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**Tétrade Negra de Personalidade,
Robustez Mental e Comportamentos de *Bullying*
no Ensino Superior**

DISSERTAÇÃO DE MESTRADO

Hélder Tomé Pestana Jesus
MESTRADO EM PSICOLOGIA DA EDUCAÇÃO



UNIVERSIDADE da MADEIRA

A Nossa Universidade

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Abstract

Bullying is a complex problem in higher education that is receiving increasing attention in the literature. The current study addresses this phenomenon and aims to contribute to the existing literature by examining the role of the dark tetrad of personality and the trait of mental toughness in predicting the extent to which college students perpetrate and are victims of bullying behaviours. A cross-sectional design was used to collect students' self-reports of the dark personality tetrad and mental toughness, as well as their perceptions of the extent to which they had been perpetrators and victims of bullying behaviour towards others in the past six months. Using a sample of 366 university students, results showed that the dark traits of narcissism and everyday sadism positively influenced bullying aggression, whereas Machiavellianism and psychopathy emerged as significant and positive antecedents of bullying victimisation. In addition, mental toughness had a negative effect on both criteria, even when the effects of the dark tetrad of personality were taken into account. These findings suggest that these personality dispositions play a distinct role in bullying aggression and bullying victimisation, and support that these complex phenomena are also explained by individual dispositions. The main theoretical and practical implications of these findings are discussed in the context of preventing and mitigating bullying in higher education settings.

Keywords: Bullying aggression, Bullying victimisation, Dark tetrad, Mental toughness, Higher education, College students.

Resumo

O bullying é um problema complexo no ensino superior que tem recebido uma atenção crescente na literatura da especialidade. O presente estudo aborda este fenómeno e visa contribuir para a literatura existente, examinando o papel da tétrede negra da personalidade e da robustez mental na previsão do grau que os estudantes universitários perpetuam e ou são vítimas comportamentos de bullying. Um plano de investigação preditivo por inquérito transversal foi utilizado para avaliar a tétrede negra da personalidade e a robustez mental dos estudantes universitários, através de um questionário autoadministrado. Neste questionário foram também avaliadas as suas perceções acerca do grau em que estes cometeram atos de bullying e ou foram vítimas de comportamentos de bullying, nos últimos seis meses. Tendo por base uma amostra de 366 estudantes universitários, os resultados mostraram que os traços negros de narcisismo e sadismo influenciam positivamente os comportamentos de bullying, enquanto o Maquiavelismo e psicopatia surgiram como antecedentes positivos e significativos de ser vítima de bullying. Adicionalmente, a robustez mental apresentou um efeito negativo em ambos os critérios, mesmo quando os efeitos da tétrede negra da personalidade foram controlados. Estes resultados sugerem que estas disposições de personalidade desempenham um papel distinto, mas relevante, nos comportamentos e vitimização de bullying, suportando a ideia de que estes fenómenos são também explicados por disposições individuais. As principais implicações teóricas e práticas destes resultados são apresentadas e discutidas no contexto da prevenção e mitigação do bullying no ensino superior.

Palavras-chave: Comportamentos de bullying, Vítimas de bullying, Tétrede Negra, Robustez mental, Ensino superior, Estudantes universitários

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Introduction

Bullying is a complex, pervasive and arguably endemic problem in higher education. However, there is a lack of research examining the antecedents of bullying in order to mitigate its consequences in this educational context (Tight, 2023). There is a general consensus among scholars on the definition of bullying (Abdelaziz & Abu-Snieneh, 2022; Björklund et al., 2020; Gaffney et al., 2021; Ng et al., 2022), as an act perpetrated by one or more individuals that exposes someone to negative acts in a repeated and continuous manner (Olweus, 2010). Such a negative act can be conceptualised as the attempted or actual infliction of injury or discomfort on another (Olweus, 2010). These hostile acts can take the form of physical or verbal aggression, or through offensive facial expressions and gestures, such as deliberately excluding the victim from the group (Olweus, 2010). Furthermore, bullying occurs in the context of an asymmetrical relationship between the aggressor and the victim, where the victim is unable to defend themselves (Olweus, 2010). Consequently, bullying aggression encompasses negative acts perpetrated by one or more individuals against a defenceless victim (Olweus, 2010). Such negative acts may take the form of physical bullying, which can be defined as any behaviour perpetrated by the aggressor that physically hurts the victim, such as shoving, hitting or kicking (Wang et al., 2009). Verbal bullying is any verbal aggression perpetrated by the aggressor that hurts the victim, such as name-calling or teasing. This can be defined as any action taken by the aggressor that causes the victim emotional distress (Wang et al., 2009). Relational/social bullying can be described as any action taken by the aggressor that indirectly causes the victim emotional distress, such as the intentional social exclusion or spreading negative rumours about the victim (Wang et al., 2009).

In order to identify and describe bullying phenomena, three main criteria must be applied. Firstly, the actions must have an intent to harm or injure. Secondly, they must be repeated and continuous over time. Thirdly, they should occur in the context of interpersonal relationships characterised by a perceived or real power imbalance (Björklund et al., 2020; Olweus, 2010). It is also important to note that bullying does not depend on any form of provocation on the part of the victim (Björklund et al., 2020; Olweus, 2010). As such, bullying is a form of abuse that differs from other forms of abuse (e.g. child and spousal abuse) in terms of the context in which it occurs and the nature of the relationships between the parties involved. Conversely, bullying victimisation can be described as repeated exposure to these negative acts by one or more individuals over

time (Tarafa et al., 2022). As bullying tends to affect the ability to learn, those who are bullied experience negative consequences for their educational outcomes, including in higher education. This is due to the disruption of their psychological state, which affects their study habits, general behaviour and adjustment (Björklund et al., 2020; Nadeem & Usman, 2022). In addition, victims of bullying tend to display a lack of confidence, worry, anxiety and passivity, which in turn leads to lower academic performance and engagement (Nadeem & Usman, 2022). These consequences extend beyond the university setting, negatively impacting the victims' mental health, and, in some cases, causing neurological impairment (Nadeem & Usman, 2022). Given the negative and harmful effects of bullying aggression and victimisation, there has been a great deal of research in the educational context. However, the majority of studies have focused on children and adolescents, with the analysis of this phenomenon in other educational contexts, such as higher education, remaining undeveloped (McGeown et al., 2015). While research has demonstrated that bullying reaches its peak in the young adolescent population and subsequently declines as the population ages, this conclusion primarily applies to physical bullying (Gaffney et al., 2021; Tight, 2023). In contrast, relational/social and verbal bullying tends to increase with age, manifesting as passive aggressiveness (Gaffney et al., 2021; Tight, 2023).

The current study addresses this phenomenon and aims to contribute to the existing literature on this topic, by examining the role of dark personality attributes in predicting the extent to which college students perpetrate and commit bullying behaviours towards others. Furthermore, the study aims to enhance the comprehension of whether and to what extent possessing certain personality attributes may act as protective factors, i.e. mental toughness, contributing to a reduction in the likelihood of being a victim of bullying from others.

To achieve these objectives, the study focuses on the dark tetrad of personality and its dimensions, namely Machiavellianism, narcissism, psychopathy and everyday sadism, as positive antecedents, i.e. predictors, of perpetrated bullying among higher education students. As previously highlighted in the literature, these dimensions, due to their subsumed and common element of callousness, have the potential to trigger bullying and hostility in the context of interpersonal relationships in the academic setting (Pineda et al., 2022; van Geel et al., 2017).

Furthermore, the present study also draws attention to the trait of mental toughness as a presumed personality specific predictor of bullying aggression and bullying victimisation (McGeown et al., 2015). This psychological construct may influence these criteria as it captures an individual's determination to persevere in achieving goals even in the face of adversity, to remain highly focused, and to control emotions in situations of pressure, intense competition, or even intimidation (Clough et al., 2002). In addition, mental toughness plays an important role in academic performance and overall success (McGeown et al., 2015; St Clair-Thompson & Devine, 2023). Despite previous claims that mentally tough students are more effective at establishing and building constructive interpersonal relationships, it has also been argued that mentally tough individuals may become bullies due to their high competitiveness and potential callousness. This, in turn, makes them less likely to feel that they are victims of bullying (Strycharczyk & Clough, 2018).

By focusing on these research questions, the current study contributes to the extant literature in two distinct but complementary ways. Firstly, previous empirical research has not addressed the potential impact of mental toughness on bullying behaviour, despite the recognition of this individual characteristic as a key antecedent of relevant criteria in higher education, such as academic achievement and quality of interpersonal relationships (McGeown et al., 2015; Onley et al., 2013). Secondly, the influence of the dark tetrad of personality on bullying perpetration and victimisation also remains relatively unexplored in empirical studies, particularly in higher education, as most previous studies have focused on the dark triad of personality and at other educational levels (Pineda, Rico-Bordera, et al., 2022; van Geel et al., 2017). Consequently, this study's reliance on the dark tetrad will facilitate a more comprehensive understanding of the influence of the dark side of personality on these criteria, as its fourth dimension, i.e. everyday sadism, will also be considered.

Theoretical framework and research hypothesis

Personality antecedents of being a perpetrator or victim of bullying in higher education

The role of the dark tetrad of personality

Human behaviour is determined by the interaction between the individual's characteristics and factors in the person's context. For example, if the context increases feelings of frustration or injustice, there is a greater likelihood of aggressiveness and negative affect among individuals, which may culminate in bullying behaviour (Keashly & Neuman, 2013). However, individual personality traits may also contribute to this outcome by predisposing individuals to become perpetrators of bullying and other negative social behaviours, particularly those associated with a lack of empathy and callousness, as captured by the dark traits of personality (Jones & Paulhus, 2014; Pineda, Rico-Bordera, et al., 2022; van Geel et al., 2017).

