial Network Correlations, and Bridge-Expected Influence

Variable	M	SD	G ₁	G ₂	B.E.I. ^(a)	R ² ₁	B.E.I. ^(b)	R ² ₂
EA	28.82	5.40	-0.46	0.58	1.02	0.16	1.02	0.20
EC	30.0	4.93	-0.49	0.78	-0.64	0.35	0.72	0.38
ER	30.94	4.40	-0.70	2.16	-0.38	0.39	-0.45	0.38
MAC	7.82	2.95	0.66	0.17	-0.40	0.45	-1.56	0.50
SP	8.72	2.79	0.24	-0.12	-1.04	0.34	-0.94	0.40
SN	10.46	3.69	0.22	-0.30	1.45	0.38	1.25	0.39

Abbreviations: M, Mean; SD, standard deviation; B.E.I.^(a), expected influence of network 1; B.E.I.^(b), expected influence of network 2; R²₁, explained variance of network 1; R²₂, explained variance of network 2; EA, emotional attention; EC, emotional clarity; ER, emotional repair; MAC, Machiavellianism; SP, subclinical psychopathy; SN, subclinical narcissism.

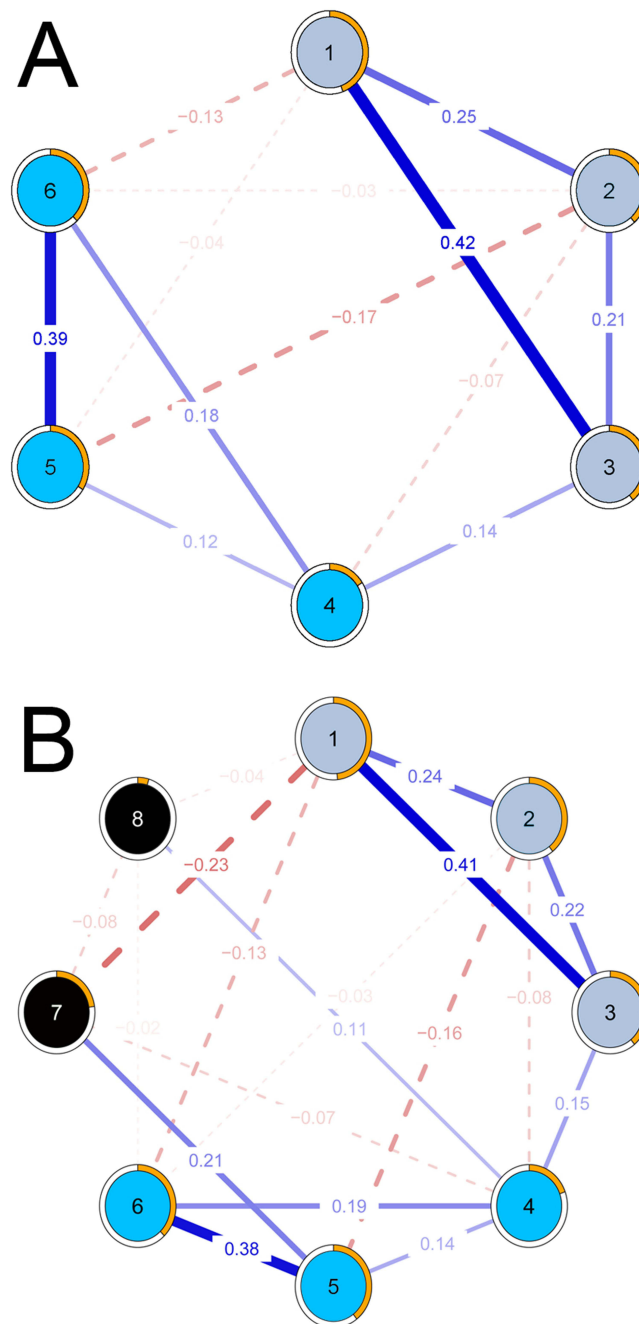


Figure 1 Partial network associations according to dimensions and demographic variables.

