




Empirical Articles

The dark triad and subjective well-being: The mediating role of cognitive-emotional regulation strategies

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The dark triad (DT) is composed of psychopathy, narcissism, and Machiavellianism. These traits have usually been correlated with maladaptive strategies of emotion regulation. In turn, these types of strategies have shown a negative relationship with the components of subjective well-being (SWB): affective well-being (AWB) and cognitive well-being (CWB). The principal objective of the present study was to analyze the possible mediating role of adaptive and maladaptive cognitive-emotional regulation strategies in the relationship between the DT and SWB components. For this purpose, a community sample of 678 participants ($M_{\text{age}} = 35.03$; 53.1% women) completed the Satisfaction with Life Scale (SWB), the Positive and Negative Affect Schedule (PANAS), the Cognitive Emotional Regulation Questionnaire (CERQ-36), and the Short Dark Triad (SD-3). The results showed a good fit with the model in which Machiavellianism was indirectly and negatively related to CWB through the effect of maladaptive strategies and AWB, and indirectly and positively related to CWB through the effect of adaptive strategies and AWB. Narcissism was indirectly positively related to CWB through the effect of adaptive strategies and AWB. Finally, psychopathy was indirectly negatively associated with CWB through the effect of adaptive strategies and AWB. Limitations and clinical implications of this research are discussed.

Key words: Dark triad, Machiavellianism, psychopathy, narcissism, well-being, emotion regulation strategies.

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INTRODUCTION

The dark triad (DT) contains three socially aversive traits: Machiavellianism, narcissism, and psychopathy (Paulhus & Williams, 2002). Machiavellianism is associated with an amoral and calculating personality. These individuals frequently use strategies of manipulation and attractive personalities to impress others, while they are also focused on their self-interest and are characterized by a lack of morality (Jakobwitz & Egan, 2006). Narcissism is associated with an excess of self-love, superiority, admiration seeking, and dominancy. Narcissists often have relationships that can range from exciting to manipulative and exploitative to satisfy their desire for admiration (Morf & Rhodewalt, 2001). Finally, psychopathy is related to callousness and superficial charm. Moreover, as a main characteristic, these individuals present high impulsiveness, and this lack of self-control could have important consequences such as the execution of aggressive and criminal behaviors (Jones & Paulhus, 2014).

Moreover, individuals with DT traits present a high level of impulsive-antisocial tendencies and criminal tendencies combined with a lack of remorse (Garofalo, Neumann & Vellotti, 2020; Gómez-Leal, Megías-Robles, Sánchez-López & Fernández-Berrocal, 2021; Hare & Neumann, 2008). Most of the investigations on the DT have concentrated on the negative effects it causes in society. For example, these traits have been related to higher levels of aggressiveness and a tendency to engage in norm-violating acts (Paulhus & Williams, 2002). However, in recent years, scientific interest has increased in the emotional consequences that such an individual may suffer.

Specifically, Machiavellianism and psychopathy have been positively correlated with various negative emotional aspects such as depressive symptoms, stress outcomes, or anxiety (Coleman, Pincus & Smyth, 2019; Gómez-Leal *et al.*, 2019; Love & Holder, 2014; Sabouri *et al.*, 2016). On the contrary, rather less is known about the factors involved in the well-being of this population. For this reason, the principal objective of this study was to analyze the relationship between the DT and well-being and to study the possible role of cognitive-emotional regulation strategies in this relationship.

Subjective well-being (SWB) refers to a person's evaluation of their life satisfaction (Diener, Oishi & Lucas, 2003). The SWB literature distinguishes between an affective well-being (AWB) and a cognitive well-being (CWB) component (Diener, 1984; Diener, Suh, Lucas & Smith, 1999). AWB refers to the balance of positive and negative affects, while CWB focuses on the individual evaluation of one's life. Both components, although different, are interrelated; individuals employ their AWB to judge their satisfaction with life and, consequently, in accord with the time-sequential model of SWB, AWB will have an important impact on CWB. That is, the combination of general affect states has implications for the individual global evaluation of life. Therefore, it is expected that an individual with a higher positive affect will evaluate their life in a more positive manner than one with lower positive affect (Kim-Prieto, Diener, Tamir, Scollon & Diener, 2005). Focusing on SWB is relevant since it has been related to better mental and physical health in community samples (Derdikman-Eiron *et al.*, 2011; Diener & Chan, 2011; Lombardo,

Jones, Wang, Shen & Goldner, 2018; Sirgy, 2019; Soldevila-Domenech *et al.*, 2021; Wiltink *et al.*, 2011).