In their initial approach to identifying and conceptualising the dark dispositional components of personality, Jones and Paulhus (2014) proposed an initial conceptualisation of the dark triad of personality dimensions, consisting of three traits or dispositions: a) *Machiavellianism*, which is characterised by an individual tendency to manipulate and deceive others in order to benefit from them; b) *psychopathy*, characterised by impulsivity, social disinhibition, disregard for the consequences of one's actions or the feelings of others, lack of empathy, guilt or remorse; c) *narcissism*, a persistent egocentric focus and approach to life and interpersonal relationships, despite of inherent low self-esteem, which can trigger aggressiveness under the perception that one's ego has been attacked or threatened (Baughman et al., 2012).

More recently, the concept of everyday sadism has been introduced as a core and additional dark dispositional core dimension, forming the dark tetrad of personality in combination with the previous dimensions of narcissism, Machiavellianism, and psychopathy (Paulhus & Dutton, 2016). This additional dark trait can be observed in everyday life. Those who score higher on this disposition tend to participate in and enjoy sadistic, yet socially acceptable, activities (Paulhus & Dutton, 2016), such as liking to watch violent films, play violent video games and participate in contact and/or violent sports. Since its emergence in the literature, this construct of everyday sadism has been studied alongside the other three dark traits, namely Machiavellianism, psychopathy, and

narcissism. Although it shares the element of emotional insensitivity or empathic deficit (i.e. callousness) with these other dark dimensions, everyday sadism has a specific nature and focus characterised by the tendency to experience intrinsic pleasure in inflicting pain or suffering on others (Paulhus et al., 2020).

Previous studies have demonstrated that individual traits and dispositions play a role in driving bullying behaviours in several domains (Baughman et al., 2012; van Geel et al., 2017). In particular, the literature suggests that individuals who exhibit higher levels of subclinical traits of the dark triad tend to be more aggressive and violent (Baughman et al., 2012; van Geel et al., 2017). Previous research in educational settings indicates that dark traits are likely to increase the likelihood of engaging in bullying behaviours towards other classmates. In the higher education setting, where this study was developed, research is still scarce, but there is preliminary support for the influence of dark predispositions on bullying among university students. Specifically, van Geel et al. (2017) reported significant correlations between Machiavellianism, psychopathy, sadism, and bullying, using a sample of young adults (aged 16-21). Another empirical study conducted by Baughman et al. (2012), using a sample of adults (ages 18-70), demonstrated that all dimensions of the dark triad of personality were positively associated with bullying perpetration.

Conversely, it is possible to hypothesise that these negative individual traits and dispositions may also predict bullying victimisation. In particular, studies focusing on adults and workplace victimisation consistently suggest that Machiavellianism predicts victimisation (Fernández-del-Río et al., 2021; Linton & Power, 2013). However, when the educational context is considered, all of the Dark Triad traits emerge as valid predictors of bullying victimisation, especially psychopathy (Boele et al., 2017; Sehar & Fatima, 2016).

Despite the limited research available, empirical evidence suggests that the dark elements of personality play a role in the expression of bullying behaviours or victimisation. Based on these aspects, it can be hypothesised that individuals with a Machiavellian disposition, who tend to manipulate and deceive others in order to benefit themselves, are more likely to engage in bullying behaviours and victimisation in order to manipulate others. Taking these aspects into account, it is hypothesised that:

H1a: Machiavellianism positively predicts bullying aggression.

H1b: Machiavellianism positively predicts bullying victimisation.

It is also reasonable to postulate that individuals who exhibit greater impulsivity, diminished empathy, and a lack of concern for the consequences of their actions, as evidenced by higher scores on the psychopathic scale, are more prone to being bullied by others and, as a consequence of their lack of empathy, are more likely to engage in bullying behaviours as well. This adds plausibility to the following hypotheses:

H2a: Psychopathy positively predicts bullying aggression.

H2b: Psychopathy positively predicts bullying victimization.

With regard to narcissism, individuals who score higher on the narcissistic trait tend to remain highly self-absorbed and have a tendency to interpret derogatory jokes or criticism in an overly negative way. This could lead them to report higher levels of bullying victimisation compared to less narcissistic individuals. Furthermore, narcissistic individuals are more likely to become aggressive and engage in bullying behaviour when they perceive that their ego is under threat or attack (Kjærviik & Bushman, 2021). Therefore, the following hypotheses are formulated:

H3a: Narcissism positively predicts bullying aggression.

H3b: Narcissism positively predicts bullying victimization.

Finally, it is also plausible to assume that individuals with high scores on the sadistic dimension are likely to enjoy making and seeing others suffer, i.e. individuals, and are therefore more likely to engage in bullying behaviour. Likewise, this tendency to engage in socially accepted sadistic activities may lead to a higher likelihood of becoming a victim of bullying (Pineda, Rico-Bordera, et al., 2022). Therefore, it is hypothesised that:

H4a: Everyday sadism positively predicts bullying aggression.

H4b: Everyday sadism positively predicts bullying victimization.

The role of mental toughness

Despite the recognition of mental toughness as a key antecedent of relevant criteria in higher education, such as academic performance and quality of interpersonal relationships (McGeown et al., 2015), the review of the literature related to this personality dimension shows that its potential impact on bullying behaviours remains unaddressed in empirical research (Onley et al., 2013). In addition to uncovering the impact of dark tetrad dispositions on these criteria, this study aims to contribute to the

understanding of the role of personality in bullying and in higher education by analysing the joint effect of the mental toughness trait.

Given the existence of different conceptualisations of mental toughness in the literature (Clough et al., 2002; Gucciardi et al., 2014), it is important to note that the current study follows the conceptualisation of mental toughness as a trait-like construct based on the model of Clough and colleagues (2002). This model characterises mental toughness as a group of four highly correlated components (i.e., the 4C's), as follows: a) *confidence* in own's abilities and interpersonal efficacy, i.e. the belief that one is truly a worthwhile person even when going through difficulties, with the ability to keep going forward in social settings; b) *challenge*, i.e. the tendency to see obstacles as opportunities to grow and succeed in changing environments; c) *control* in life and emotion, i.e. the predisposition to positively influence the environment and effectively managing emotions; and d) *commitment*, i.e. the ability to keep the path to reach one's goals despite of possible setbacks of obstacles.

Some research suggests that individuals with higher levels of mental toughness are better equipped to cope with bullying, because they are more resilient to the negative effects of such behaviour and are less likely to perceive that they are being bullied by dismissing the behaviour or actions of others and not feeling bullied or threatened by that behaviour (McGeown et al., 2015). For instance, they may be more inclined to seek support from friends or professionals, develop effective coping strategies, and maintain a positive outlook in social settings.

However, another perspective on the potential impact of mental toughness on bullying and related behaviours is also highlighted in the literature. As previously noted by Strycharczyk and Clough (2018), there is a belief that a mentally tough individual is more likely to engage in bullying behaviour, as they may become more competitive and driven. This is because these individuals tend to be more insensitive to other people's feelings, as they are more self-focused and have no desire or need to build their self-esteem at the expense of others. This mindset can lead to harmful behaviours or attitudes towards others, either intentionally or unintentionally. As noted above, to the best of our knowledge, the impact of mental toughness on bullying aggression has not been addressed in previous research. Nevertheless, the current study builds on the presented rationale to propose that mental toughness may lead to bullying aggression and prevent bullying victimisation (Strycharczyk & Clough, 2018).

It is therefore plausible to suggest that individuals who are mentally tougher are more likely to become bullies due to their primary focus on goal attainment (Clough et al., 2002; Gucciardi et al., 2014). This may be at the expense of others, and their inattention to others' opinions, either intentionally or unintentionally, may also contribute to this hypothesis.

H5a: Mental toughness is positively related to bullying aggression.

It is also reasonable to postulate that individuals who are mentally tough are less concerned with the opinions of others and better equipped to deal with aggressive behaviour directed at themselves. This would make them less likely to be victims of bullying, as hypothesised below.

H5b: Mental toughness is negatively related to bullying victimization.

In order to provide a complete and parsimonious view of the research hypotheses of this study, they are integrated in the following hypothesized model (see Figure 1).

