

The Relation between the Dark Triad and Social Media Addiction, with the Moderating Role of Social Anxiety in Young People

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Abstract

Introduction: Nowadays, social media has become an indispensable part of people's lives, especially for young people. Their importance grows day by day (Murat Kirik, 2015). Thus, the use of social media can become problematic in some cases, such as extreme and compulsive preoccupation about them, strong motivation and excessive time used on social media (Andreassen & Pallesen, 2014). Improper use of social media can be associated with the Dark Triad, which consists of a cluster of negative personality traits, as narcissism, Machiavellianism, and psychopathy (Paulhus & Williams, 2002).

Objectives: This study proposes the examination of the relation between the Dark Triad and social media addiction, as well as the role of social anxiety in the same relationship.

Methods: This study includes the use of: The Short Dark Triad Scale (Jones & Paulhus, 2014), the Liebowitz Social Anxiety Scale (Liebowitz, 1987) and an adaptation of The Bergen Facebook Addiction Scale (Andreassen et al., 2012), in order to measure social media addiction. These were applied to 290 young participants, with the condition that they used at least one social media platform.

Results: The results suggest that between the three negative personality traits and the social media addiction there are significant positive relations, although these are somewhat weak. Thus narcissistic, psychopathic or Machiavellian personality traits can cause an increase in the degree of social media addiction. As to the relation between social anxiety and addiction to social media, is a very strong one, which makes it easier for young people with social anxiety to become addicted. However, the results show that social anxiety does not bring any additional effects to the interaction between the Dark Triad and social media addiction, breaking the conditions of analysis moderation.

Conclusions: Future studies should take into consideration a more homogenous distribution of the participants, as well as accounting for external variables in the examination of the excessive use of social media.

Keywords: narcissism, Machiavellianism, psychopathy, personality, social media addiction, social anxiety, Facebook

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I. Introduction

Social networks have gained absolute importance in people's lives with the advent of the Internet and technology. This is primarily due to low costs, easy access and speed of accessing new information in any field (Murat Kirik, 2015). Young people in particular believe that the Internet is a facilitator of human life and work. Thus, social networks have become an indispensable part in the century of communication. Through social networks, people can interact easily and quickly, they can share photos, texts, voice messages or even data and documents. The efficiency of social networks has become indispensable for most people, and their importance in our lives increases day by day (op. cit., 2015). Because of this, the use of social media can become problematic in some cases. Addiction to social media means excessive and compulsive concern about them, strong motivation and a lot of time spent to use social networks (Andreassen & Pallesen, 2014), which can even lead to interpersonal problems and low engagement in the couple's relationship, family or professional life.

A negative personality hallmark that can increase social media addiction is the Dark Triad, a concept introduced by Paulhus and Williams (2002). The Dark Triad comprises three prominent personality traits: Machiavellianism, subclinical narcissism, and subclinical psychopathy. These three constructs form the Dark Triad, but they are not equivalent, having in common only the scores for agreeableness, resulting from the correlation with the Big Five scale (op. cit., 2002). Narcissism and psychopathy are both associated as clinical disorders (Wastell & Booth, 2003), but Machiavellianism is a latent dimensional construct (Beller & Bosse, 2017). Subclinical or normal forms of narcissism, Machiavellianism, and psychopathy are interrelated, but have some distinct characteristics, which is why they cannot be studied separately (Jones & Paulhus, 2009). However, the three constructs, although not equivalent, form a single dark personality trait (Jonason & Webster, 2010). Narcissism is seen by people as more desirable than the other two components of the triad. They consider Machiavellianism and psychopathy to be undesirable traits, which may harm the individual and their relations with others (Rauthmann & Kolar, 2012).

Psychopathy is represented by some general characteristics, such as the high degree of impulsivity and the search for sensations (Paulhus & Williams, 2002). Psychopaths are self-centered, have an antisocial lifestyle, show grandiosity and irresponsibility. They

have superficial emotions, can be deceiving and violate social norms, without remorse for what they do (Hare & Neumann, 2009). At the same time, psychopaths have extremely low anxiety and empathy (Paulhus & Williams, 2002). The deficit of empathy and fear, as well as the antisocial and violent behavior of these individuals, can lead to antisocial and criminal acts. Also, factors that lead to such behaviors are their need to have control and power over other people, lack of inhibitions and the belief that they are right (Hare, 1991).

Machiavellianism was named after the great Italian Renaissance Niccoló Machiavelli, who wrote a book entitled "Il Principe", in which he advised high lords or kings to resort to cruel, immoral acts. Thus, Machiavellianism has become a construct that represents a duplicitous interpersonal style, aimed at personal gains and immorality (Muris, Merckelbach, Otgaar & Meijer, 2017). Machiavellians believe that manipulation is the most important to be successful in life, so they behave accordingly, while being extremely cynical and uninvolved (Jones & Paulhus, 2009). They use manipulation tactics for personal purposes, considering that they must be open to any kind of strategy. Thus, they resort to lying or flattering other people (op. cit., 2009). Machiavellian people can be charismatic leaders, due to their manipulative power. They can show self-confidence even when situations are uncertain, thus carefully creating the desired image (Deluga, 2001). They can easily lie to their friends, cheat or betray loved ones (Jones & Paulhus, 2009).