Machiavellianism and psychopathy have been correlated with low levels of CWB and AWB (Egan, Chan & Shorter, 2014; Love & Holder, 2014; Van Groningen, Grawitch, Lavigne & Palmer, 2021). Concerning narcissism, despite sharing a common core with the other two traits of the DT, it can be distinguished from these by its social orientation, having greater social support (Almagiá, 2004). This characteristic could underpin the positive relationship shown between narcissism and SWB in the previous literature (Clark, Lelchok & Taylor, 2010; Egan, Chan & Shorter, 2014; Jonason, Strosser, Kroll, Duineveld & Baruffi, 2015; Rose & Campbell, 2004; Van Groningen, Grawitch, Lavigne & Palmer, 2021).

Another variable that has previously been related to SWB is the ability to regulate emotions. Emotional regulation is a multidimensional concept that involves the ability to modulate emotions (McRae & Gross, 2020). In addition, a wide range of strategies can be considered based on their adaptability, which is crucial for an individual's SWB. Thus, for instance, adaptive strategies such as positive reappraisal are related to better mental health and higher SWB in contrast to maladaptive strategies such as self-blame or catastrophizing, which are detrimental (Balzarotti, Biassoni, Villani, Prunas & Velotti, 2016; Domínguez-Sánchez, Lasa-Aristu, Amor & Holgado-Tello, 2013; John & Gross, 2004; Mérida-López, Extremera, Quintana-Orts & Rey, 2019; Nyklíček, Vingerhoets & Zeelenberg, 2011; Schäfer, Naumann, Holmes, Tuschen-Caffier & Samson, 2017).

Regarding the DT, although the literature is scarce, previous studies have also linked it to emotion regulation strategies. For example, Machiavellianism has usually shown positive correlations with maladaptive strategies such as expressive suppression, while psychopathy has frequently been negatively associated with adaptive strategies such as cognitive reappraisal or positive refocusing (Akram & Stevenson, 2021; Kyranides & Neofytou, 2021; Mojsa-Kaja, Szklarczyk, González-Yubero & Palomera, 2021). Concerning narcissism, previous studies have yielded inconsistent results. While some studies pointed to a positive relationship between this trait and maladaptive emotion regulation strategies (e.g., Altmann, 2017), others found no significant relationship between these two variables (Zhang, Wang, You, Lü & Luo, 2015) or even negative relations (Akram & Stevenson, 2021). Finally, and related to the present study's focus, Mojsa-Kaja, Szklarczyk, González-Yubero, and Palomera (2021) analyzed adaptive and maladaptive cognitive-emotional regulation strategies as risk or protective factors for the link between the DT and negative outcomes during the COVID-19 pandemic. They showed how the increase in maladaptive strategies in those with higher traits of Machiavellianism and narcissism tend to have higher levels of stress, anxiety, and depression. On the other hand, those with psychopathy traits tend to use less adaptive strategies, which are related to higher depressive symptoms.

Gender differences have been found in the three variables of interest included in the study. Regarding emotional regulation strategies in the general population, women tend to use more strategies than men. Interestingly, they employ more maladaptive strategies such as rumination, which seems to be related to higher

depressive symptomatology (Duarte, Matos & Marques, 2015; Nolen-Hoeksema, 2012). Concerning the DT, previous research has revealed that men, in general, scored higher than women on all three DT traits (Cale & Lilienfeld, 2002; Grijalva *et al.*, 2015; Krampen, Effertz, Jostock & Müller, 1990). Finally, gender differences in SWB remain clear, although it appears that men have higher CWB with small effect sizes, while women seem to have higher levels of both negative and positive affects (Batz & Tay, 2018).

In light of previous studies, the main objective of this study was to analyze the role of adaptive and maladaptive cognitive-emotional regulation strategies in mediating the relationship between the DT and AWB and CWB. Moreover, we explored possible gender differences in the study variables. Agreeing with the literature reviewed, we proposed these hypotheses:

Hypothesis 1: Higher Machiavellianism and psychopathy traits are related to lower AWB and CWB, while higher narcissism traits will be related to higher AWB and CWB.

