Direct and Indirect Relationships Between Dark Personality Traits and Loneliness Among Emerging Adults: The Mediating Role of Empathic Tendency

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Abstract

This study aimed to explore whether empathic tendency has a mediating role in the relationship between dark triad personalities (Machiavellianism, psychopathy, and narcissism) and loneliness. To that end, data were collected from 510 undergraduate emerging adults (367 men, 137 women). Dark Triad Dirty Dozen, Empathic Tendency Scale, and UCLA Loneliness Scale were used as measures. The research findings indicated negative significant correlations among Machiavellianism and psychopathy, and empathic tendency. According to another finding on the correlations among the variables, there were positive significant correlations among Machiavellianism and psychopathy, and loneliness. On the other hand, significant correlations could not be observed among narcissism and empathic tendency, and loneliness. As for the findings on the mediating role of empathic tendency in the relationship between dark triad personalities and loneliness, empathic tendency acted as a complete mediator in the relationship between Machiavellianism and loneliness and between psychopathy and loneliness. Yet, empathic tendency was not found to be mediating the relationship between narcissism and loneliness. Moreover, Machiavellianism and psychopathy predicted .32 of loneliness via empathic tendency. The findings obtained were discussed and interpreted in light of the literature.

INTRODUCTION

People going through the emerging adulthood need to establish close relationships. Finding a partner and/or an environment to which individual will feel belonged is considered a developmental task for the individual (Arnett, 2007). University stage offers some individuals the chance to enter different circles whereas it may cause them not to adapt to any circle and become lonely (Ümmet & Ekşi, 2016). It is therefore of critical importance that the predictors of loneliness should be investigated in helping develop intervention and prevention strategies. Recent studies suggest that loneliness are associated with dark personality traits (Jakobwitz & Egan, 2006; Masui, 2019) and empathy (Beadle et al., 2012; Calandri et al., 2021). Thus, addressing the concept of loneliness which is effective in mental health of emerging adults in this study will shed light to preventive studies to be performed for them in future.

There are increasingly more people who suffer from loneliness, and loneliness has become a public health issue in time due to its negative outcomes (Holwerda et al., 2016). Thus, there is a current attention to loneliness as a negative feeling which is present in any stage of everyone's life in any form, and recently, more research has been conducted on the matter (Jiao & Wang, 2018; Mahajan, 2013; Masui, 2019). Moreover, as suggested by Wright et al. (2006), for exploring all aspects of the concept of loneliness, it is deemed necessary to understand what factors could cause people to feel lonely and how people experience the loneliness.

According to Perlman and Peplau (1982), loneliness refers to the disagreement between social relations imagined by individual and their existing social relations. While loneliness represents being physically alone, it may also manifest itself as loneliness among the crowd. Thus, satisfaction felt by individual with relationships underlies loneliness (Buluş, 1997). Weis (1973) address loneliness as an undesirable experience and agonizing feeling that adversely affect individuals and as a subjective experience which is in interaction with socialization. In the literature, loneliness can be examined in two types: social and emotional loneliness (Weiss, 1973). Social loneliness means that individuals are not physically present alongside other people whereas emotional loneliness refers to lack of an emotional intimacy despite the presence of others around the individuals (Russell et al., 1984; Weiss, 1973).

As an undesirable and hurtful emotion, loneliness has several impacts on individuals (Rokach & Neto, 2005). According to Rokach (2004), individuals may be less productive and creative when they are lonely. Brehm et al. (2002) also suggest that lonely individuals can have difficulty in establishing relationships and quality of their existing relationship can be lowered. Loneliness may affect how individuals think, and individuals can exhibit dysfunctional behaviors when making decisions about their lives. Individuals who feel lonely may evaluate others negatively and become insensitive to what happens around them. Furthermore, they may remain indifferent to social events and think that others will evaluate them negatively (Brehm et al., 2002).

Considering the effects of loneliness, it is important to discover how it occurs. The causes of loneliness may include innate properties and cover a wide range from personal factors to financial and social factors (Rokach, 2004). According to Rokach and Neto (2005) age, culture, personal incompetence, developmental hardships, incompetence in interpersonal relations, displacement or social separation and social marginalization are observed to be important factors in explaining loneliness. Loneliness can also be explained by insufficient social skills, psychological problems, and individual's negative attitudes toward their perception of self, and their negative perception of themselves, others and the world (Jones et al., 1985). On the other hand, it is emphasized that one needs to consider personality traits of the individual when explaining the concept of loneliness (Wiseman et al., 2006). Perlman and Peplau (1982) state that since negative personality traits can reduce social desirability and attraction of individuals and adversely affect their behaviors in social relations, individuals with such traits can experience loneliness.