Notes: (A). Network 1 without considering age and gender variables. (B). Network 2 with age and gender variables. Blue lines represent positive relationships and dotted red lines are negative associations. 1: Machiavellianism, 2: Subclinical psychopathy, 3: Subclinical narcissism, 4: Emotional attention, 5: Emotional clarity, 6: Emotional repair, 7: Age, 8: Gender.

negative association between age and Machiavellianism was found to be significant in comparison to other associations in the network.

Finally, while the associations revealed connection patterns between variables, centrality network analysis (bridge-expected influence, Figure 4A–B) was conducted to identify the relative importance of nodes that indirectly connect communities of Dark Triad traits and trait emotional intelligence. This analysis showed that subclinical narcissism and emotional attention consistently exhibited higher values of bridge-expected influence (z-scores greater than 1) in both networks, regardless of whether age and gender were included or not.

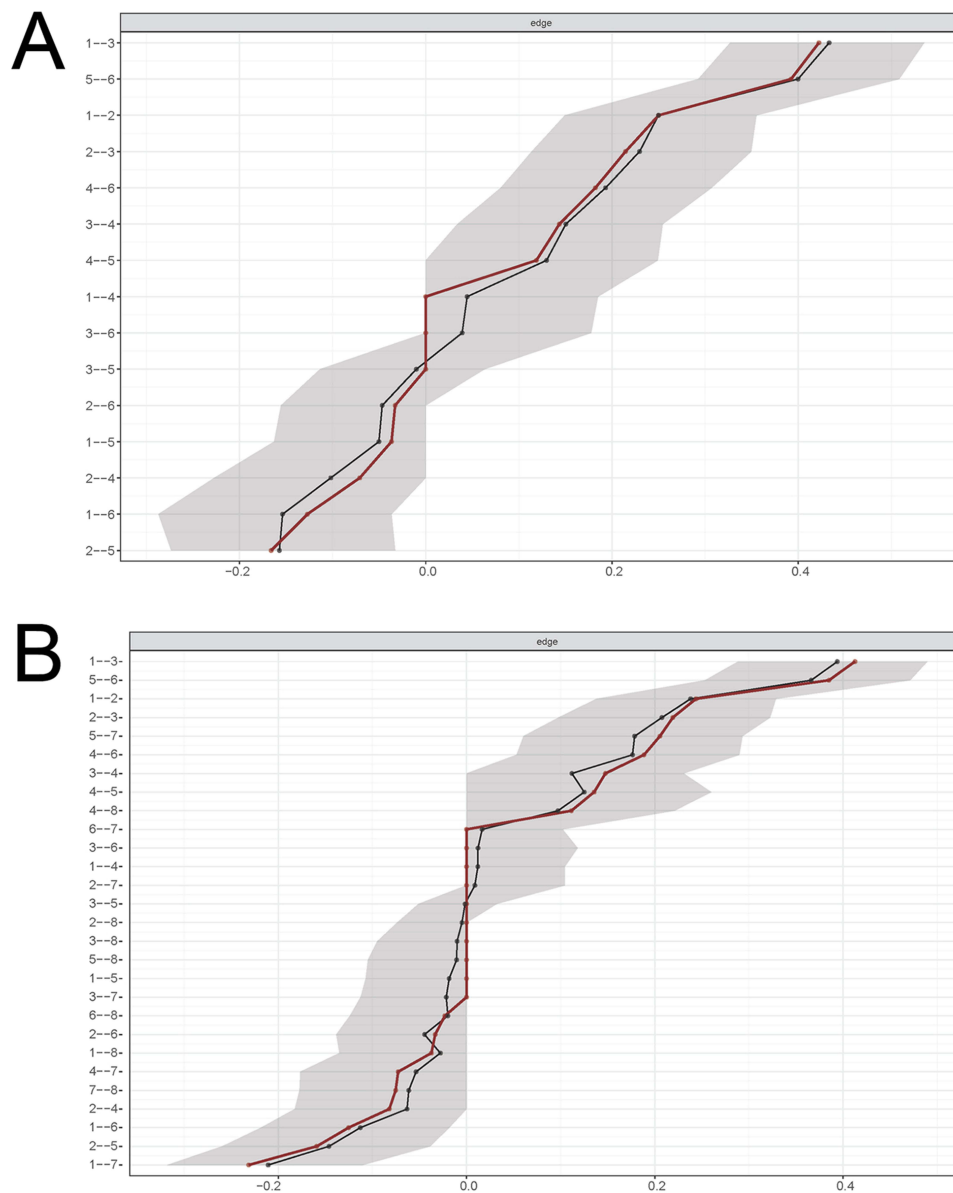


Figure 2 Accuracy of the estimation of edge weights (ratios) of the networks.