Hypothesis 2: Higher Machiavellianism traits are related to maladaptive emotional regulation strategies, while higher psychopathy traits are related to less adaptive strategies. The other relationships between DT traits and emotion regulation strategies will also be explored.

Hypothesis 3: More adaptive and less maladaptive emotional regulation strategies are related to better AWB and CWB.

Hypothesis 4: The relationship between the DT and CWB is mediated by AWB and emotion regulation strategies.

METHOD

Participants

A community sample of 678 adult volunteers ($M_{\text{age}} = 35.03$, $SD = 14.45$, with an age range from 18 to 70 years; women = 53.1%) took part in this study. The participants in this investigation were recruited through the snowball technique with the voluntary help of students from the University of Málaga. They participated in the study, and they used their social media platforms to disseminate information about this research. Before starting the study, they were informed of the anonymity of the collected data and received an informed consent form following the Helsinki Declaration (World Medical Association, 2013). The study protocol was approved by the University of Málaga (approval number: CEUMA 14-2019-H) forming part of this research project (UMA18-FEDERJA-114).

Procedure and instruments

We used the online platform LimeSurvey (<http://limesurvey.org>) to collect the data. Participants completed the Satisfaction with Life Scale (SWLS) to measure CWB, the Positive and Negative Affect Schedule (PANAS) to evaluate AWB, the Cognitive Emotional Regulation Questionnaire (CERQ-36) to measure cognitive regulation strategies, and the Short Dark Triad (SD-3) to assess the dark triad. We used a random order of measures. Participants needed approximately 50 min to complete these instruments. A description of each scale follows.

The SWLS (Diener, Emmons, Larsen & Griffin, 1985) is a self-report scale used to measure life satisfaction. This scale has five items, which were answered using a seven-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*). We averaged all the items to obtain the total score for this test. It has presented an adequate internal consistency ranging from $\alpha = 0.79$ to $\alpha = 0.87$ (Diener, Emmons, Larsen & Griffin, 1985; Pavot,

Diener, Colvin & Sandvik, 1991). In our study, the internal consistency was $\alpha = 0.84$. Therefore, this instrument was employed to measure CWB.

The PANAS (Watson, Clark & Tellegen, 1988) is a 10-item self-report questionnaire used to assess positive and negative effects. This instrument uses a five-point scale (1 = *not at all* to 5 = *strongly*). We averaged all the items to obtain the total score for this test. The measure of AWB was the affect balance score, computed as the difference between mean positive affect (PA) score and mean negative affect (NA) score (i.e., PA – NA). In this study, we used the Spanish version of this scale (Sandín *et al.*, 1999). It has a good internal consistency (negative affect: $\alpha = 0.91$; positive affect: $\alpha = 0.89$). The internal consistency in our research for positive affect was $\alpha = 0.63$ and for negative affect was $\alpha = 0.74$.

The CERQ-36 (Gamefski, Kraaij & Spinhoven, 2002; Gamefsky & Kraaij, 2007) is a self-report scale used to assess cognitive components of emotional regulation. CERQ-36 uses a five-point scale with 1 = (*almost*) *never* to 5 = (*almost*) *always*. This scale has 36 items grouped in 9 subscales: self-blame, rumination, catastrophizing, and other-blame (maladaptive strategies) and positive refocusing, acceptance, putting into perspective, refocus on planning, and positive reappraisal (adaptive strategies). In our study, we were interested in the global scores for maladaptive and adaptive regulation strategies. To compute both scores, we summed all the items corresponding to each subscale and then averaged the scores of those subscales belonging to the adaptive and maladaptive strategies. The Spanish version of the instrument was used for this study (Domínguez-Sánchez, Lasa-Aristu, Amor & Holgado-Tello, 2013). It has an adequate internal consistency (maladaptive strategies: $\alpha = 0.89$; adaptive strategies: $\alpha = 0.90$) and in this research was $\alpha = 0.82$ for maladaptive strategies and $\alpha = 0.90$ for adaptive strategies.

The SD-3 (Jones & Paulhus, 2014) is a 27-item self-report questionnaire measuring the dark triad (Machiavellianism, psychopathy, and narcissism). This instrument uses a five-point Likert scale, where 1 = *strongly disagree* and 5 = *strongly agree*. To obtain the score for each subscale, we summed all the items corresponding to that trait. We used the Spanish version of this questionnaire (Pineda, Sandín & Muris 2020), which has a good internal consistency range from $\alpha = 0.61$ to $\alpha = 0.80$. In our study, the internal consistency ranged between $\alpha = 0.63$ and $\alpha = 0.76$.