Narcissistic people often consider themselves superior to others, they are arrogant and envious. They exaggerate their sense of self-importance, so they become boastful. They consider it important to present themselves in a favorable way, because they feel the need for excessive attention and admiration. If they are not treated with admiration, individuals who have this personality disorder lose control, become angry and irritable. They demand the attention of those around them and their participation in this game of theirs, because they consider to deserve everything (American Psychiatric Association, 2013). The main element of narcissism is its grandeur, being associated with the excessive need for admiration, self-presentation in a favorable way, arrogant self-confidence and ambition. However, negative feelings can also arise, such as the vulnerability of self-esteem and self-respect. Grandiose narcissism reflects traits of grandeur, dominance and aggression. In contrast, vulnerable narcissism presents elements of insecurity, uselessness and inadequacy, as

well as negative affects that lead to feelings of incompetence (Miller et al., 2013).

Internet addiction has not yet been introduced in the Diagnostic and Statistical Manual of Mental Disorders as a Psychiatric Disorder (American Psychiatric Association, 2013), although a large proportion of young people and adolescents overuse both social networks and online games. The online environment includes a wide variety of social networks, such as Facebook, Twitter, Instagram, LinkedIn, WhatsApp, Messenger, etc. The problematic use of social media is associated with antisocial traits in many articles in the specialized literature, being discovered that there is a direct relation between the features of the Dark Triad and social media addiction (Kircaburun et al., 2018). Social media is an environment in which people with narcissistic traits can meet their psychological needs, such as the need to be admired and receive constant positive feedback on physical appearance (Lopes & Yu, 2017), Machiavellians can feel more comfortable in carrying out activities on the Internet, rather than communicating with other people face to face (Kircaburun & Griffiths, 2018), and psychopathy has been positively correlated with a multitude of deviant behaviors on social networks, such as creating conflicts, provoking discussions that offer erroneous information to create chaos, and violation of rules or regulations (Lopes & Yu, 2017).

For narcissists, addiction comes from the fact that they want to regulate their emotions and stabilize their self-esteem. Psychopaths resort to addictive behaviors due to disinhibition, which favors the use of substances in relation to psychopathy (Jauk & Dieterich, 2019). Narcissists who suffer from a mental disorder, such as depression or anxiety, lose self-confidence and become unable to present themselves favorably to others (Brailovskaia, Margraf, & Köllner, 2019). Because of this, these people tend to take refuge in the online environment, which increases the risk of becoming dependent on social networks (Campbell et al., 2004). Narcissism was associated with the use of social networks rather than with the use of games on the Internet, because on social platforms individuals can present themselves favorably, so they could receive admiration from other users (Casale & Fioravanti, 2018). Narcissism is positively correlated with dependence on social networks, because networks such as Facebook, Instagram or Snapchat offer people with narcissistic traits a space to feed the ego (Andreassen et al., 2017). They use these social networks to receive constant feedback from others, especially positive ones.

Psychopaths may become so attentive and interested in the deviant behaviors mentioned above, that they become dependent on social networks as they represent a favorable environment for these activities (Chung et al., 2019). Machiavellians and psychopaths follow or investigate others on social networks, especially Facebook (Stiff, 2019), and are prone to manifesting antisocial behaviors in the online environment, such as behaviors that lead to conflict and actions against the law (Lopes & Yu, 2017). Machivellism has led to intense follow-up by other users, especially for gossip approval, but in the case of people with psychopathic traits, the Facebook investigation has been linked to intolerance to uncertainty (Stiff, 2019). Psychopaths manifest a tendency to have absolute power and control in any situation, so they are eager to follow and investigate the problems of others or what other people post on their profiles, just to satisfy this desire to maintain power (op. cit., 2019). Social networks such as Facebook, Instagram, Snapchat, are platforms that facilitate deviant behaviors (Withers et al., 2017).

At the same time, social anxiety is a factor that can be associated with social media addiction, because socially anxious people are unable to communicate face to face with other people (American Psychiatric Association, 2013). For these individuals, social networks are a favorable environment in which they can feel free to express themselves, without feeling afraid that they will be judged or that virtual friends will have a negative opinion about them. To avoid feelings of fear and anxiety caused by real-life social interactions, they spend more time connected on social networks (McKenna & Bargh, 2000). Thus, the social environment on the Internet has an important role in the lives of people who have difficulty in interacting socially. Those with a high level of social anxiety certainly prefer virtual interactions in which they communicate through text messages, rather than face-to-face communication (op. cit., 2000). This is due to the feeling of anonymity that gives them the confidence to continue to communicate and reduces the concern for belonging (ibidem, 2000). Although the engagement in interactions on social networks ensures a favorable environment for the social interactions of people with anxiety, some studies claim that excessive use of these social networks leads to increased levels of social anxiety (Schimmenti & Caretti, 2017). Attractiveness, ease of communication and physical interactions are not always available to all people, especially for adolescents, who have an age-specific behavior through

which they want to discover their personality (McKenna, Green & Gleason, 2002). For them, connecting to a social network can be a tool to overcome their situation in real life (McKenna and Bargh, 2000; McKenna, Green & Gleason, 2002). Among important limitations of previous studies stands sampling. If the sample had been larger and randomly selected to a greater degree, the results would have been more generalizable (Ruggieri et al., 2020). Another important limitation of the studies is self-reporting measurement, which could lead to desirability issues in terms of reporting the use of social networks, in the context in which participants are adolescents. They could have given distorted results, as shame about the behavior they adopt is critical at this age (op. cit., 2020).