Notes: (A). Accuracy of edge weight estimation of Network 1. (B). Accuracy of edge weight estimation from Grid 2. 1: Machiavellianism, 2: subclinical psychopathy, 3: subclinical narcissism, 4: emotional attentiveness, 5: emotional clarity, 6: emotional repair, 7: age, 8: gender.

All results were obtained through network analysis, which, compared to other methods, represents partial correlations between variables of similar nature, controlling for the influence of different variables in the system,²⁹ and identifying which ones are more reinforced, which is commonly seen in personality research.³⁰ It also allowed us to identify the most relevant variables in the network, specifically those that support the connection between clusters,³¹ as in this case, the Dark Triad and trait emotional intelligence.

Discussion

People with Dark Triad traits are characterized by an opportunistic lifestyle that causes harm to others, and they mainly emerge in environments where there is a certain degree of instability and unpredictability.⁴⁴ For example, in Peru, amidst political and economic uncertainty and a high perceived level of citizen insecurity, many people resort to strategies of deception and violation of social norms that they justify in order to survive in an environment considered unfair and

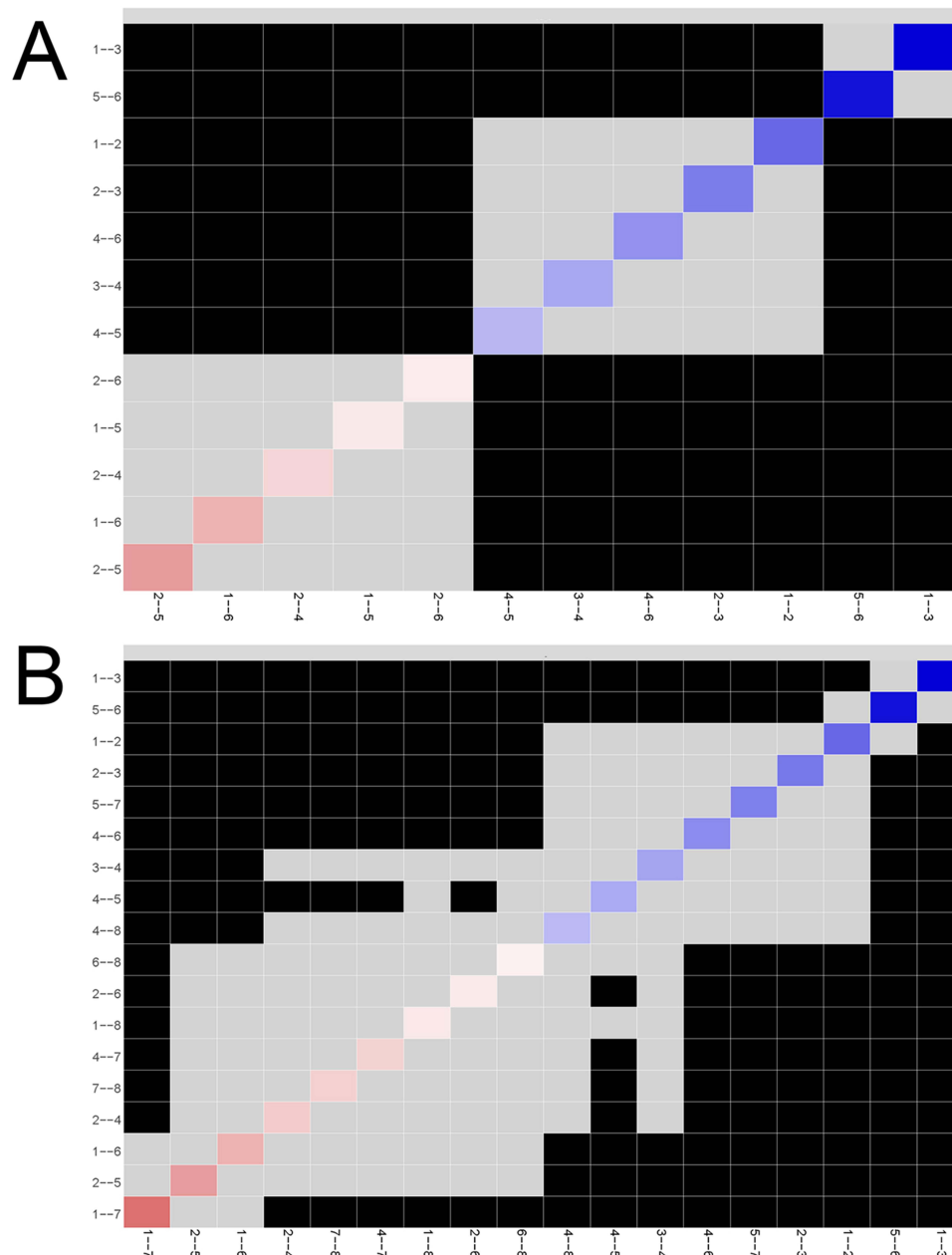


Figure 3 Edge centrality differences (relationships).

Notes: (A). Differences in centrality of network 1 edges without age and gender variables. (B). Differences in centrality of network 2 edges with age and gender variables. 1: Machiavellianism, 2: subclinical psychopathy, 3: subclinical narcissism, 4: emotional attention, 5: emotional clarity, 6: emotional repair, 7: age, 8: gender.

competitive. This can foster motivations to ignore the norms and rights of others, as the survival demands of an individual or groups with common interests (families, friends, institutions, among others) prevail over the rules that have been established for the entire society.^{4,45} Also, high competitiveness in this context can lead to insensitive and arrogant behavior from unqualified executives and politicians seeking power and financial gain, affecting job seekers. Additionally, social and political issues can make it hard to manage negative emotions, resulting in selfish and aggressive behavior. Power inequality can cause frustration and unethical actions. In situations such as family or couple dynamics, control and violence can be used to get what they want.^{6,16} Similar behavior has been seen during the recent pandemic, such as seeking methods to bypass social regulations or get vaccines.^{46,47} These actions reflect less empathic