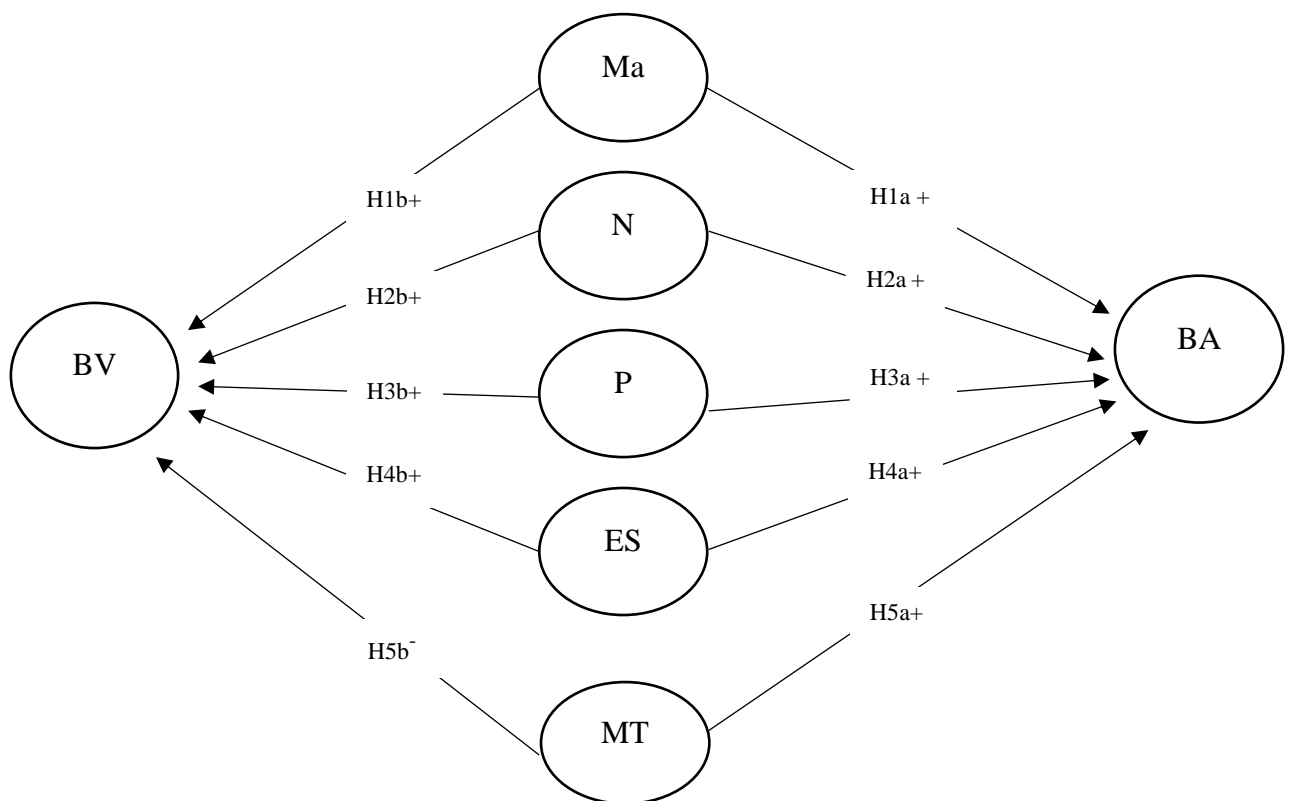


Figure 1. Hypothesized model for the effects of personality traits on bullying behaviours. Ma = Machiavellianism, N = Narcissism, P = Psychopathy, ES = Everyday Sadism, MT = Mental toughness, BV = Bullying Victimization, BA = Bullying Aggression.

Method

Procedure and participants

The participants in this study were students from various academic levels at several Portuguese universities. A predictive and cross-sectional design was employed to collect the students' self-reports of personality traits (i.e., the Dark Tetrad of personality and mental toughness) and their perceptions of the extent to which they had engaged in bullying behaviour or had been victims of bullying behaviour in the previous six months. Prior data collection, approval was obtained from the university data protection and ethics committees (see Appendix 1).

Data were collected between 17 February and May 2023 using a single paper and pencil questionnaire. All scales were included in the questionnaire, which was administered by the research team during class time with the permission of the respective teachers (see Appendix 2). At the time of data collection, participants were provided with an informed consent document, which outlined the study's aims, guaranteed anonymity and confidentiality, and stipulated that the data would be used exclusively for research purposes. Participants were invited to complete the questionnaire voluntarily, with the option to leave any questions unanswered if they felt uncomfortable doing so, and to withdraw from the study at any time. All participants agreed to take part in the study without any form of incentive by signing the informed consent form before completing the questionnaire.

The first section of the questionnaire collected relevant demographic and academic data, including participants' gender, age, university, degree, and academic year. The second section of the questionnaire presented the scales of mental toughness and dark tetrad of personality, while the third and final section requested students to report the frequency with which they had been exposed to and perpetrated bullying behaviours in the academic context, throughout the last six months. In light of the potentially negative nature, reputation and social impact of the variables under study, the anonymity and confidentiality of their responses were emphasised in the instructions for all scales.

After data collection, a final sample of 366 valid questionnaires was obtained. The sample consisted of 61.2% female and 38.8% male participants, with a mean age of 22.19 years ($SD = 6.17$). It included 41.8% of first year students, 16.2% of second year students, 31.6% of third year students and 10.4% of students in their fourth year of their respective college degree. Regarding their university, 80.6% of the students came from the

University of Madeira, 5.5% from the University of Lisbon, 3.8% from the University of Coimbra, 2.5% from the University of Porto and the remaining 7.6% belonged to a miscellaneous group, including the Universities of Aveiro and Minho. Regarding the degree of the participants, 23.8% were students of psychology, 19.4% of engineering, 14.5% of nursing, 10.9% of communication, 7.7% of medicine and 23.7% belong to several degrees, mostly biology and management.

Measures

In order to measure the variables under investigation, a number of instruments commonly used in previous research were employed. Specifically, the dimensions of the dark tetrad of personality were assessed using the Short Dark Tetrad Questionnaire (SD4, Paulhus et al., 2020), the trait of mental toughness was assessed using the Mental Toughness Questionnaire (MTQ18, Clough et al., 2002), while bullying aggression and bullying victimisation were assessed using the Negative Acts Questionnaire Revised (NAQ-R, Einarsen et al., 2009), which was administered twice and with different instructions to assess these two different criteria.

To the best of our knowledge, none of these instruments had previously been translated and adapted into Portuguese. Therefore, for the purposes of this study, a Portuguese version, parallel to the original English form, was created following the guidelines of Brislin (1970). Accordingly, in a first phase, the original English version was translated into Portuguese, then the lexical and grammatical correspondence of the items was assessed by the research team and re-assessed by two external researchers experienced in the psychological assessment of the variables under investigation. Overall, it was found that all items and corresponding rating scales were considered clear and appropriate for the context and target population under study, thus supporting their content validity. In a second phase, the Portuguese versions of all scales were back-translated into English by a bilingual translator already familiar with this method. Comparison of the back-translation with the original scales indicates their similarity, i.e., consistency and equivalence in English and Portuguese.

Upon completion of the translation process, a pilot study was conducted with the participation of two students of the target population to obtain their feedback on the clarity of the scale instructions and rating scales, as well as the ease of understanding of all items (Vogt et al., 2004). Consistently, each item was considered to be clear, and no major difficulties were reported in understanding its meaning, as well as the rating scales and

corresponding instructions, supporting the face validity of the instruments and their appropriateness for data collection with university students in the Portuguese context (Vogt et al., 2004).

Dark Tetrad

As mentioned, this variable was measured using the 28-item Short Dark Tetrad Questionnaire (SD4, Paulhus et al., 2020). This instrument evaluates the four dimensions of the dark tetrad, i.e., Machiavellianism, narcissism, psychopathy and everyday sadism. An item example for Machiavellianism is “It's not wise to let people know your secrets”, for narcissism is “People see me as a natural leader”, for psychopathy is “People often say I'm out of control”, and for everyday sadism is “Watching a fist-fight excites me”. All items were answered by participants using a 5-point Likert scale, where 1 = *Strongly Disagree* and 5 = *Strongly Agree*. In terms of the psychometric characteristics of this instrument, Paulhus and colleagues (2020) reported evidence supporting its tetra dimensionality, as well as rather acceptable levels of internal consistency, assessed through Cronbach alfa estimates, being of $\alpha = .76$ for the dimension of machiavellianism; $\alpha = .80$ for narcissism; $\alpha = .80$ for psychopathy; and lastly $\alpha = .81$ for everyday sadism.

In order to assess the construct validity of this instrument, an exploratory factor analysis was conducted due to the relatively small sample size ($N = 366$). The Bartlett sphericity test reached statistical significance [$\chi^2_{(378)} = 3155,84, p < .001$] and the KMO reached a value of .816, supporting the factorability of the data and the appropriateness of the sample for the intended analysis (Pituch & Stevens, 2016). Both the Kaiser and Scree test criteria indicated the retention of four components, consistent with the theoretical framework of this instrument, corresponding to the four dark dimensions of personality. After applying an oblimin rotation (to allow for the expected covariance between the four latent constructs), the obtained item statistics showed a clear and adequate pattern of loadings, in which each item loaded adequately on the respective component, according to the recommended standards (Pituch & Stevens, 2016; Tabachnick & Fidell, 2019). In the retained solution, the items of Machiavellianism showed loadings between .37 and .76, the items of narcissism showed loadings between .54 and .85, the items of psychopathy showed loadings between .48 and .74, while the items of everyday sadism showed loadings between .51 and .75.

Finally, reliability was estimated by calculating the respective Cronbach's alphas, with respective values of $\alpha = .74$ for Machiavellianism, $\alpha = .75$ for psychopathy, $\alpha = .80$

for everyday sadism, and $\alpha = .81$ for narcissism, which is consistent with the estimate reported for the original version of this scale (Paulhus et al., 2020).