From the point of view of the theoretical and practical implications, the studied topic is a very important one. It is very useful for young people in Romania to know the implications of their own personality traits in relation to social media addiction, including for those who have traits of social anxiety. So, if these young people were informed about how their personality type affected them in terms of excessive internet use, implicitly by the use of social networks, they could take measures to prevent becoming addicted to social networks. This topic is an important one, especially in the current conditions, when social networks have started to represent an extension of us, of people, beyond a simple means of communication in the online environment. It is also important for future researchers to know the results of the current study, in order to make it easier for them to outline their ideas for future studies in this field. They should be very careful about the limits of the study in order to be able to improve the results they get.

The outcomes of this study contribute to the vast growth of research on dark personality traits, by introducing data from an Eastern European sample. Also, the novelty of the study starts from researching together the influence of two different variables, in the same context. To our knowledge, the Dark Triad and social anxiety have been addressed together in very few studies, especially in the context of their involvement in leading to addictions to social networks. Also, in the studies that measured these concepts, among the dark personality traits, mainly narcissism was studied in relation to other variables, so in this study we aimed not to neglect any of the three features of the Dark Triad.

The target of the study was to find possible associations between the Dark Triad and social media addiction, but important criteria were the implications of

social anxiety in this relation. Given the above, we can see that there is evidence and motivation to investigate the link between the three negative personality traits of the Dark Triad (Machiavellianism, narcissism and psychopathy) and social media addiction, and to discover the impact of social anxiety on the relation between the two mentioned variables. The aim of this study is to determine the type of relation between the Dark Triad and social media addiction, as well as the role of social anxiety in this relation. To achieve this goal, two objectives have been set.

II. Method

Objectives of the present study

O1. Establishing the type of relation between the Dark Triad and social media addiction, among young people.

O2. Identifying the type of relation between the Dark Triad, social media addiction and social anxiety.

Hypotheses of the present study

H1. It is assumed that high scores of the Dark Triad determine a higher level of social media addiction.

H2. It is assumed that there is a positive correlation between narcissism and social media addiction.

H3. It is assumed that there is a positive correlation between Machiavellianism and social media addiction.

H4. It is assumed that there is a positive correlation between psychopathy and social media addiction.

H5. It is assumed that there is a positive correlation between social anxiety and social media addiction.

H6. It is assumed that social anxiety moderates the relationship between the Dark Triad and social media addiction.

Participants and procedure

The study involved 290 young people aged between 20 and 35 years, $M = 22.50$, $SD = 3.471$. Participants come from both urban (64.5%) and rural (35.5%) environments. Of these, 228 are female (78.6%) and 62 are male (21.4%). Regarding the level of education, 189 graduated high school (65.2%), 7 people completed a post-secondary school (2.4%), 81 have higher education (27.9%), and 13 have postgraduate studies (4.5%).

Participants were contacted online through social networks: Facebook, Instagram, WhatsApp and

LinkedIn. They were given a short presentation of the study and were invited to participate by completing a set of questionnaires. The first section of the online form contained the informed consent. The participants were assured that the data provided were confidential and would be used exclusively for research purposes. By clicking the “agreement” button, young people offered their consent to participate. Out of the total of 300 participants contacted, only 290 responses were noted as complete (96.6%). The questionnaire was made in a Google form, which was then distributed through social media for a month. This form consisted of five sections, and at the beginning of each section, the instruction corresponding to each scale was presented. The first section included the description of the study, the inclusion criteria, the informed consent to the agreement to process participants’ data. By checking the “agreement” button, the participants consented to have their data processed for academic purposes only, without revealing their identity or any other sensitive information. The section also included the demographic data of the participants, such as age, gender, background and level of education. The following sections included the items of the three scales that measured the studied variables. In the second section was included The Short Dark Triad Scale (Jones & Paulhus, 2014), which consists of nine items for each of the three components of the Dark Triad (narcissism, Machiavellianism and psychopathy). Each item was measured on a Likert scale from 1 to 5, where 1 represents Strong Disagreement and 5 stands for Strong Agreement. The third section of the Google forms included items from the Liebowitz Social Anxiety Scale (Liebowitz, 1987). The scale includes 24 items that were also scored on a Likert scale, this time from 0 to 3, where 0 = Not at all and 3 = Severe. The fourth section included the 6 items of the questionnaire that measures social media addiction (Bergen Social Media Addiction Scale – BSMAS). This scale of social media addiction is an extension of the Bergen Facebook Addiction Scale – BFAS (Andreassen, Torsheim, Brunborg & Pallesen, 2012), in that the same items are extracted, replacing the term “Facebook” with “social media”. They were as well scored on a Likert scale from 1 to 5, as in the case of the Short Dark Triad Scale. The last section of the form expressed gratitude towards the participants who completed the questionnaire. After devising the Google form, it was distributed on the following social networks: Facebook, Instagram, WhatsApp and LinkedIn, by private message and also posted publicly on various groups created on social media or on the participants’ personal profile on Facebook and Instagram.

The inclusion criteria were the age of the participants, who must be between 20 and 35 years old and also of Romanian nationality. An important inclusion criterion was that participants use at least one social network (e.g., Facebook, Instagram, LinkedIn, WhatsApp, Snapchat). Exclusion criteria applied to participants under the age of 20 or over the age of 35.

The targeted population was chosen by sampling on quotes, a non-random method. Sampling on quotes involves the formulation of mutually exclusive criteria according to which the sample is formed, but the inclusion of participants is not random, but depending on the access of participants and their willingness to engage in the study.