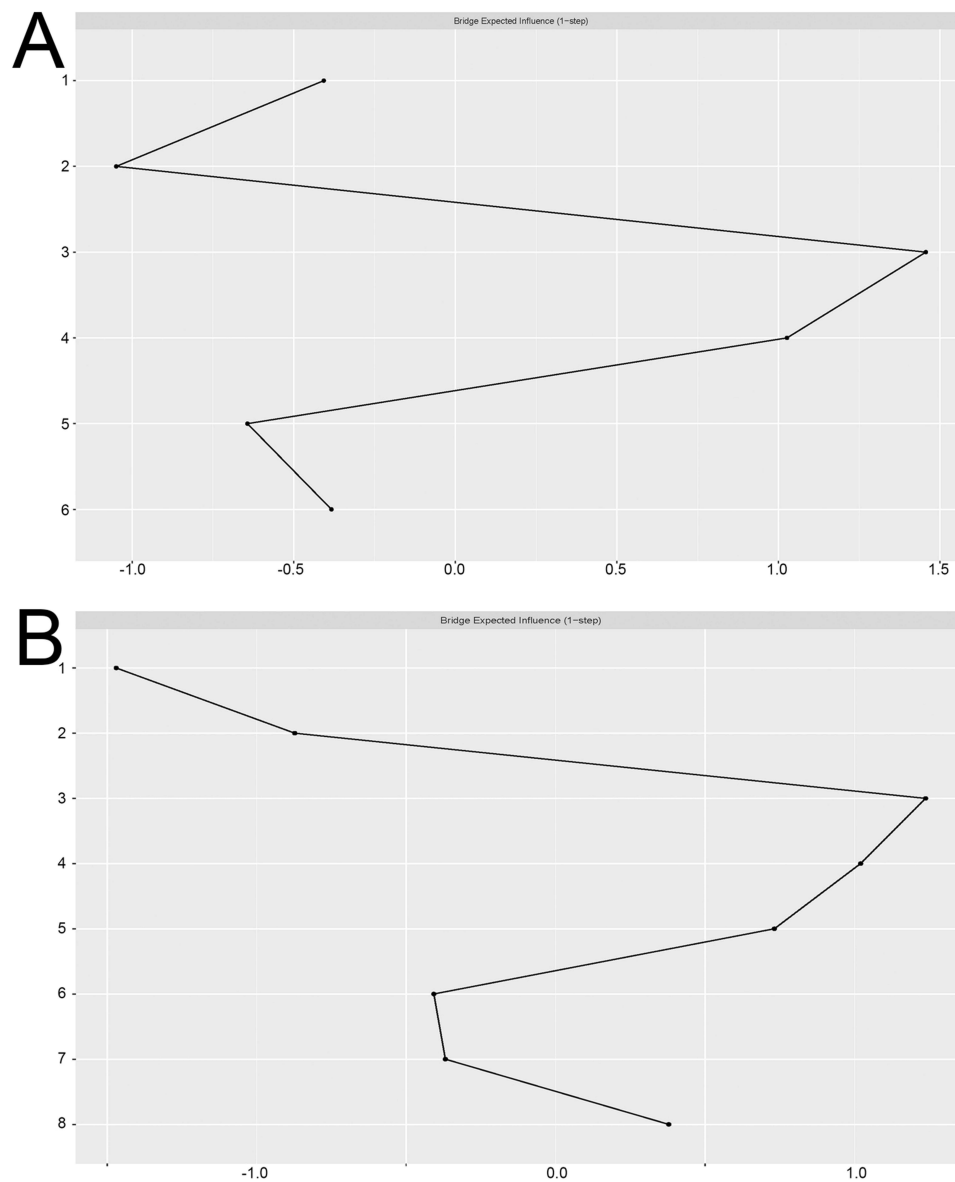


Figure 4 Plots of the differences in expected bridging influence in both networks.

Notes: (A). Expected influence values bridging network 1 without age and gender variables. (B). Expected influence values bridging network 2 with age and gender variables. 1: Machiavellianism, 2: subclinical psychopathy, 3: subclinical narcissism, 4: emotional attentiveness, 5: emotional clarity, 6: emotional repair, 7: age, 8: gender.

consideration and difficulty in managing emotions at the expense of personal benefits, which needs to be addressed and prevented.⁴⁸

Personality traits are not independent from each other, but rather they are interconnected and influence each other even in complex ways and sociocultural contexts.³⁰ With network analysis, we examine them and observe that personality traits do not depend on a latent variable that produces them, but rather traits are related to each other and form groups with similar traits that benefit themselves without caring about others (Dark Triad) or how they evaluate their emotional processes (trait emotional intelligence). Similarly, as we discussed later, we found the most important or central traits that activate and connect other traits in the global network, which helps to understand ways to prevent certain behaviors.

In the present study, the first aim was to use network analysis to examine the relationships between Dark Triad traits and trait emotional intelligence in Peruvian adults, without considering variables such as sex or age. Initially, we found that the traits of Machiavellianism, psychopathy, and subclinical narcissism were positively reinforced with each other

according to previous studies Jordan et al,^{49–52} The associations between Machiavellianism and narcissism were statistically higher in this cluster. Machiavellianism and narcissism reinforce traits of manipulation, deceit, lack of empathy, and self-serving goals. However, they differ in motivations since Machiavellians engage in strategic planning in social interactions, while narcissists lie for attention in social situations.^{10,53} The mutual connections were also positive in the dimensions of attention, clarity, and emotional repair, as in previous research with adult participants.^{22,54} In this grouping, the strongest connection was between emotional attention and clarity, which is in line with the idea that the former serves as an emotional foundation for later distinguishing emotional experiences.²⁰