Data analysis

We first computed descriptive statistics of each measure and explored the gender differences using a *t* test. Second, to test H1, H2, and H3, Pearson's correlations were computed between all variables included in this research. Moreover, we conducted multiple regression analysis to identify the DT traits that better predicted each emotional regulation strategy. Third, to test H4, which is the principal objective of this study, a path analysis was carried out to calculate the proposed model integrating the DT, emotion regulation strategies, AWB, and CWB. This model analyzed the relationship between the DT and cognitive emotion

regulation, and in turn, examined the association between these strategies and AWB. Finally, we calculated the correlation between AWB and CWB. Only significant variables in the multiple regression analyses were included as mediators. In addition, this model was controlled for gender and age in those variables with which they showed a significant relationship. The model fit to the data was verified by goodness-of-fit index (GFI), comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardized root mean squared residual (SRMR) indices. Maximum likelihood estimation was employed to identify the model parameters. Descriptive analysis, *t* tests, and Pearson's correlations were performed with SPSS version 24.0 (IBM Corporation, Armonk, NY, USA). Path analysis was conducted using IBM AMOS 21.0 (IBM Corporation, Armonk, NY, USA) software.

RESULTS

Descriptive statistics (means and standard deviations) and gender differences for all study variables are shown in Table 1. Significantly higher scores were detected for women in comparison with men on the total score of maladaptive strategies. These differences are explained by the scores obtained in rumination and refocus on planning (see Table S1). Significantly higher scores were detected for men compared with women on AWB, Machiavellianism, narcissism, and psychopathy. For more details, see Table 1.

Pearson's correlations are displayed in Table 2. Focusing on H1, the correlations revealed a negative association between CWB and psychopathy and Machiavellianism and a positive relationship with narcissism ($p < 0.01$). A positive relationship was found between AWB and narcissism, while a negative relationship was found with psychopathy ($p < 0.01$). Concerning H2, we found a significant positive correlation between Machiavellianism and maladaptive strategies ($p < 0.01$) and narcissism and adaptive strategies ($p < 0.05$). And we found a significant negative relationship between psychopathy and adaptive strategies ($p < 0.01$). Finally, concerning H3, we found significant positive correlations between both CWB and AWB and adaptive strategies and a negative relationship with maladaptive strategies ($p < 0.01$). Correlations between study variables and the subscales of cognitive regulation strategies are shown in Table S2. Multiple regression analyses revealed a significant positive relationship between adaptive strategies and Machiavellianism ($\beta = 0.12$, $p < 0.05$) and narcissism ($\beta = 0.20$,

Table 1. Means, standard deviations (SDs), and *t*-test analyses for gender differences for all the variables included in the study

	Global		Men		Woman		Gender differences	
	Mean	SD	Mean	SD	Mean	SD	<i>T</i>	Cohen's
CWB	4.80	1.10	4.70	1.11	4.81	1.07	−1.40	0.10
AWB	1.10	0.93	1.22	0.88	1.00	0.95	3.34*	0.24
Machiavellianism	24.50	5.84	25.62	5.93	23.50	5.60	4.81**	0.40
Narcissism	23.70	4.80	24.63	4.61	22.82	4.73	5.02**	0.40
Psychopathy	17.25	5.04	18.75	5.04	15.92	4.65	7.60**	0.60
Maladaptive strategies	11.50	2.20	11.29	2.00	11.66	2.30	−2.22*	0.17
Adaptive strategies	14.20	2.40	14.07	2.30	14.31	2.44	−1.31	0.10

Note: The measure of AWB was the affect balance score, computed as the difference between mean PA score and mean NA score (i.e., PA – NA). CWB = cognitive well-being; AWB = affective well-being.

* $p < 0.05$;

** $p < 0.01$.

Table 2. Pearson's correlations among the variables included in this study

	2	3	4	5	6	7
1. CWB	0.41**	-0.15**	0.08*	-0.17**	-0.19**	0.24**
2. AWB	-	0.01	0.16**	-0.12**	-0.29**	0.26**
3. Machiavellianism		-	0.35**	0.46**	0.14**	0.03
4. Narcissism			-	0.41**	0.03	0.10*
5. Psychopathy				-	0.06	-0.23**
6. Maladaptive strategies					-	0.02
7. Adaptive strategies						-

Note: CWB = cognitive well-being; AWB = affective well-being.