Design

The present study has a non-experimental, explanatory design, because its purpose is to explain the various associations between the researched variables. The variables studied are the Dark Triad, with the three negative personality traits that compose it (narcissism, Machiavellianism and psychopathy), social media addiction and social anxiety. Also, the design is non-experimental, as the data was collected at a single point in time. The Dark Triad is the independent variable, social media addiction being the dependent variable, and social anxiety the moderating variable. All three variables are measured on an interval-to-ratio scale.

Instruments

The Dark Triad. The Short Dark Triad Scale (Jones & Paulhus, 2014) was used to measure the Dark Triad. The tool includes 27 items that measure the three negative personality traits: narcissism, Machiavellianism and psychopathy. Each negative feature is assigned 9 items with five Likert scale response options, from 1 (Strongly Disagree/ Does not characterize me at all) to 5 (Total Agreement/ Almost always characterizes me), indicating the extent to which participants agree with every statement. Example of items: “I like to use my intelligence to manipulate to get what I want” (Machiavellianism); “I know I’m special, because everyone keeps telling me this” (narcissism); “People who cause me problems always end up regretting” (psychopathy). The analysis of internal consistency obtained a Cronbach Alpha coefficient $\alpha = .71$ for narcissism, $\alpha = .77$ for Machiavellianism and $\alpha = .80$ for psychopathy. The questionnaire was translated into Romanian by D. Iliescu, but was not calibrated on Romanian population. In the present study, the global Cronbach Alpha internal consistency index has a value

of $\alpha = .805$, with 95% CI: 0.77-0.83. This confidence interval is a narrow one, which indicates that the internal consistency index is accurate. The internal consistency index for Machiavellianism is $\alpha = .76$, for narcissism it is $\alpha = .74$, and for psychopathy it is $\alpha = .76$.

Social anxiety. The Liebowitz Social Anxiety Scale was used to measure social anxiety (Liebowitz, 1987). This scale consists of two factors: performance anxiety and social anxiety. The scale measures both the level of fear, or anxiety that comes from certain situations, and the level of avoidance of those situations. The Liebowitz Social Anxiety Scale consists of 24 items that are scored on a four-step Likert scale, from 0 (Not at all, for fear or anxiety level/ Never, for avoidance level), to 3 (Severe, for fear or anxiety level/ Usually, for the level of avoidance). Example item: "Talking to people in positions of authority". The Cronbach's alpha coefficient for Liebowitz scale items was .94 for the non-clinical sample (Fresco et al., 2001) and .95 for the clinical sample (Baker, Heinrichs, Kim, & Hofmann, 2002; Fresco et al., 2001). The questionnaire was translated into Romanian by A. Cosmoiu, but it was not validated on Romanian population. In the present study, the Cronbach Alpha internal consistency index of social anxiety has a value of $\alpha = .93$, with CI 95%: 0.92-0.94. The confidence interval is extremely narrow, which indicates that the internal consistency index is very accurate.

Social media addiction. The Bergen Social Media Addiction Scale (BSMAS) was used to measure social media addiction, which we mentioned is an adaptation of the Bergen Facebook Addiction Scale – BFAS (Andreassen et al., 2012). The items being taken from the Bergen Facebook Addiction Scale (Andreassen, et al., 2012), and replacing the term "Facebook" with "social media", the scale refers to all social networks, not specifically to Facebook. The tool comprises of 6 items, with five Likert scale response options, from 1 (Strongly Disagree) to 5 (Total Agreement), indicating the extent to which participants agree with each statement. Each of the six items corresponds to an element of dependence: salience, mood swings, tolerance, withdrawal, conflict and recidivism (Andreassen et al., 2012). Example item: "How often during the last year have you spent time thinking about a social network or planning to use a social network? ". The Cronbach alpha coefficient for the items of the social media addiction scale is $\alpha = .83$. The questionnaire was translated into Romanian by F. B. Șerban-Drăgan, but was not validated on Romanian population. In the present study, the internal consistency

index Cronbach Alpha for items describing social media addiction has a value of $\alpha = .79$, with CI 95%: 0.75-0.83.

III. Research results

Descriptive Statistics Analysis

The mean scores obtained by the participants in the three questionnaires, as well as the correlations between the analyzed variables are presented in Table 1.

Table 1. Descriptive statistics – mean scores, standard deviations and correlations between variables

	M	SD	1	2	3	4	5	6	7	8
1. Age	22.5	3.47	1							
2. Gender	-	-	.14	1						
3. Dark Triad	74.49	13.27	-.14*	-.09	1					
4. Machiavellianism	26.37	6.55	-.15**	-.12*	.88**	1				
5. Narcissism	26.71	4.41	-.12*	.01	.71**	.43**	1			
6. Psychopathy	21.41	5.11	-.07	-.10	.84**	.63**	.43**	1		
7. Social media addiction	15.36	5.48	-.20**	.20**	.17**	.14*	.08	.18**	1	
8. Social Anxiety	30.04	15.48	-.01	.003	.05	-.01	.06	.12*	.34**	1

Notes: M = mean, SD = standard deviation;
*. $p < .05$, **. $p < .01$

It can be observed that the mean level of the Dark Triad is extremely high, $M = 74.49$, $SD = 13.27$. The highest score was obtained in narcissism, $M = 26.71$, $SD = 4.41$, and the lowest was obtained in psychopathy, $M = 21.41$, $SD = 5.11$. Machiavellianism has an average level close to the average obtained for the variable Narcissism, having $M = 26.37$, $SD = 6.55$. Regarding the social media addiction, the mean score is relatively low, $M = 15.36$, $SD = 5.48$, and for social anxiety, the mean score is relatively high, $M = 30.04$, $SD = 15.48$.