Mental toughness

This variable was assessed using the 18-item version of the Mental Toughness Questionnaire (Dagnall et al., 2019), an abbreviated version of the 48-item Mental Toughness Questionnaire (MTQ18, Clough et al., 2002). This short version includes three items for the assessment of the of mental toughness conceptual aspect of *challenge*, three items for the aspect of *commitment*, five items for the aspect of *control* and seven items for the aspect of *confidence*. Some item examples include “I generally feel in control” for the dimension of *control*; “However bad things are, I usually feel they will work out positively in the end” for the dimension *challenge*; and “I usually speak my mind when I have something to say” for the dimension of *confidence*; and “I usually find it hard to summon enthusiasm for the tasks I have to do” for the dimension of *commitment*. These items are answered using a 5-point Likert scale, where 1 = *Strongly Disagree* e 5= *Strongly Agree*. Previous evidence has supported the adequacy of the psychometric properties of this scale in terms of its unidimensionality and adequate internal consistency (Brand et al., 2014, 2015; Dagnall et al., 2019).

In order to gather evidence of its construct validity, an exploratory factor analysis was conducted under the assumptions of sample adequacy and data factorability, since the KMO =.784 and Bartlett's test of sphericity [$\chi^2_{(153)} = 1516.64, p < .001$] reached statistical significance (Tabachnick & Fidell, 2019; Pituch & Stevens, 2016). Kaiser and scree test criteria suggested the retention of a single component, consistent with the theoretical framework of this instrument. Nevertheless, a set of eight items showed very low loadings ($< .40$) and were dropped from the analysis. Conversely, the remaining 10 items showed adequate loadings ranging from .75 to .41.

Finally, reliability was estimated by calculating the internal consistency of this 10-item scale, which yielded an alpha of .79.

Bullying victimization and aggression

Bullying victimization was measured using the short version of the Negative Acts Questionnaire - Revised (NAQ-R) (Einarsen et al., 2009) developed by Notelaers and colleagues (2018) by selecting 9 of the original scale composed by 22 items, while maintaining adequate scale validity and reliability (León-Pérez et al., 2019; Notelaers et

al., 2018). The 9 items that make up this brief instrument assess self-perceptions of bullying actions directed at the individual in the past six months. This unidimensional scale captures several bullying behaviours, including those related to person-focused bullying (3 items), task-focused bullying (3 items) and finally, bullying actions focused on physical intimidation (3 items). This short scale include the item “I was continuously criticized by my mistakes” for the dimension of bullying focused on the person; the item “Someone withholding information which affects your performance” for the dimension of bullying focused on the task; and lastly, the item “Being shouted at or being the target of spontaneous anger” for the dimension of bullying focused on physical intimidation. Participants provided their scores using a 5-point Likert scale where 1 = *Never* e 5= *Daily*. Previous research has supported the unidimensionality of this scale as well as its adequate internal consistency, reporting alphas ranging from $\alpha = .87$ and $\alpha = .85$ (León-Pérez et al., 2019; Notelaers et al., 2018).

In order to measure bullying aggression, the previous scale items and instructions were reformulated, following the same procedure adopted in previous studies (Notelaers et al., 2010, 2018), to allow study’s participants to report, anonymously, in each degree they exhibit bullying behaviours during the last six months. These items include: “I continuously criticized someone because of their mistakes” for the dimension bullying focused on the person; “I withhold information which affected someone’s performance” for the dimension bullying focused on the task; and “I shouted at someone or made them a target of my spontaneous anger” for the dimension bullying focused on physical intimidation.

In terms of validity and dimensionality, the scores obtained from this instrument reflecting individual perceptions of bullying victimisation (9 items) and aggression (9 items), a total of 18 items, were subjected to exploratory factor analysis to test whether respondents were able to empirically discriminate between the constructs of bullying aggression and victimisation. The results indicate that the sample is of a sufficient size and that the data showed sufficient factorability for the analysis to be performed, as the Bartlett sphericity test was statistically significant [$\chi^2_{(153)} = 2433,636, p < .001$] and the KMO reached a value of .879. As expected, the Kaiser and Scree of Cattell criteria supported the retention of the expected two-component solution. Each item showed adequate loading on its respective component, ranging from .43 to .81 for bullying victimisation and .42 to .80 for bullying aggression. Further analyses showed that this

instrument had adequate levels of internal consistency for each dimension, which were .86 and .80 for bullying victimisation and aggression, respectively.

Results

In order to test the hypothesized model, the two step approach of Anderson and Gerbing (1988) was adopted. Thus, in a first step, the measurement model was assessed separately and prior to the estimation of the path model in order to strengthen the theory test under conditions of adequate construct validity. Given that the sample size ($N = 366$) was insufficient to use confirmatory factor analysis to assess the respective measurement model, which implied the estimation of 50 different parameters (Kline, 2005, 2016), exploratory factor analysis was used as a feasible alternative to gather the required evidence of convergent and discriminant validity of all measures of the variables in the model (i.e. Machiavellianism, narcissism, psychopathy, everyday sadism, mental toughness, bullying aggression and bullying victimisation).

Using principal component analysis and oblimin rotation (i.e. to account for potential interrelationships between the factors, as theoretically assumed), a seven-component solution emerged, covering all the constructs under investigation and accounting for 45.9% of the total item variance. As shown in Table 1, all items loaded appropriately on the respective component, with low cross-loadings and a higher loading on the respective component, thus allowing their assignment to the respective construct. These results support the adequate construct validity and discriminability of all the constructs analysed, allowing further testing of the hypothesised model. A summary of the main results of this analysis is presented in Table 1.

Table 1

Component loadings from principal component analysis of variables under study, using oblimin rotation.

<i>Scale / items</i>	C1	C2	C3	C4	C5	C6	C7
<i>Bullying Victimization</i>							
8. Sofri crítica persistente pelos meus erros.	.81	.06	.04	.06	.03	.02	.04
4. Sofri de insultos ou ofensas à minha pessoa, atitudes ou vida privada.	.76	.01	.02	.05	.06	.09	-.08
7. Nas minhas tentativas de aproximação fui ignorado/a ou sofri reações ofensivas.	.74	-.08	-.06	.01	.01	-.06	-.03
6. Lembram-me constantemente dos meus erros ou lapsos.	.73	-.00	-.03	.04	-.02	-.07	.04
9. Fui vítima de piadas por parte de pessoas com as quais não me dou bem.	.71	.02	.02	.02	.04	.12	-.02
5. Gritaram comigo ou fui alvo de ataque(s) de raiva.	.65	.11	-.02	-.01	-.04	.02	.08
3. Fui ignorado/a ou excluído/a.	.64	-.16	.01	.04	-.07	.01	-.02

1. Alguém reteve informação que afetou negativamente o meu desempenho.	.48	.06	.11	.05	-.16	.10	.09
2. Foram espalhados comentários negativos ou rumores sobre mim.	.44	.11	.18	-.00	-.02	.29	.13

Narcissism

5. Tenho qualidades excepcionais.	.00	.77	.02	-.03	.15	-.00	-.07
6. É muito provável que me destaque numa determinada área.	.12	.69	.01	-.04	.16	-.10	-.01
4. Independentemente da opinião dos outros, sei que sou especial.	-.10	.66	.07	.04	.11	.05	.03
2. Tenho um talento especial para convencer os outros.	.01	.66	.01	.11	-.03	-.01	.09
1. As pessoas veem-me como um/a líder nato/a.	-.04	.62	.02	-.08	.08	.06	-.00
7. Gosto de mostrar o quão bem-sucedido/a sou.	.08	.60	-.14	.08	-.16	.01	-.08
3. Sem mim, as atividades de grupo não têm a mesma piada.	-.02	.58	.06	.10	.04	.00	.17

Everyday sadism

5. Algumas pessoas merecem sofrer.	.06	.03	-.74	-.04	-.18	-.07	.03
2. Gosto realmente de filmes e vídeo jogos violentos.	-.02	-.10	-.65	.21	.10	-.04	.06
6. Já disse/escrevi coisas maldosas nas redes sociais só por diversão.	-.02	.07	-.62	-.09	-.12	.20	-.06
3. Acho engraçado ver os idiotas espalharem-se ao comprido.	-.12	-.02	-.62	.08	.02	.02	.18
1. Assistir a uma luta (agressão física) entusiasma-me.	.01	-.13	-.59	.18	.11	.09	.25
4. Gosto de assistir a desportos violentos.	-.02	-.13	-.55	.21	.21	.04	.22
7. Sei como magoar as pessoas usando apenas palavras.	.01	.25	-.45	.08	-.04	.10	.12

Machiavellianism

4. Devo manter-me discreto/a, se quiser levar a minha avante.	.10	-.13	-.06	.71	.04	-.04	-.04
3. Devo evitar criar conflitos com as outras pessoas, porque elas podem vir a ser úteis no futuro.	.03	-.06	-.06	.70	.01	.06	-.04
5. Por as situações a meu favor requer planeamento.	.05	-.02	-.01	.69	.08	-.01	.04
1. Não é inteligente deixar os outros conhecerem os meus segredos.	.09	.00	-.03	.52	-.04	-.01	-.06
7. Adoro quando consigo ter sucesso através de um plano hábil e engenhoso.	.01	.32	-.16	.52	-.11	-.01	-.05
2. Devo esforçar-me para ter as pessoas importantes do meu lado.	.01	.12	.05	.51	.05	-.02	-.04
6. Usar elogios é uma boa forma de pôr as pessoas do meu lado.	-.14	.20	-.19	.37	-.12	.13	-.01