* $p < 0.05$;

** $p < 0.01$.

$p < 0.001$) and a negative relationship with psychopathy ($\beta = -0.37, p < 0.001$). Finally, a significant positive relationship was found between maladaptive strategies and Machiavellianism ($\beta = 0.14, p < 0.05$).

Regarding H4, the proposed path analysis model revealed an acceptable fit to the data (CFI = 0.91; GFI = 0.97; RMSEA = 0.08; SRMR = 0.05) and accounted for 17.1% of the explained variance in CWB. Figure 1 depicts the estimated model with the standardized path coefficients. Following the model, narcissism was positively associated with adaptive strategies, psychopathy was negatively associated with adaptive strategies, and Machiavellianism was positively associated with adaptive and maladaptive strategies. In turn, both types of strategies were related to AWB. Maladaptive strategies were related negatively to AWB, while adaptive strategies were related positively. Finally, AWB was positively related to CWB.

Analysis of the indirect effects revealed that psychopathy was indirectly and negatively related to CWB through the effect of adaptive strategies and AWB (standardized indirect effect = -0.04 ; 95% CI $[-0.061$ to $-0.027]$). Machiavellianism was indirectly and negatively related to CWB through the effect of maladaptive strategies and AWB (standardized indirect effect = -0.02 ; 95% CI $[-0.005$ to $-0.002]$) and indirectly and positively related to CWB through the effect of adaptive strategies

and AWB (standardized indirect effect = 0.01 ; 95% CI $[0.001$ to $0.005]$). Narcissism was indirectly and positively related to CWB through the effect of adaptive strategies and AWB (standardized indirect effect = 0.02 ; 95% CI $[0.011$ to $0.038]$).

Finally, we ran an additional path model including the relationships between all the DT traits and the emotion regulation strategies with the aim of ensuring that the previous results are maintained when controlling for the effect of the other personality traits (see Fig. S1). The fit of this model was similar to that of the previous model (CFI = 0.91; GFI = 0.97; RMSEA = 0.09; SRMR = 0.05), accounting for 17.1% of the explained variance.

DISCUSSION

The present study aimed to analyze the role of DT traits and adaptive and maladaptive cognitive-emotional regulation strategies in SWB. Since relatively few studies have focused on analyzing positive outcomes related to these traits, we were specifically interested in analyzing the relationship between the DT traits and the variables of AWB and CWB of the participants through the mediating role of engagement in adaptive and maladaptive cognitive-emotional regulation strategies.

First, regarding H1, our study revealed a negative relationship between the traits of psychopathy and Machiavellianism and

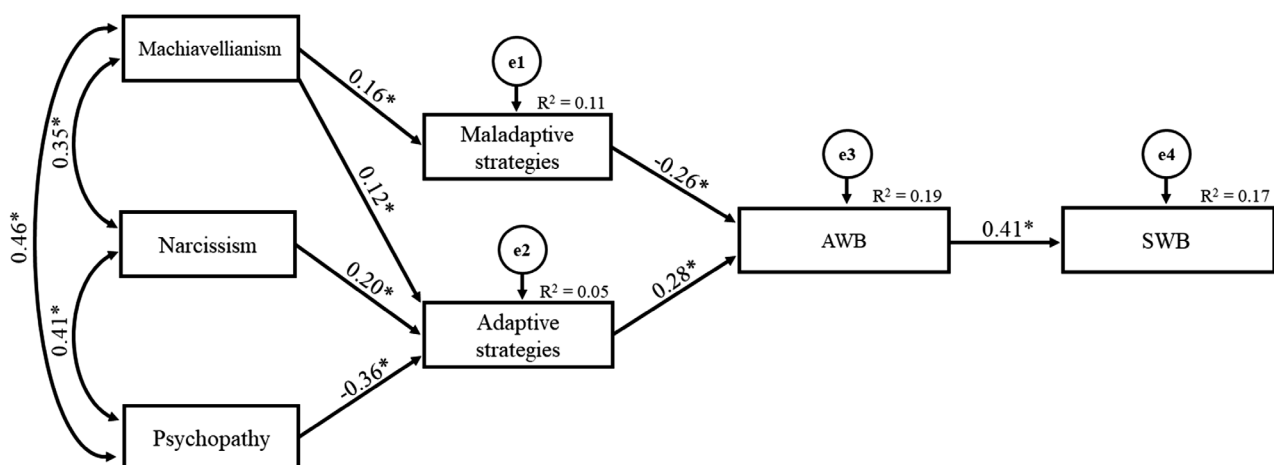


Fig. 1. Graphical representation of the model, including standardized path coefficients and explained variance (R^2). Note: An asterisk indicates significance at the $p < 0.05$ level.