Inferential Statistics Analysis

In order to test the hypotheses, the statistical analysis program IBM.SPSS.24 (IBM Corp, 2016) was used.

For the H1 hypothesis ('It is assumed that the high scores of the Dark Triad determine a higher level of social media addiction'), the Pearson Linear Correlation Test was applied to assess the association between the Dark Triad ($M = 74.49$, $SD = 13.27$) and social media addiction ($M = 15.36$, $SD = 5.48$). A statistically significant positive correlation was found between the two variables, $r = .17$, $r^2 = .02$, $p < .01$. The confidence interval limits (99%) are between .02 and .31.

To test the H2 hypothesis ('It is assumed that there is a positive correlation between narcissism and social media addiction'), the Pearson Linear Correlation Test was again used. A statistically

significant positive correlation was found between narcissism and social media addiction, $r = .08$, $r^2 = .006$, $p < .05$. The confidence interval limits (95%) are between .03 and .19.

The Pearson Linear Correlation Test was used too for testing the H3 hypothesis ('It is assumed that there is a positive correlation between Machiavellianism and social media addiction'),. Thus, between Machiavellianism ($M = 26.37$, $SD = 6.55$) and social media addiction was found a statistically significant positive correlation, $r = .14$, $r^2 = .01$, $p < .05$. The confidence interval limits (95%) are between .02 and .25.

To test the H4 hypothesis ('It is assumed that there is a positive correlation between psychopathy and social media addiction'), the Pearson Linear Correlation Test was also used. A statistically significant positive correlation was found between the variable psychopathy and social media addiction, $r = .18$, $r^2 = .03$, $p < .01$. The confidence interval limits (99%) are between .03 and .32.

The Pearson Linear Correlation Test was used to test the association between social media addiction and social anxiety ($M = 30.04$, $SD = 15.48$) (H5: 'It is assumed that there is a positive correlation between social anxiety and social media addiction'). A statistically significant positive correlation was found between social media addiction and social anxiety, $r = .34$, $r^2 = .11$, $p < .01$. The confidence interval limits (99%) are between .20 and .46.

To test the H6 hypothesis ('It is assumed that social anxiety moderates the relationship between the Dark Triad and social media addiction'), both the Pearson Linear Correlation Test was used to verify the moderation conditions, and the Hierarchical Regression Analysis, with which was performed the moderation. In order to perform the moderation analysis, two important conditions must be met. In this regard, we will analyze whether there is a significant correlation between independent variables (Machiavellianism, narcissism and psychopathy) and social anxiety, which is the moderating variable. Also, to verify the second condition, the Pearson linear correlation test will be performed, in order to test the association between the Dark Triad (narcissism, Machiavellianism and psychopathy) and social media addiction. The three independent variables, Machiavellianism, narcissism and psychopathy, must not correlate with social anxiety. There must be a statistically significant correlation $> .30$ between the Dark Triad (VI) and social media

addiction (VD), in order to be able to perform the moderation analysis.

The Pearson Linear Correlation Test was applied to test the association between the Dark Triad and social anxiety. A statistically insignificant positive correlation was found between the Dark Triad and social anxiety, $r = .05$, $r^2 = .002$, $p > .05$. The confidence interval limits (95%) are between -.06 and .16.

To verify the association between the Dark Triad (narcissism, Machiavellianism and psychopathy) and social media addiction, the Pearson Linear Correlation Test was used. A statistically significant positive correlation was found between the two variables, $r = .17$, $p < .05$.

The Pearson Linear Correlation Test was also used to test the association between the three features of the Dark Triad (Machiavellianism, narcissism, and psychopathy) and social anxiety. Thus, a statistically insignificant negative correlation was found between Machiavellianism and social anxiety, $r = -.01$, $r^2 = .00$, $p > .05$. The confidence interval limits (95%) are between -.12 and .10.

A statistically insignificant positive correlation was found between narcissism and social anxiety, $r = .06$, $r^2 = .00$, $p > .05$. The confidence interval limits (95%) are between -.05 and .17.

A statistically significant positive correlation was found between psychopathy and social anxiety, $r = .12$, $r^2 = .01$, $p < .05$. The confidence interval limits (95%) are between .00 and .23.

The correlations between the three negative personality traits of the Dark Triad and social anxiety are presented in Table 2.

Table 2. Inferential statistics – correlations between Dark Triad and social anxiety

Social Anxiety (Mo)	r	r ²	p
1. Machiavellianism	-.01	0.00	.76
2. Narcissism	.06	0.00	.31
3. Psychopathy	.12*	0.01	.03

Mo = moderating variable

*. $p < .05$, **. $p < .01$

It was tested whether social anxiety moderates the relationship between Machiavellianism and social media addiction. For this, moderation was performed with Hierarchical Regression Analysis.

The results indicate that Model 1 (without the interaction between Machiavellianism and social anxiety) is statistically significant, $F(2, 287) = 23.75$, $p = .00 < .01$. Model 2 (with the interaction between Machiavellianism and social anxiety) is statistically

significant, $F(3, 286) = 15.84, p = .00 < .01$. The interaction model (Model 2) does not bring significantly more variance, compared to Model 1. The interaction between Machiavellianism and social anxiety adds .00 to the separate predictors, the difference being statistically insignificant, $p = .69 (p > .05)$. Thus, there is no moderating effect between Machiavellianism and social media addiction.