Mental toughness

4. Geralmente lido bem com os problemas que surgem.	-.05	.13	-.02	-.07	.66	-.01	.10
1. Tendo a manter-me calmo, mesmo sob elevada pressão.	-.03	-.03	.03	.08	.63	-.06	-.01
14. Por pior que estejam as coisas, tendo a sentir que tudo vai acabar por correr bem.	-.13	.09	.16	.09	.61	-.07	.26
16. Tenho dificuldade em ficar tranquilo/a.	-.08	-.04	.01	.06	.60	-.01	-.02
15. Geralmente procuro olhar para o lado positivo da vida.	-.12	.19	.25	.13	.55	.02	.20
13. Em geral, sou capaz de reagir rapidamente quando acontece algo inesperado.	-.01	.13	.11	-.05	.53	.02	.07
10. Raramente perco o controlo.	-.10	-.03	-.14	.03	.49	-.06	-.22
5. Normalmente sinto que sou uma pessoa muito válida/competente.	-.05	.39	.13	.04	.48	.03	.02

17. Frequentemente tenho dificuldade em “puxar pela cabeça” quando estou cansado/a.	.15	.15	-.24	-.22	.45	-.08	-.11
12. Quando me sinto cansado/a tenho dificuldade em continuar com o que tenho em mãos.	.09	.09	-.11	-.24	.42	-.00	-.09

Bullying aggression

2. Espalhei comentários negativos ou rumores sobre alguém.	-.15	-.04	.07	-.03	-.04	.72	.11
3. Ignorei ou excluí alguém.	.00	-.02	-.01	.03	.19	.72	-.11
4. Insultei ou ofendi a maneira de ser, as atitudes ou vida privada de alguém.	.03	-.03	-.08	.05	.09	.68	.03
8. Critiquei persistentemente alguém pelos seus erros.	.06	-.04	-.03	-.09	-.01	.67	.01
7. Ignorei ou ofendi alguém quando se tentou aproximar de mim.	.22	-.08	-.15	-.08	.14	.62	-.10
9. Fiz piadas com alguém com quem não me dou bem.	-.11	.12	-.04	.02	-.10	.60	.02
1. Retive informação que afetou negativamente o desempenho de outrem.	.22	.01	-.01	.05	-.04	.54	.09
5. Gritei com, ou fiz de alguém alvo do meu ataque de raiva.	.11	.07	.04	.01	-.12	.52	.02
6. Lembrei constantemente alguém dos seus erros ou lapsos.	.08	-.02	-.00	.04	-.10	.43	-.05

Psychopathy

3. Já me meti em mais brigas do que a maioria das pessoas da minha idade e sexo.	.02	.02	-.09	-.13	.04	-.02	.71
5. Por vezes meto-me em situações perigosas.	.04	-.02	-.17	.08	.05	-.02	.69
2. Tendo a desafiar as autoridades e/ou as suas regras.	-.02	.07	-.04	.02	-.08	-.02	.64
4. Já tive problemas com a lei.	.07	-.16	-.01	.00	.29	.07	.59
6. As pessoas dizem-me frequentemente que não me consigo conter.	.04	.06	-.06	-.08	-.20	.13	.58
7. As pessoas que se metem comigo arrependem-se sempre.	.04	.25	-.22	-.06	.11	-.04	.51
1. Tenho a tendência para agir antes de pensar.	.01	.05	.01	-.07	-.38	.03	.49

Notes. C1 = Bullying victimization, C2 = Narcissism, C3= Everyday Sadism, C4= Machiavellianism, C5= Mental Toughness, C6= Bullying Aggression, C7= Psychopathy.

Following the assessment of the measurement model, the applicable statistical assumptions were checked in order to proceed with the testing of the hypothesised model. In assessing normality, it was observed that the distributions of the psychopathy and everyday sadism, as well as the bullying aggression and bullying victimisation variables showed levels of standardised skewness that exceeded the recommended standards for a normal distribution (i.e. the standardised value of skewness was greater than 2 and the value of kurtosis was greater than 5 (Kendall & Stuart, 1963)). These positively skewed data distributions were expected for the dark traits of personality due to its lower prevalence, as well as because of its negative meaning and potential participants' reluctance in disclose relatively high scores in respective items (Branson & Cornell, 2009). Similarly, such asymmetric distributions are also expected for bullying aggression and victimisation due to their lower frequency compared to socially positive behaviours

and related phenomena in the social environment of higher education, but also due to the potential reluctance of participants to openly report these phenomena even under anonymity conditions, especially those who actually perpetrated bullying aggression behaviours (Notelaers et al., 2018).

To overcome these violations of the normality assumption, the recommendations of Tabachnick and Fidell (2019) were followed and the respective variables were transformed accordingly. As noted by Rasmussen and Dunlap (1991), parametric analysis of transformed data is superior in preserving statistical power compared to parametric analysis of raw data or even regarding the alternative procedure of using nonparametric analyses.

For everyday sadism, the obtained values of standardised skewness and kurtosis were, respectively, $z = 3.27$ and $z = -1.85$, respectively. Therefore, this variable was transformed to correct for this deviation from a normal distribution using the square root transformation of the raw values of this variable, as instructed by Tabachnick and Fidell (2019). After transformation, the skewness value of $z = 1.16$ and the kurtosis value of $z = 3.50$ indicated its effectiveness in making the distribution approximately normal. For psychopathy, the initial standardised values of skewness and kurtosis were $z = 6.77$ and $z = 3.01$ respectively, also indicating the need for transformation. In this case a logarithmic transformation was applied, resulting in standardised scores of $z = 1.35$ for skewness and $z = 2.62$ for kurtosis. The bullying variables showed more severe deviations from a normal distribution, especially in the case of bullying aggression with a standardised skewness value of $z = 23.29$ and a kurtosis value of $z = 52.15$. None of the recommended transformations (square root, logarithmic and inverse) were able to reduce these deviations to acceptable levels. In these more extreme cases of deviation, Tabachnick and Fidell (2019) recommend, as a last resort strategy, trichotomizing the variable values in such a way that the middle category contains half of the cases and the other two categories are formed by 25% of the lower and upper cases. After trichotomizing the variable of bullying aggression, the deviations in both skewness and kurtosis were suppressed, resulting in standardised scores of $z = 0$ and $z = 3.88$ respectively. Finally, for bullying victimisation, the corresponding distribution of raw scores was $z = 14.08$ for skewness and $z = 14.23$ for kurtosis, requiring an inverse transformation that brought the skewness and kurtosis values to acceptable levels given the cutoffs adopted, particularly a standardised skewness of $z = 2.05$ and a kurtosis of $z = 4.07$.

As there were no violations of the remaining statistical assumptions (e.g. linearity, absence of extreme values or outliers), the zero-order Pearson correlations between the variables studied were calculated and are presented in Table 2.

Table 2
Descriptive statistics and zero-order Pearson correlations between the variables under study

Variable	M	SD	1	2	3	4	5	6	7	8	9
1. Sex	--	--	--								
2. Age	22.19	6.17	.01	--							
3. Year of course	2.17	1.19	-.06	.25***	--						
4. Mental toughness	3.28	0.59	-.19***	.23***	.18**	--					
5. Machiavellianism	3.39	0.64	-.31***	-.15**	-.04	-.04	--				
6. Narcissism	3.00	0.75	-.01	.06	-.01	.36***	.22***	--			
7. Psychopathy_Lg	0.23	0.14	-.10	-.04	-.05	-.05	.09	.21**	--		
8. Everyday Sadism_Sqrt	1.44	0.29	-.43***	-.19***	-.01	-.02	.38***	.08	.40***	--	
9. Bullying Victim_Inverse	1.30	0.23	.05	-.16**	.02	-.23***	.11*	.03	.17**	.10*	--
10. Bullying Aggression_Tri	2.00	0.71	-.02	-.14**	.04	-.18***	.14**	.11*	.20***	.21**	.41***

Notes. $N = 366$. Males were coded as 0 and females as 1. Psychopathy_Lg = Logarithmic transformation of the primary variable, Sadism_Sqrt = Square root of the primary variable, Bullying Victim_Inverse = inverse transformation of the original variable, Bullying Aggression_Tri = trichotomisation of the original variable. * $p < .05$, ** $p < .01$, *** $p < .001$.

As shown, in the majority of cases the observed correlations between the focal variables examined were consistent with the formulated hypothesis, i.e., Machiavellianism produced a positive and weak but significant correlation with bullying aggression and victimisation, consistent with H1a and H1b, respectively. The trait of narcissism showed a positive correlation with bullying aggression, as postulated by H2a, while everyday sadism and psychopathy both showed positive associations with bullying aggression and victimisation, as predicted by the corresponding hypotheses (i.e. H3a, H3b and H4a, H4b). Finally, as expected, mental toughness showed a negative correlation with bullying victimisation, as predicted by H5b.

However, some of the correlations obtained were not in line with respective expectations. Specifically, narcissism has a null association with bullying victimisation ($r = .03$, *ns*), contrary to H2b, which assumed a positive and significant association between these constructs, while mental toughness has a negative and significant association ($r = -.18$, $p < .001$) with bullying aggression, contrary to H5a, which assumed a positive link between these constructs.