SWB. These findings are consistent with the results described in other studies in which Machiavellianism and psychopathy were related to negative emotional states. For example, these traits have been associated with more depressive symptoms and higher anxiety levels (Gómez-Leal *et al.*, 2019; Sabouri *et al.*, 2016). Moreover, Machiavellianism and psychopathy have previously been correlated with various aspects of SWB, such as high levels of negative affect (Egan, Chan & Shorter, 2014). Narcissism was positively correlated with SWB, as hypothesized (H1). This is not surprising, as this trait, unlike Machiavellianism and psychopathy, has been related to lower levels of depression and higher self-esteem, among others (Clark, Lelchok & Taylor, 2010; Egan, Chan & Shorter, 2014; Jonason, Strosser, Kroll, Duineveld & Baruffi, 2015; Rose & Campbell, 2004; Van Groningen, Grawitch, Lavigne & Palmer, 2021).

Concerning H2, our study showed that higher levels of Machiavellianism were positively associated with maladaptive emotional regulation strategies, while psychopathy traits were negatively associated with adaptive strategies. These findings are in line with the results of several investigations demonstrating that high levels of these traits are associated with difficulties in managing emotions (Blair, 2007; Gómez-Leal, Megías-Robles, Sánchez-López & Fernández-Berrocal, 2021; Wai & Tiliopoulos, 2012). In particular, Machiavellians exhibit a specific emotion regulation style. They present an affective detachment and a lack of emotional involvement with others, focusing their motivation on immediate rewards. These characteristics result in the execution of maladaptive emotional strategies such as blaming others (Jones & Paulhus, 2009). Interestingly, Machiavellianism was positively associated with adaptive strategies. This is not completely surprising since a characteristic component of Machiavellianism is the tendency to engage in cognitive planning with the aim of gaining power. These characteristics could therefore result in the formation of a relationship between this trait and certain adaptive regulation strategies (Walker *et al.*, 2022).

Regarding psychopathy, this has been widely associated with difficulties in processing emotions (Gómez-Leal, Gutiérrez-Cobo, Cabello, Megías & Fernández-Berrocal, 2018; Gómez-Leal, Megías-Robles, Sánchez-López & Fernández-Berrocal, 2021). These difficulties are related to maladaptive psychopathic traits such as impulsivity or antisocial behavior (Stinson, Becker & Sales, 2008).

In addition, consistent with H3, our results showed that individuals who engage in more adaptive strategies and less in maladaptive strategies had higher AWB and CWB. This result is consistent with a vast body of previous literature confirming the protective role of engaging in adaptive strategies for SWB and mental health, versus the counterproductive effect of maladaptive strategies (Balzarotti, Biassoni, Villani, Prunas & Velotti, 2016; Domínguez-Sánchez, Lasa-Aristu, Amor & Holgado-Tello, 2013; John & Gross, 2004; Nyklíček, Vingerhoets & Zeelenberg, 2011; Schäfer, Naumann, Holmes, Tuschen-Caffier & Samson, 2017).

Besides, we analyzed the study's main objective by offering a model (H4) to better understand the role of cognitive-emotional regulation strategies in mediating the relationship between the DT and the well-being variables of AWB and CWB. Starting with Machiavellianism, we found that participants who scored higher on this trait engaged in more maladaptive strategies with a subsequent reduction in AWB, which, in turn, explained the reduction in

CWB. Regarding psychopathy, those with higher scores less frequently employed adaptive strategies to reduce their AWB and CWB. These results are consistent with the study by Mojsa-Kaja, Szklarczyk, González-Yubero, and Palomera (2021), which showed that the inappropriate use of adaptive and maladaptive cognitive-emotional regulation strategies could be detrimental to the mental health of individuals with higher levels of DT traits. These results are particularly relevant given that these two traits of the DT have been recently related to negative outcomes such as depression (Gómez-Leal *et al.*, 2019; Sabouri *et al.*, 2016).