The results of the moderation estimate for social anxiety in the relationship between Machiavellianism and social media addiction are presented in Table 3.

Table 3. Moderating estimate for social anxiety in the relationship between Machiavellianism and social media addiction

Model	df	F	p	R square change	Sig F change	Residual
1. Regression	2	23.75	.00	.14	.00	287
2. Regression	3	15.84	.00	.00	.69	286

The estimation results of the moderation for social anxiety in the relationship between narcissism and dependence on social networks are presented in Table 4.

Table 4. Moderating estimate for social anxiety in the relationship between narcissism and social media addiction

Model	df	F	p	R square change	Sig F change	Residual
1. Regression	2	20.15	.00	.12	.00	287
2. Regression	3	13.99	.00	.005	.20	286

It was tested whether social anxiety moderates the relationship between narcissism and social media addiction. For this, moderation was performed with Hierarchical Regression Analysis.

The results point out that Model 1 (without the interaction between narcissism and social anxiety) is statistically significant, $F(2, 287) = 20.15, p = .00 < .01$. Model 2 (with the interaction between narcissism and social anxiety) is statistically significant, $F(3, 286) = 13.99, p = .00 < .01$. The interaction model (model 2) does not bring significantly more variance compared to Model 1. The interaction between narcissism and social anxiety adds .005 compared to the separate predictors, the difference being statistically insignificant, $p = .20 (p > .05)$. Thus, there is no moderating effect between narcissism and social media addiction.

Table 5. Moderating estimate for social anxiety in the relationship between psychopathy and social media addiction

Model	df	F	p	R square change	Sig F change	Residual
1. Regression	2	22.94	.00	.13	.00	287
2. Regression	3	15.26	.00	.005	.83	286

The results of the moderation estimate for social anxiety in the relationship between psychopathy and social media addiction are presented in Table 5.

It was tested whether social anxiety moderates the relationship between psychopathy and social media addiction. For this, moderation was also performed with Hierarchical Regression Analysis.

The results indicate that Model 1 (without the interaction between psychopathy and social anxiety) is statistically significant, $F(2, 287) = 22.94, p = .00 < .01$. Model 2 (with the interaction between psychopathy and social anxiety) is statistically significant, $F(3, 286) = 15.26, p = .00 < .01$. The interaction model (Model 2) does not bring significantly more variance compared to model 1. The interaction between psychopathy and social anxiety adds .00 compared to the separate predictors, the difference being statistically insignificant, $p = .83 (p > .05)$. Thus, there is no moderating effect between psychopathy and social media addiction.

IV. Discussions

Psychological interpretation of results

A weak correlation was found between the Dark Triad and the social media addiction, with a low correlation coefficient ($r = .17$). The first hypothesis of the present study is confirmed, which means that the high scores of the Dark Triad determine a higher level of dependence on social networks. Thus, there is a significant positive relationship between the two variables, but the Dark Triad causes very little increase in the scores of social media addiction.

Hypothesis 2, according to which it is assumed that there is a positive correlation between narcissism and social media addiction, is confirmed, because a statistically significant positive correlation was found between the two variables ($r = .08, p < .05$). The relation is very weak, with a very low correlation coefficient. Thus, there is a positive relation between narcissism and social media addiction, but narcissism causes very little increase in the level of social media addiction.

A weak correlation was also found between Machiavellianism and social media addiction, with a low correlation coefficient ($r = .14$). The third hypothesis of the study is confirmed, which means that there is a statistically significant positive relation between Machiavellianism and social media addiction. Thus, there is a positive but discrete relation between the two variables, which leads to the idea that the increase in machiavellian scores

determines a very little increase in the level of social media addiction.

A weak correlation was found between psychopathy and social media addiction, with a low correlation coefficient ($r = .18$). The fourth hypothesis of the study is confirmed, which means that between psychopathy and social media addiction is a statistically significant positive relation. Thus, there is a positive but less differentiated relation between the two variables, leading to the idea that increasing scores for the psychopathy variable also causes a little increase in the level of social media addiction.

A good correlation was found between social anxiety and social media addiction, having an average correlation coefficient ($r = .34$). Thus, hypothesis 5, according to which there is a positive correlation between social anxiety and social media addiction, was confirmed. The results indicate that high scores of social anxiety lead to a higher level of social media addiction. Thus, there is a good relationship between the two variables, social anxiety causing an increase in the level of social media addiction.

The results of the moderation analyses performed by the hierarchical regression support the idea that social anxiety does not bring any additional effect in the relation between the Dark Triad and social media addiction. The research hypothesis was rejected, but this may be due to the conditions of the moderation analysis that were not met. The conditions that had to be observed are the following: the Dark Triad had to correlate significantly with social media addiction, and the correlation coefficient should be higher than .30. There must also be no correlation between the Dark Triad and social anxiety. The results of the current study show that there is a weak but significant correlation between the Dark Triad and social media addiction, with $r = .17$, which is less than .30, so it cannot be used for research purposes, the condition for moderation analysis being violated.