In light of these findings and given the observed interrelationships between some of the predictors, including narcissism and mental toughness, as well as the moderate correlation between the two criterion variables ($r = .41, p < .001$), a path analysis was conducted to test the proposed hypothesised model and allow a more accurate assessment of the independent effects of each predictor on the focal criteria. All applicable statistical assumptions were tested, including the adequacy of the sample size, by checking the corresponding sample size/free parameter to estimate ratio (Jackson, 2003), which is $366/19 = 19.3$ in the current study. Consequently, the achieved ratio is very close to the upper limit of the recommended interval (i.e., between 20/1 and 10/1) for model testing and significantly higher than 5/1, which represents a condition where the statistical precision of the results may be questionable (Jackson, 2003; Kline, 2016; Kyriazos, 2018). The recommendations of Viswesvaran et al. (2014) regarding the importance of accounting for measurement error in psychological research were also followed, and the estimates were corrected for the attenuation effects to avoid the sub-estimation of the corresponding effect sizes. Consequently, the path analysis was conducted with latent constructs and single indicators, with the values of the latent-to-manifest paths fixed at the square root of their internal consistency reliability estimates. To account for measurement error, the effect of random error on each variable was indicated as 1 minus the reliability, multiplied by the variance of the respective scale (Podsakoff et al., 1986).

The model fit statistics indicated that the hypothesized model displays an excellent fit to the data ($\chi^2 [9, N = 366] = 10.322, p = .325$; GFI = .992; CFI = .996; RMSEA = .020; SRMR = .0358), as we can primarily observe in the non-significant chi-squared test and, complementarily, regarding the excellent values of all considered indexes (Hu & Bentler, 1999; Kline, 2016). The corresponding parameter estimates obtained are presented in Figure 2.

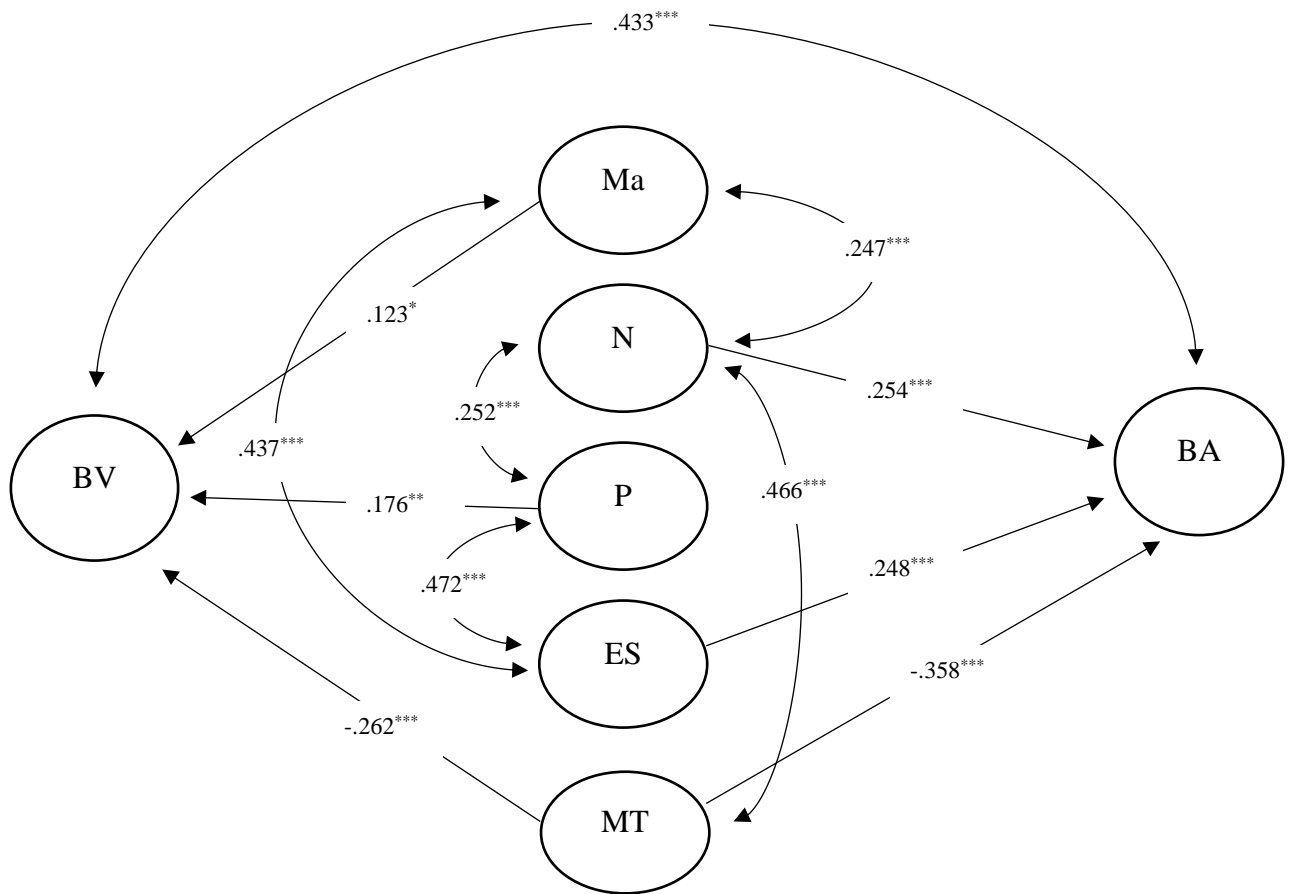


Figure 2. Path model. Standardized parameter estimates are displayed, non-significant parameters were suppressed. *Note.* Ma = Machiavellianism, N = Narcissism, P = Psychopathy, ES = Everyday Sadism, MT = Mental toughness, BV = Bullying Victimization, BA = Bullying Aggression. * $p < .05$, ** $p < .01$, *** $p < .001$.

This integrated analysis shows that the majority of the hypotheses tested are supported by the estimated effects. For example, Machiavellianism was found to have a weak but positive and significant effect on bullying victimisation, supporting H1b. Similarly, narcissism was found to have a positive effect on bullying aggression, supporting H3a. Psychopathy also showed a positive effect on bullying victimisation, as hypothesised by H2b. Conversely, everyday sadism had a positive effect on bullying aggression, supporting H4a. However, as previously highlighted, some of the hypothesised relationships did not occur and some were even the opposite of what was expected. In particular, Machiavellianism did not show a significant relationship with bullying aggression, failing to support H1a, and narcissism did not show a relationship with bullying victimisation, failing to support H3b. Similarly, the evidence did not support H2a and H4b, as psychopathy had no effect on bullying aggression and everyday sadism had no effect on bullying victimisation when the effects of the other predictors were taken into account. Finally, mental toughness was found to have a negative effect

on bullying victimisation, supporting H5b. However, its effect on bullying aggression was also negative, contrary to the positive effect hypothesised by H5a.

Discussion

This study examined the role of dark personality traits and mental toughness in predicting the extent to which college students engage in bullying behaviour or become victims of this phenomenon. This study aimed to make theoretical and applied contributions to the literature by examining the joint role of these individual characteristics in triggering, aggravating or mitigating these criteria.

The main findings indicated a pattern of positive associations between some dimensions of the Dark Tetrad (i.e., Machiavellianism, psychopathy, everyday sadism, and narcissism) and the criteria of bullying aggression and bullying victimisation. These results suggest that the dark dimensions of personality are indeed relevant in predicting these phenomena and support their inclusion in explanatory models of bullying in the higher education context. Nevertheless, the results also imply that this picture is somewhat more nuanced than previously postulated, given that none of the Dark Tetrad components showed a positive relationship with both bullying victimisation and aggression.

Previous literature has demonstrated that when samples of adults in work settings are considered, Machiavellianism predicts bullying victimisation (Fernández-del-Río et al., 2021; Linton & Power, 2013). Furthermore, when the focus is placed on adolescents in the educational setting, all dark triad traits impact positively on bullying victimization, with psychopathy exhibiting the strongest association (Pineda et al., 2022; Sehar & Fatima, 2016). In this study, conducted with a sample of young adults in the university setting, only Machiavellianism and psychopathy showed a positive relationship with bullying victimisation. These findings are consistent with the theoretical framework that has been previously established. Individuals who exhibit Machiavellian tendencies are more likely to victimize themselves in order to manipulate others. Those who score higher on the psychopathic scale are more impulsive and careless of the consequences of their actions, making them more susceptible to being bullied by others.

Similarly, the effects of the dark tetrad on bullying aggression are examined in the context of previous studies. For instance, Baughman and colleagues (2012) found that psychopathy, Machiavellianism, and narcissism were positively correlated with bullying aggression. Likewise, Van Geel and colleagues (2017) identified a positive relationship

between Machiavellianism, psychopathy, sadism, and bullying aggression. However, the results of the multivariate analysis using the current sample, taking all the dimensions of the dark tetrad, indicated that only narcissism and everyday sadism were significant and non-redundant predictors of bullying aggression. Both effects were postulated in H3a and H4a, as theoretically expected, given that narcissistic individuals are more self-absorbed and prone to aggression when their ego is perceived to be under threat, whereas sadistic individuals derive pleasure from witnessing the suffering of others, making them more likely to engage in bullying behaviours.

However, no significant relationship was found between Machiavellianism, psychopathy and bullying aggression, which is inconsistent with previous research when considering their bivariate relationships. These findings may suggest that Narcissism and everyday sadism may represent the central drivers of bullying behaviour, while the other effects regarding psychopathy and Machiavellianism may represent spurious effects due to the shared variance between the Dark Tetrad dimensions. Nevertheless, further research is needed before definitive conclusions can be drawn. Yet, these findings should be interpreted with caution, as they may not accurately reflect the true negative effects of Machiavellianism and psychopathy, as hypothesised in H1a and H2a. Indeed, the effects of Machiavellianism may be masked by the use of self-report questionnaires, as individuals who score high on this scale tend to be more cautious about disclosing and sharing information in order to protect their reputation and avoid losing control in social relationships (Baughman et al., 2012). It is possible that a similar concealment effect occurs in psychopathy. However, this may be due to a different reason, namely the absence or low level of empathy of the individual who scores high on this dimension (Baughman et al., 2012). This may result in them failing to recognise their potentially negative actions towards others as unjustified, even when they are bullying others. Consequently, further research using observed ratings of the Dark Tetrad dimensions is needed to fully address these issues.