Finally, higher levels of narcissism were related to adaptive strategies. Subsequently, these adaptive strategies were related to higher AWB that successively led to higher CWB. This result points to narcissism as a trait that favors the implementation of regulatory strategies that are considered optimal. Previous investigations have found inconsistent results regarding the relationship between emotional regulation strategies and narcissism (Akram & Stevenson, 2021; Mojsa-Kaja, Szklarczyk, González-Yubero & Palomera, 2021; Zhang, Wang, You, Lü & Luo, 2015). Nonetheless, although sharing a common core with Machiavellianism and psychopathy, narcissism has been related to a variety of outcomes (social support, depression, and SWB) in a different direction than Machiavellianism and psychopathy. This means that narcissism is related to higher social support and less depressive symptomatology (Almagiá, 2004; Egan, Chan & Shorter, 2014; Gómez-Leal *et al.*, 2019) and could even buffer the effect of psychopathy and Machiavellianism on SWB (Van Groningen, Grawitch, Lavigne & Palmer, 2021).

Additional analyses were carried out to examine possible gender differences in the three variables studied. Regarding the employment of emotional regulation strategies, the women in our sample implemented more maladaptive strategies than the men, an effect that appears to be due to the increased employment of rumination and other-blame strategies compared with the men (see Table S1). These results align with previous studies of gender differences, particularly for those in which women seem to engage more in rumination during negative situations, which is recognized as a core feature of depression (Balzarotti, Biassoni, Villani, Prunas & Velotti, 2016; Duarte, Matos & Marques, 2015; Nolen-Hoeksema, 2012; Whisman, du Pont & Butterworth, 2020). Men also scored higher on the three DT traits. This could be explained by the previous literature, which found that the transgressive behaviors that characterize DT traits are more prevalent in men than women (Moffitt, Caspi, Rutter & Silva, 2001). Finally, men obtained higher scores than women on AWB, consistent with the results of some previous studies (Batz & Tay, 2018).

Our findings have important practical implications. This study corroborates the results of previous research, showing that high psychopathy and Machiavellianism traits are associated with inappropriate use of emotional regulation strategies and poorer mental health (Akram & Stevenson, 2021; Gómez-Leal *et al.*, 2019; Mojsa-Kaja, Szklarczyk, González-Yubero & Palomera, 2021). These results could therefore be of value for informing the development of clinical treatments and research in this field. In particular, training programs aimed at individuals with high levels of DT traits – specifically Machiavellianism and psychopathy – could offer tools to increase the use of adaptive strategies and reduce those that are maladaptive.

Finally, it is important to consider some of the limitations of this study. First, the questionnaires used in the current study were self-reports. Therefore, the responses to these types of measures can be influenced by social desirability (Anastasi, 1982). Second, given the cross-sectional methodology employed in this investigation, it was not possible to establish causality between the study variables. Therefore, other types of experimental designs will be necessary to confirm our findings. Finally, although this study has focused on a community population, making it possible to generalize the proposed model, it would be interesting to replicate these results in clinical samples, for example, in individuals diagnosed with psychopathy.

In conclusion, this study attempted to identify the relationship between the DT and SWB through the mediating role of cognitive-emotional regulation strategies. We found that participants with high levels of DT had a specific emotion regulation style that impacted their SWB. A better knowledge of the factors influencing SWB in individuals with high levels of DT constitutes an important step forward for mental health professionals. Furthermore, training in adaptive strategies could have significant benefits for the well-being of these individuals and for the general population, reducing the negative consequences of these traits for society.

RESEARCH INVOLVING HUMAN PARTICIPANTS AND/OR ANIMALS

This research involved human participants. The study protocol was approved by the University of Málaga (approval number: CEUMA 14-2019-H) as part of the research project (UMA18-FEDERJA-114).

CONSENT TO PARTICIPATE

Informed consent was obtained from all individual participants included in the study.

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CONFLICT OF INTEREST

None.

DATA AVAILABILITY STATEMENT

The data sets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article:

Figure S1. Graphical representation of the model, including standardized path coefficients and explained variance (R^2). *Note:* An asterisk indicates significance at the $p < 0.05$ level.

Table S1. Means, standard deviations (SDs), and t-test analyses for gender differences in cognitive regulation strategies

Table S2. Pearson's correlations among the variables included in this study

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