At the same time, the relationships between narcissism, Machiavellianism and social anxiety are statistically insignificant, which shows that there is no relationship between the two dependent variables and social anxiety. However, a weak correlation was found between psychopathy and social anxiety, but still positive and statistically significant. Thus, there is a discreet relationship between psychopathy and social anxiety, which leads to the fact that people who have a high score on the variable psychopathy, may have a relatively high score on social anxiety. The condition that there must be no correlation between the Dark

Triad and social anxiety has been breached, too. For these reasons, when the regression analysis was performed, although we had several groups accepted by the statistical analyses, the common variance of the two did not have a sufficient value not to be due to chance, so we considered that the results with an R^2 adjusted = .00 will not communicate accurate results. Because the interaction between narcissism, Machiavellianism, psychopathy and social anxiety did not add anything to the separate predictors, we found that there is no moderating effect, and social anxiety has no effect on the interaction between the Dark Triad and social media addiction.

The engagement in social media is not problematic in most cases, but there are exceptions of people who use these social media platforms excessively and compulsively (Andreassen, Pallesen & Griffiths, 2017). As shown, the present study examined the relationship between narcissism, psychopathy, Machiavellianism and social media addiction, but also the influence of social anxiety in this relationship. The results indicate that there are significant weak relationships between the three negative personality traits and social media addiction. Thus, high scores on narcissism can lead very little to the increase of social media addiction. Compared to other studies, in which narcissism is an important factor that largely contributes to social media addiction (op. cit., 2017), in the present study the results indicate that it does not contribute to a significant increase in social media addiction. Narcissistic people have a tendency to see themselves as superior to other users of social networks (Lopes & Yu, 2017), and their need to be admired is an important factor for their social media addiction. We know that narcissistic people use the internet to create an idealized self-image and to receive constant feedback from virtual friends. The image they create gives them great satisfaction and implicitly the positive assessments from others regarding their physical appearance and the activities they undertake contribute excessively to their social media addiction (Andreassen et al., 2017).

It can be considered that narcissistic people are prone to create dependence on the Internet and social networks, but other variables not yet studied contribute to this. A study was conducted on the influence of personality traits in Facebook addiction on a population of young students in southern India (Rajesh & Rangaiah, 2020), and the results are consistent with those of the present study. Narcissistic people mainly post selfies on social media to put themselves in a favorable perspective and to self-validate, but narcissism is not

always associated with Facebook addiction (op. cit., 2020). However, it should be noted that an important limitation of this study was that young people in India do not have much access to the internet, due to very poor socio-economic resources, and also because in collectivist cultures people maintain very close relationships with relatives, their social networks being used only to strengthen these already created relationships (ibidem, 2020).

We mentioned that Machiavellians and psychopaths can perform problematic actions when they use social media, such as behaviors that lead to conflict and actions against the law (Lopes & Yu, 2017). Machiavellism can lead to intense follow-up of other users, especially for gossip approval, but in the case of people with psychopathic traits, investigation on social media can be associated with uncertainty intolerance (Stiff, 2019). Psychopaths have a tendency to maintain absolute power and control in any situation, so they are eager to follow and investigate the problems of others or what other people post on their profiles, precisely to satisfy this desire to maintain power (op. cit., 2019).

There is a good positive relationship between social anxiety and social media addiction, which leads to the idea that young people who show symptoms of social anxiety can easily become dependent on social networks. Social anxiety implies the fear of communicating in public with other people, the fear of being face to face with them (Schlenker & Leary, 1982; Stein & Stein, 2008). They also feel unable to interact publicly, work in teams, feel ashamed, and panic sets in (Stein & Stein, 2008). They avoid public places, social interactions outside the family, because they feel an excessive fear of being negatively evaluated by those they come in contact with (American Psychiatric Association, 2013). Therefore, the social environment on the internet is a favorable place for people who have social anxiety. On social media they can interact with other people without fear (see above), they can also work online, they can even buy the necessary items for their home and family. As a result, we believe that socially anxious young people can easily become dependent on social networks. The problematic use of social networks comes from the fact that young people spend more time on the Internet to balance their mood, for emotional and cognitive regulation. They become addicted to social media, their anxiety to socialize traditionally, face to face with other people increasing (Schimmenti & Caretti, 2017).

Although both the negative personality traits of the Dark Triad and social anxiety have positive

relationships with social media addiction, these are not the only variables that contribute to the emergence and growth of social media addiction. Other unexplored factors that may influence social media addiction occur. The fact that there are positive, even though weak, relations between psychopathy and social anxiety has led to the (statistical) impossibility of social anxiety influencing the relationship between the Dark Triad and social media addiction. Young people who show symptoms of psychopathy feel the need to have control and power over others, have a lack of inhibitions and the belief that they are right (Hare, 1991). There are probably times in their lives when they are not listened to by those around them, or they do not have the control they want over something or over a person. In these moments, the psychopath's frustration can turn into anxiety, sometimes even social anxiety. Thus, the separate variables narcissism, Machiavellianism, psychopathy and social anxiety contribute to the increase of social media addiction, but the interaction between the Dark Triad and social anxiety brings nothing more than the separate variables in terms of social media addiction. So, it can be argued that social anxiety has no effect on the interaction between the Dark Triad and social media addiction.

Limitations and future directions

In the following section, some of the limitations of the present research will be exposed, so that in the future they can be addressed. We also encourage the approach of this topic of general interest, but especially for the observation of the tendencies that young people have in relation to social media. This online space is one that will be used in the future by more and more young people and teenagers in Romania, so it is important to study both the negative aspects and the positive ones that can influence their use of the Internet.

An important limitation that may have led to the influence of the results is that the sample size is small so that the results cannot be generalized to the entire population of Romania. At the same time, the sample consists predominantly of women (78.6%), which can also lead to potential bias in the results. Gender differences probably lead to problems of validity and fidelity of narcissism, Machiavellianism and psychopathy, so that hypotheses that there were positive relations between the Dark Triad and social media addiction, even if supported, showed very weak correlation results. These outcomes conveyed to the idea that there is an extremely frail connection between the Dark Triad and social media addiction.