Among the main findings of the first estimated network, it stands out that subclinical psychopathy was negatively associated with emotional attention and clarity traits. This finding is in line with other studies where individuals with high levels of psychopathy reported lower emotional abilities in non-clinical populations⁵⁵ and in individuals in prison with higher psychopathic traits.^{12,56,57} Therefore, it is likely that those with higher levels of psychopathic traits exhibit less remorse when harming or manipulating others, as they tend to have less awareness and control of their affective states, making them prone to impulsive acts^{12,52} without considering the consequences of their actions and how they affect relationships with their environment.⁵⁸ This predisposition leads them to seek fast and opportunistic financial benefits, also exploiting others and engaging in dishonest and fraudulent behaviors. These tendencies have far-reaching interpersonal consequences, eroding trust, undermining institutions, and perpetuating systemic corruption.¹³

Machiavellianism in the first network was negatively related to emotional comprehension and repair. This reinforces the evidence of previous studies where individuals with a Machiavellian profile are characterized by higher levels of negative affect, difficulty expressing and recognizing emotions (alexithymia), and reduced understanding of interpersonal affective experiences.^{59,60} These people may have limitations in understanding their own emotions and regulating them, as well as less interest in the emotions of others. Therefore, they may interact in a cold and calculating way to take advantage of others, and they may even use subtle tactics based on their own negative emotional states, which affect others psychologically.^{11,61,62} Furthermore, in positions of financial need or with a strong motivation for power they may have difficulties in regulating their behavior, potentially leading to acts of corruption.⁶³

Narcissism was only positively associated with the emotional attention dimension in both networks. This may indicate that individuals with grandiosity and entitlement tendencies are more interested in their emotional states and sensations, allowing them to interact successfully with others as opposed to individuals with high psychopathy or Machiavellianism scores.¹⁰ This result is congruent with previous work such as that of Ruiz et al⁶⁴ who found positive relationships between narcissistic personality style and emotional attention in Spanish adults. Likewise, another more recent study by Cheshure et al²⁵ reported that narcissism was negatively related to a greater deficit in recognizing one's own emotions. In addition, a meta-analysis that included adults revealed that emotional perception and regulation were negatively associated with psychopathy and Machiavellianism, but positively with narcissism.²³ In a broader Peruvian context, these narcissistic traits may align with the allure of entitled leaders who captivate public attention through charisma and arrogance, promising to solve different societal issues.⁶

The second objective of the present study was to estimate another network model controlling age and sex. The purpose was to determine whether the inclusion of such demographic variables could generate differences in the partial associations, controlling for the shared variance of all the domains. Thus, the differences in the associative systems of independent conditional interactions can be described.^{38,65}

In this second network, we found that all associations were as stable and similar as in the first network, with the exception that Machiavellianism and narcissism had important connections with age and sex, respectively. For example, the relationship between Machiavellianism and emotional clarity was reduced to zero, and both variables were linked to age, positively and negatively, respectively. This difference suggests that this relationship may be conditioned by the age of the participants. A meta-analysis conducted by Michels & Schulze²³ showed that age had a moderating effect on the association between Machiavellianism and trait emotional intelligence, but did not specify specific emotional components as in the present study. In the Peruvian context, this finding is consistent with others where young individuals report manipulative behaviors due to lower emotional self-control with their partners.⁶⁶ Regarding narcissism, an additional finding in the second network was the association of higher emotional attention in females. One hypothesis for this

finding may be that inequality in Peru⁵ may drive this group to be more aware and expressive of their emotions in seeking attention to their rights.

Finally, the third objective was to identify the most important interconnection traits in the network using the bridge expected influence index to understand through which traits dark behaviors and intrapersonal emotional variables are interconnected. Our findings indicated that the narcissistic trait consistently interconnected these domains both in the first network, which did not include age and sex variables, and in the second network with these variables. This finding is coherent since narcissism shares traits with emotional attention due to heightened self-focus and self-awareness, and with the Dark Triad due to traits like manipulation and self-centeredness.²⁵ It is worth noting that narcissism was related only to the emotional attention component, but being interconnected in the network, it is possible that it only relates to other emotional aspects if reinforced by other dark personality traits such as Machiavellianism and psychopathy. People with grandiose narcissistic tendencies appear to be more sensitive to positive emotions and express their emotions more to initiate positive interactions, which could explain why narcissism is considered one of the most adaptive and socially tolerated traits.^{10,67} However, if these individuals do not see their social validation needs satisfied or feel attacked, they may also exhibit behaviors that reveal their true selfish intentions and lower emotional regulation (eg, aggression).⁶⁸