As noted, with regard to mental toughness, its effects on both criteria under study remain largely unexplored in previous studies. For bullying aggression, the results did not support H5a, which postulates a positive relationship between mental toughness and this criterion. Such a positive relationship has been hypothesised on the basis of previous claims that mentally tough individuals would be more susceptible to commit these hostile acts (Strycharczyk & Clough, 2018), not necessarily because they intend to do harm, but

because they tend to dismiss other people's opinions, because they are also more objectively focused on their goals and will do what is necessary to achieve them, even if it may sometimes hurt other people. In fact, this study found a significant but small effect of mental toughness on bullying aggression, which may be due to the cultural context in which this study was developed. According to Hofstede's country comparison tool (Hofstede, 2001, 2017), Portugal scores 31 on motivation for achievement and success, which shows that in the Portuguese context, polarisation is not well considered and excessive competitiveness is not valued. As this sample is composed of Portuguese students in higher education, the inherent cultural environment may not be as polarised as in other countries, leading to a more valued collective success, and therefore more mentally tough individuals in this cultural context may strive for collective consensus and success over individual and highly competitive achievements. Therefore, future research should examine different cultural contexts to examine whether mentally tough individuals will refrain from bullying for cultural reasons.

The results obtained were consistent with hypothesis H5b, in line with previous findings (Strycharczyk & Clough, 2018), and supported a negative effect of mental toughness on bullying victimisation. This suggests that individuals with high levels of mental toughness are less likely to be bullied because they are more resilient to the negative effects of such behaviour, and less likely to perceive or admit to being bullied or threatened by others.

In conclusion, the results obtained with a sample of young Portuguese adults in an academic setting indicate that narcissism and everyday sadism are significant and non-redundant antecedents of bullying aggression, while Machiavellianism and psychopathy have a significant impact on bullying victimisation. Furthermore, results showed that mental toughness is a negative antecedent of both bullying aggression and victimisation. These findings suggest that psychoeducational interventions designed to mitigate bullying aggression may be effective in reducing aggressive competitiveness, individualism, and promoting constructive and collaborating social behaviours. Some intervention approaches might involve extending social contact and re-categorising groups of students who interact under competitive and conflictual norms, by encouraging greater collaboration and group assignments rather than the reliance on individual assessments (Aronson & Aronson, 2018; Gökkaya, 2017). This approach may be particularly urgent and effective with students that score higher in everyday sadism,

narcissism, and lower in mental toughness. Meanwhile, a psychoeducational intervention that educates individuals about what bullying aggression and victimisation are and then helps these individuals understand ways to cope with these phenomena (Gökkaya, 2017). This approach may be particularly urgent and effective for students who score higher on Machiavellianism and psychopathy, as they will learn and develop better coping mechanisms.

Despite these contributions, this study has some limitations. One limitation concerns the use of self-ratings for measuring the variables under study, which is known to be prone to biases such as social desirability, especially when dealing with psychological constructs with a negative social valence (Abernethy, 2015; Althubaiti, 2016). A second limitation stems from the use of a single sample with a Portuguese cultural background, which precludes the generalisation of these findings to other higher education cultural settings.

Further research relying on international and multicultural samples with observer ratings (e.g. from peers and teachers) is required before a comprehensive understanding can be reached regarding the impact of dark tetrad and mental toughness traits on university students' bullying aggression and victimisation. Future studies should continue to focus on the personality antecedents of bullying behaviour in young adults, as the majority of existing research pertains to adolescents (Jegade et al., 2022; Tani et al., 2003). Personality traits continue to evolve throughout the lifespan, up to early and middle adulthood (Srivastava et al., 2003). These changes are particularly pronounced in adolescents, who face a variety of developmental challenges and life transitions (Van Dijk et al., 2020). Consequently, focusing on young adults, where personality changes are comparatively less severe than in adolescents, will provide a more stable and accurate examination of how personality (and more established traits) may predict or prevent bullying behaviour. It is also important to examine more closely the complementary role of the positive aspects of personality and other positive traits, such as core-self evaluations and trait emotional intelligence, as predictors of bullying and cyberbullying (N. Rodrigues & Rebelo, 2021; P. Rodrigues & Rodrigues, 2023; van Geel et al., 2017). Another crucial area for future investigation is the role of situational variables. Despite the lack of research in this area, it can be hypothesised that factors such as academic success, aggressive competitiveness, individualism and a sense of academic community may influence bullying behaviour. This will enable a more comprehensive understanding

of the factors that contribute to bullying behaviour, which in turn will facilitate the development of effective strategies to mitigate and minimise bullying in higher education.

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Appendices

Appendix 1: University of Madeira Data Protection and Ethical Committee Approvals

Appendix 2: Investigation Questionnaire



PARECER

Na qualidade de Encarregado de Proteção de Dados da Universidade da Madeira, e após análise pela equipa de proteção de dados desta instituição, do Projeto de Investigação “**Tétrade negra de personalidade, robustez mental e comportamentos de bullying no ensino superior**” é nosso parecer que o mesmo cumpre com o Regulamento Geral da Proteção de Dados.

Funchal, 19 de dezembro de 2022

Encarregado de Proteção de Dados

Assinado por: **Filipa Isabel Sousa Mota**
Num. de Identificação: 10993715
Data: 2022.12.19 12:14:05+00'00'



PARECER Nº 55 A/CEUMA/2023, JANEIRO

Sobre o pedido de apreciação pela Comissão de Ética da UMa do projeto de investigação: “Tétrade negra de personalidade, robustez mental e comportamentos de bullying no ensino superior”

A - RELATÓRIO

A apreciação do processo referente ao Pedido nº 55 A de 2023, respeita ao estudo intitulado: “Tétrade negra de personalidade, robustez mental e comportamentos de bullying no ensino superior”, no âmbito do projeto de dissertação do Mestrado, pelo aluno Hélder Tomé Pestana Jesus, orientado pelo Professor Doutor Nuno Miguel Vieira Rodrigues, Professor auxiliar da Universidade da Madeira; Faculdade de Artes e Humanidades; Departamento de Psicologia.

O pedido em análise é constituído pelos **seguintes documentos**:

- a) Formulário de Pedido de Parecer à CEUMA;
- b) Consentimento Informado, Esclarecido e Livre para Participação em estudos de Investigação;
- c) Parecer favorável emitido pelo Encarregado de Proteção de Dados da Universidade da Madeira;
- d) Declaração do orientador;

O estudo com **data** de início prevista para 01/11/2022 e de conclusão a 27/5/2023, tem como **objetivo** analisar a relação entre as dimensões da téttrade negra e os comportamentos de bullying e a perceção de ser agente e vítima de comportamentos de bullying em alunos do ensino superior. Além dos constructos a avaliar, serão recolhidas variáveis sociodemográficas relevantes para a caracterização da amostra, designadamente o género, a idade, o ciclo de estudos e respetivo curso.

, tendo como **população alvo**, estudantes do ensino superior da Universidade da Madeira, pertencentes a diversas áreas e cursos desta mesma instituição com uma amostra de 200/300 participantes.

, **visando** perceber a importância da robustez mental como preditor de vários resultados no contexto educativo, incluindo no ensino superior

A **participação** é voluntária e os **dados** são recolhidos através da aplicação de um questionário em formato papel e lápis que será administrado em contexto de sala de aula, quando devidamente autorizado. O questionário possui uma duração média de 20 minutos. sendo incluído consentimento informado e salvaguarda de recusa

O consentimento informado, esclarecido e livre para participação em estudos de investigação seguiu a minuta da Universidade da Madeira, e tem o parecer positivo do Encarregado de Proteção de Dados.

A equipa não prevê a **recolha** de quaisquer dados sensíveis. É garantida a **confidencialidade** dos dados recolhidos, de caráter anónimo, serão de acesso do investigador principal e do seu orientador na realização das análises necessárias. Estes serão armazenados na base de dados SPSS e serão guardados até a conclusão da dissertação e da publicação dos seus resultados.

A **divulgação** dos resultados será realizada, tendo por base as estatísticas médias/globais da amostra, em formato de artigo científico ou como apresentação em congressos da especialidade.

B - CONCLUSÃO

Depois de analisados todos os documentos apensos a este processo, a CEUMa deliberou emitir de parecer favorável, condicionado a retificação da data de início do estudo.

Aprovado por unanimidade, em reunião do dia 16 de fevereiro de 2023.

Funchal e Universidade da Madeira, 16 de fevereiro de 2023

A Presidente da CEUMa

Assinado por: **Liliana Maria Gonçalves Rodrigues de Góis**
Num. de Identificação: 10084399
Data: 2023.02.17 14:03:12+00'00'



Professora Doutora Liliana Maria Gonçalves Rodrigues de Góis

Appendix 2: Investigation Questionnaire

Este questionário (duração 12 min) insere-se num estudo acerca das características dos estudantes do ensino superior e da sua influência nos seus comportamentos individuais em contexto académico.