Validity issues caused by gender differences may also refer to the internal validity of the scales used to measure the constructs. The Cronbach Alpha internal consistency index for the three measured variables is very accurate, the limits of the confidence intervals being very narrow. However, the initial statistical results for the internal consistency of the scales for measuring narcissism and psychopathy showed an index of consistency far too low to be used for research purposes. Therefore, items 11, 15 and 17 were excluded from the narcissism facet, and only one item was excluded from the facet that measures psychopathy, in order to return to a suitable internal consistency. The items were excluded because they had a negative valence and led to a lower internal consistency index.

Another limitation of the study is that other variables may appear in the prediction of social media addiction. Therefore, not only negative personality traits such as narcissism, Machiavellianism and psychopathy or social anxiety can lead to increased dependence on social media, but also other variables that are not studied in this research. For example, different personality traits in addition to those mentioned above, but also the cultural environment or even the motivation to use these networks on the internet, can lead to an increase or decrease in social media addiction. Factors such as the fact that in rural areas, some families still do not have access to the Internet, implicitly to social media, may appear. This may further show that regardless of the type of personality they have, some people cannot access these online platforms and cannot create such addictions. Although 35.5% of young participants from rural areas were included in this study, the inclusion criterion was the use of at least one social network, in daily life. This percentage cannot explain the situation of all people living in rural Romania, as these participants had been involved in the study precisely because they have access to the internet.

The relevant population was chosen by sampling on quotas, a non-random sampling method. The necessary criteria for the inclusion of participants in this study were met, but access to participants was based on their willingness to engage in the study. Thus, there was no method of randomly selecting participants, which could lead to changes in the presented results. At the same time, only self-reporting was used to measure the constructs, which could lead to dishonest responses from participants. The administration of the questionnaires was done online, so that participants could easily manipulate the answers, without being verified later. It is also possible that some of them did

not understand the meaning of some questions or did not give importance to the answers.

One other limitation that led to the rejection of the hypothesis that social anxiety is supposed to moderate the relation between the Dark Triad and social media addiction is that the conditions of moderation were not respected, as analyzed above.

The relation between the Dark Triad and social media addiction, studied on a more homogeneous distribution in terms of gender and age of participants, which takes into account the impact of other influences on social media addiction than social anxiety and using also other measures and instruments, would be an important task of research in the field of social psychology, which we recommend for future studies.

Another area of interest could be a comparative study between populations from different cultural-geographical regions, in order to see and compare the impact of negative personality traits and social anxiety on social media addiction.

At the same time, we recommend future studies to research more closely the variables in terms of gender differences. A study that would reveal the differences between men and women in terms of dependence on social media, the effects of dark traits from a gender perspective, but also how they manifest themselves differentiated by gender, would be a research of interest.

We also recommend a closer study of social anxiety and the effects on the relationship between the Dark Triad and social media addiction.

V. Conclusions

The main purpose of the current study was to determine what type of relation exists between the Dark Triad and social media addiction among young people in Romania, as well as the role of social anxiety in this connection. The sample chosen by a non-randomized method consisted of 290 young participants aged between 20 and 35 years, but who used at least one social network. Thus, we made sure that the participants met the inclusion conditions, but they also enrolled according to their willingness to get involved in the study. It is very important to mention that the study involved predominantly female subjects: out of the 290 participants, 228 were female (78.6%), only 21.4% representing male participants.

The data were collected through the aid of the three described questionnaires (The Short Dark Triad ,Jones & Paulhus, 2014; The Liebowitz Social Anxiety Scale, Liebowitz, 1987; The Bergen Social Media Addiction Scale, Andreassen, et al., 2012).

To assess the association between the Dark Triad and social media addiction, but also to see the level of association between anxiety and social media addiction, the Pearson Linear Correlation Test was applied. To verify whether social anxiety has an additional effect on the relation between the Dark Triad and social media addiction, both the Pearson Linear Correlation Test was applied to verify the conditions of moderation, and the Hierarchical Regression Analysis, with which moderation was achieved.

The results indicated that between the three negative personality traits that compose the Dark Triad and social media addiction there are significant positive relations, but quite weak. Thus, narcissistic, psychopathic or Machiavellian people can misuse social media. We can consider that psychopathy can lead to deviant behaviors on social media, and people with antisocial personality traits may use social media as a good environment in which to engage in deceptive strategies that help them achieve their social and interpersonal goals, despite the fact that they are antisocial (Fox & Rooney, 2015). Compared to other studies that have shown, that narcissism contributes greatly to increasing dependence on social media, the current study concludes that narcissism does not contribute to a significant increase in social media addiction ($r = .08$).

Regarding the relation between social anxiety and social media addiction, this is an extremely strong one, which leads to the fact that young people with social anxiety can easily become hooked on social networks. This is possible because anxious individuals are afraid to communicate in public with other people (Schlenker & Leary, 1982), are ashamed if they have face-to-face contact (Stein & Stein, 2008), so they prefer to take refuge in social media, on the Internet, where they feel safe (McKenna & Bargh, 2000).

Although there are positive relationships between these variables, they are not the only factors that affect and influence the onset of social media addiction, so the results indicated that social anxiety has no effect on the interaction between the Dark Triad and social media addiction, further studies being needed.

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