This can be applied to the Peruvian context, a Latin American country where open emotional expression is encouraged,⁶⁹ which may lead to the acceptance of narcissistic traits. However, there are individuals with selfish and antisocial tendencies who in the workplace may be prone to harass or physically and psychologically aggress against colleagues and subordinates if they do not get what they want.⁷⁰ These characteristics are also relevant in cases of family violence, as it has been found that the profile of some Peruvian aggressors combines various subclinical personality traits characterized by frequent use of physical and psychological coercion when they perceive conflictive reactions in their family environment.⁶⁶

From an interpretive perspective, our findings point to the relevance of considering network centrality indices in order to identify which specific traits are key to reinforcing the negative aspects of dark personality and which traits act as central bridges to other emotional domains. These details may be overlooked by other statistical methods and are therefore essential in preventing the development of problematic behaviors that could be relevant to study in similar contexts in the future. Research challenges in the Peruvian population include studying personality and its connection to social phenomena like interpersonal relationships, violence, and emotional insight within a cultural framework.¹⁵ This can help identify protective or risk factors related to personality and inform the development of interventions and public policies to enhance well-being and mental health.

Limitations and Future Directions

One of the main limitations is that the findings of the study are not generalizable to the entire population, given the type of sampling and the number of participants. Similarly, it is not intended to attribute causal relationships of the variables using self-reporting instruments. On the other hand, reliability could be improved in future research, particularly with the psychopathy dimension for greater robustness in explaining associations with this trait. This study's strengths include evaluating individuals from the general population using a relatively new methodology, which is important for studying aversive and intrapersonal emotional personality traits in a dynamic manner. By doing so, we can obtain results to better understand these underlying emotional traits and how they affect people's lives.

Future studies should explore the relationships between Dark Triad traits and emotional domains, taking into account important variables such as sex and age as potential moderators. Additionally, including variables like empathy, moral disengagement or cognitive distortions in research can enhance our understanding of the underlying mechanisms connecting these traits.⁷¹ Also, considering contextual and cultural factors that encompass emotions is vital when studying malevolent behaviors, as these behaviors can arise within specific everyday contexts, extending beyond clinical populations, as previous studies have shown.^{72,73} By incorporating these factors, not only in Western samples but also in more culturally diverse populations, such as Latino American adults, we can gain valuable insights into the multifaceted nature of malevolent behaviors and their broader societal implications.

Conclusion

In conclusion, results of this research show that each trait of the Dark Triad has different connections with components of emotional intelligence in a non-clinical sample. Individuals with higher scores in Machiavellianism may have difficulties in repairing their emotions, while emotional clarity difficulties in these individuals were associated with younger age. Subclinical psychopathy was negatively related to emotional attention and clarity. In contrast, individuals with narcissistic traits may pay more attention to their emotions and this was positively associated with females. Moreover, subclinical narcissism was the most central in the network to connect the Dark Triad traits and emotional intelligence, and only related to other emotional aspects when reinforced with other dark personality traits. In summary, these findings suggest that trait emotional intelligence should be considered in conjunction with other emotional and cognitive variables, such as empathy and beliefs of control toward others, in order to mitigate potential aversive personality traits among Peruvian individuals, including younger populations, as a preventative measure.

Results highlight that emotional intelligence domains could act as a protective factor to aversive traits. Specifically, ignoring negative emotions can lead to the buildup of tension and insensitive behaviors towards others in the short term. However, recognizing positive emotions can contribute to establishing satisfying relationships, although this solely does not indicate an adequate emotional development. Additionally, emotional clarity can be particularly beneficial for younger adults in identifying triggers or situations that provoke negative emotions towards others. By recognizing these triggers, individuals can cultivate greater awareness, understanding, and empathy towards others' emotions. They can then take adaptive actions to avoid or manage situations that could potentially harm others. Finally, trait emotional repair can assist adults in recovering from negative emotional experiences, managing impulsivity and stress, and effectively resolving conflicts. By engaging in effective emotional regulation, individuals can enhance their coping strategies, thereby reducing the likelihood of engaging in maladaptive behaviors.

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