Lê com atenção as instruções de resposta. É importante para este estudo que respondas a todas as questões. **Nota que todas as respostas que te solicitamos são anónimas e confidenciais.**

A tua colaboração é decisiva para este estudo. Muito obrigado!

Declaração de consentimento informado (Participante)

Declaro ter lido e compreendido o foco principal deste estudo e o contexto no qual este se desenvolveu. Foi-me garantida a possibilidade de, em qualquer altura, recusar participar sem qualquer tipo de consequências. Desta forma, aceito participar neste estudo e permito a utilização dos dados, que de forma voluntária forneço, confiando que apenas serão utilizados para fins científicos e publicações que dele decorram e com as garantias de confidencialidade e anonimato que me são dadas pelos investigadores*.

Sim, declaro



PARTE I - Dados Demográficos e Académicos

Sexo: M F **Idade:** _____

Estatuto Socioeconómico:

Reduzido Abaixo da Média Médio Acima da Média Elevado

Universidade: UMA Outra: Qual _____

Curso: _____ **Ano do Curso:** _____

PARTE II – Características Individuais

RM (Clough e colaboradores,2002)

Indica em que grau concordas ou discordas de cada uma das seguintes afirmações relativamente à tua forma de ser habitualmente. Descreve-te como te vês no presente e não como gostarias de ser no futuro. Nota que não existem respostas certas ou erradas e que as mesmas são anónimas. É importante para este estudo que respondas honestamente.

1	2	3	4	5
Discordo fortemente	Discordo	Não concordo nem discordo	Concordo	Concordo fortemente

1. Tendo a manter-me calmo, mesmo sob elevada pressão.	1	2	3	4	5
2. Tenho a tendência para me preocupar com as coisas antes de elas acontecerem.	1	2	3	4	5
3. Normalmente sinto dificuldade em entusiasmar-me com as tarefas que tenho de realizar.	1	2	3	4	5
4. Geralmente lido bem com os problemas que surgem.	1	2	3	4	5
5. Normalmente sinto que sou uma pessoa muito válida/competente.	1	2	3	4	5
6. “Simplesmente não saber por onde começar” é algo que geralmente sinto quando me são dadas várias coisas para fazer ao mesmo tempo.	1	2	3	4	5
7. Normalmente quando tenho de dizer algo, digo verdadeiramente o que penso.	1	2	3	4	5
8. Quando cometo erros, geralmente fico preocupado/a com isso nos dias seguintes.	1	2	3	4	5
9. Nas discussões tendo a ceder, mesmo quando tenho fortes convicções sobre as coisas.	1	2	3	4	5
10. Raramente perco o controlo.	1	2	3	4	5
11. No geral, gostava que a minha vida fosse mais previsível.	1	2	3	4	5
12. Quando me sinto cansado/a tenho dificuldade em continuar com o que tenho em mãos.	1	2	3	4	5
13. Em geral, sou capaz de reagir rapidamente quando acontece algo inesperado.	1	2	3	4	5
14. Por pior que estejam as coisas, tendo a sentir que tudo vai acabar por correr bem.	1	2	3	4	5
15. Geralmente procuro olhar para o lado positivo da vida.	1	2	3	4	5
16. Tenho dificuldade em ficar tranquilo/a.	1	2	3	4	5
17. Frequentemente tenho dificuldade em “puxar pela cabeça” quando estou cansado/a.	1	2	3	4	5
18. Se acho que alguém está errado não tenho receio de discutir isso com ele/a.	1	2	3	4	5

As afirmações seguintes remetem para um conjunto de várias características individuais. Indica em que grau concorda ou discorda de cada uma das afirmações, utilizando uma das seguintes opções de resposta. Nota que não existem respostas certas ou erradas e que as mesmas são anónimas. É importante para este estudo que respondas honestamente a todos os itens.

1	2	3	4	5
Discordo totalmente	Discordo	Não concordo nem discordo	Concordo	Concordo totalmente

“Engenhoso/a”					
1. Não é inteligente deixar os outros conhecerem os meus segredos.	1	2	3	4	5
2. Devo esforçar-me para ter as pessoas importantes do meu lado.	1	2	3	4	5
3. Devo evitar criar conflitos com as outras pessoas, porque elas podem vir a ser úteis no futuro.	1	2	3	4	5
4. Devo manter-me discreto/a, se quiser levar a minha avante.	1	2	3	4	5
5. Por as situações a meu favor requer planeamento.	1	2	3	4	5
6. Usar elogios é uma boa forma de pôr as pessoas do meu lado.	1	2	3	4	5
7. Adoro quando consigo ter sucesso através de um plano hábil e engenhoso.	1	2	3	4	5
“Especial”					
1. As pessoas veem-me como um/a líder nato/a.	1	2	3	4	5
2. Tenho um talento especial para convencer os outros.	1	2	3	4	5
3. Sem mim, as atividades de grupo não têm a mesma piada.	1	2	3	4	5
4. Independentemente da opinião dos outros, sei que sou especial.	1	2	3	4	5
5. Tenho qualidades excepcionais.	1	2	3	4	5
6. É muito provável que me destaque numa determinada área.	1	2	3	4	5
7. Gosto de mostrar o quão bem-sucedido/a sou.	1	2	3	4	5
“Rebelde”					
1. Tenho a tendência para agir antes de pensar.	1	2	3	4	5
2. Tendo a desafiar as autoridades e/ou as suas regras.	1	2	3	4	5
3. Já me meti em mais brigas do que a maioria das pessoas da minha idade e sexo.	1	2	3	4	5
4. Já tive problemas com a lei.	1	2	3	4	5
5. Por vezes meto-me em situações perigosas.	1	2	3	4	5
6. As pessoas dizem-me frequentemente que não me consigo conter.	1	2	3	4	5
7. As pessoas que se metem comigo arrependem-se sempre.	1	2	3	4	5
“Duro/a”					
1. Assistir a uma luta (agressão física) entusiasma-me.	1	2	3	4	5
2. Gosto realmente de filmes e vídeo jogos violentos.	1	2	3	4	5

3. Acho engraçado ver os idiotas espalharem-se ao comprido.	1	2	3	4	5
4. Gosto de assistir a desportos violentos.	1	2	3	4	5
5. Algumas pessoas merecem sofrer.	1	2	3	4	5
6. Já disse/escrevi coisas maldosas nas redes sociais só por diversão.	1	2	3	4	5
7. Sei como magoar as pessoas usando apenas palavras.	1	2	3	4	5

SNAQ-R Einarsen e colaboradores (2009)

Indica com que frequência **foste exposto/a, nos últimos 6 meses**, às situações retratadas nas afirmações seguintes, utilizando uma das seguintes opções de resposta. Por favor, responde com honestidade.

1	2	3	4	5	6	7
Nunca	De vez em quando	Uma vez por mês	Duas ou três vezes por mês	Uma vez à seman a	Duas vezes ou mais à semana	Diariament e

No meu contexto académico...

1. Alguém reteve informação que afetou negativamente o meu desempenho.	1	2	3	4	5	6	7
2. Foram espalhados comentários negativos ou rumores sobre mim.	1	2	3	4	5	6	7
3. Fui ignorado/a ou excluído/a.	1	2	3	4	5	6	7
4. Sofri de insultos ou ofensas à minha pessoa, atitudes ou vida privada.	1	2	3	4	5	6	7
5. Gritaram comigo ou fui alvo de ataque(s) de raiva.	1	2	3	4	5	6	7
6. Lembram-me constantemente dos meus erros ou lapsos.	1	2	3	4	5	6	7
7. Nas minhas tentativas de aproximação fui ignorado/a ou sofri reações ofensivas.	1	2	3	4	5	6	7
8. Sofri crítica persistente pelos meus erros.	1	2	3	4	5	6	7
9. Fui vítima de piadas por parte de pessoas com as quais não me dou bem.	1	2	3	4	5	6	7

SNAQ-S Einarsen e colaboradores (2009)

Indica com que frequência **realizaste** as ações retratadas nas afirmações seguintes **nos últimos 6 meses**. Recorda que todas as tuas respostas são anónimas e não serão tratadas individualmente, mas apenas em termos da amostra global. É importante para este estudo que respondas com honestidade.

1	2	3	4	5	6	7
Nunca	De vez em quando	Uma vez por mês	Duas ou três vezes por mês	Uma vez à semana	Duas vezes ou mais à semana	Diariamente

No meu contexto académico...

1. Retive informação que afetou negativamente o desempenho de outrem.	1	2	3	4	5	6	7
2. Espalhei comentários negativos ou rumores sobre alguém.	1	2	3	4	5	6	7
3. Ignorei ou excluí alguém.	1	2	3	4	5	6	7
4. Insultei ou ofendi a maneira de ser, as atitudes ou vida privada de alguém.	1	2	3	4	5	6	7
5. Gritei com, ou fiz de alguém alvo do meu ataque de raiva.	1	2	3	4	5	6	7
6. Lembrei constantemente alguém dos seus erros ou lapsos.	1	2	3	4	5	6	7
7. Ignorei ou ofendi alguém quando se tentou aproximar de mim.	1	2	3	4	5	6	7
8. Critiquei persistentemente alguém pelos seus erros.	1	2	3	4	5	6	7
9. Fiz piadas com alguém com quem não me dou bem.	1	2	3	4	5	6	7

FIM

Muito obrigado pelo teu tempo e colaboração.