DARK TRIAD AND LONELINESS

In recent years, dark triad personalities (Machiavellianism, narcissism and psychopathy) which can be associated with loneliness have drawn deep interest of researchers (Jonason & Kroll, 2015; Rauthmann & Kolar, 2013; Zhang et al., 2015). Dark triad is a term used for defining a set of undesirable personality traits that exist in clinical and non-clinical individuals and is described as socially repulsive and destructive personalities (Savard et al., 2017). Individuals with such personalities can easily manipulate others through their impulsive, aggressive and self-seeking behaviors (Jonason et al., 2010).

The concept of *Machiavellianism* is used for defining selfish and manipulative people who can skillfully use deceptive strategies to achieve their goals. Machiavellian individuals show a 'cold' or 'insensible' approach to others and tend to use others for achieving their objectives (Christie, 1970). In addition, they are unsympathetic, sarcastic and utilitarian people. Their desire to possess sources of motivation such as money and power by making long-term strategic plans and how they deceive and exploit others make them socially undesirable (Jones & Paulhus, 2009).

Individuals with *psychopathic* personality are insensitive, cold-blooded people who have high potential of abusing interpersonal relations (Rauthmann & Kolar, 2013). Such people are also described as irresponsible individuals who seek for impulsive excitement, are lacking in empathy, are inclined to interpersonal manipulation and exhibit antisocial behaviors (Paulhus et al., 2016).

Finally, *narcissistic* individuals strive to attract attention and be admired constantly. Moreover, such individuals desire to gain power, prestige and status and become leaders within the society. Narcissistic people are insincere individuals who act self-interestedly in human relations, cannot empathize in their relationships, do not tolerate others and think themselves superior to anyone (Rauthmann & Kolar, 2013). Individuals with these personality traits show themselves up in the society, remain indifferent to their circles, use others for their own interests, deceive and manipulate others and exhibit aggressive attitudes and behaviors in interpersonal relations (Jonason & Kroll, 2015)

In the literature, there are limited number of studies on the dark triad and loneliness (Masui, 2019; Zhang et al., 2015), and it is stated that individuals who have dark triad personalities can have several social and emotional problems due to loneliness (Jonason et. al, 2010). Behaviors exhibited by individuals with dark triad personalities in their social relations make others alienate from them, which causes those individuals to become lonely (Jakobwitz & Egan, 2006).

MEDIATING ROLE OF EMPATHIC TENDENCY IN THE RELATIONSHIP BETWEEN DARK TRIAD AND LONELINESS

There are multiple factors that affect social relations and loneliness of individuals with dark triad personalities (Zhang et al., 2015). Jonason et al. (2013) highlight the necessity to investigate empathy for understanding the relationship between dark triad and loneliness. It is noted that individuals with these personalities are lacking in empathy (Rauthmann & Kolar, 2013), and therefore, such individuals experience problems in interpersonal relations and consequently become lonely (Campbell & Foster, 2002).

Empathy, as a concept which stands out for its absence among individuals with dark triad personalities, is the social awareness through which an individual shares their emotional experience both on the emotional and cognitive level. The fact that empathic people give reactions similar to the feelings of people who are empathized with is the consequence of this process. Exchange of emotions between individuals supports the understanding of the one who is empathized with (Davis, 1996). Empathy contributes to socially beneficial behaviors such as increased awareness level and establishing quality relationship with others and on the desired level. It helps individuals understand each other, therefore reducing the possibility of any conflict between them (Tully et al., 2015).

The reason why there are several definitions of empathy is its multi-dimensional nature. Addressing empathy in two groups of empathic skill and empathic tendency facilitates definition of the concept. Empathic skill is about making the other person feel understood and felt (Kaya & Siyez, 2010). Empathic tendency is individual's potential to understand and feel experiences and emotions of others (de Kemp et al., 2007).

High empathic tendencies of individuals have a positive impact on their psychosocial adaptation whereas decreased empathic tendencies are associated with individual's impaired psychosocial adaptation (Kaya & Siyez, 2010). In previous studies, empathy plays a protective role in mitigating loneliness and negative factors that may be related to loneliness. For instance, empathy has been found to have a mediating role in the relationships between depressive symptoms and loneliness (Calandri et al., 2021), emotional condition, perceived social support and loneliness (Hu et al., 2020), emotion regulation and prosocial behaviors (Benita et al., 2017). Hence, individuals with dark triad personalities have difficulty in establishing and maintaining their long-term social relations as these relations require mutual attention and empathic qualities (Campbell & Foster 2002; Set, 2020). Since they are also perceived as individuals who only care about their own interest, they can only be in short-term relationships (Set, 2020). As is understood, empathic tendencies of individuals with dark triad personalities are thought to play a key role in their loneliness.

In this study, the concept of loneliness among emerging adults was taken as the dependent variable. Multiple studies have been carried out to explore causes and consequences of loneliness among undergraduates (Dumas et al., 2017; Pamukçu & Meydan, 2010; Wai & Tiliopulos, 2012). However, no study was observed to investigate dark triad and empathic tendency as variables that explain loneliness. Therefore, this study primarily aimed to explore whether empathic tendency plays a mediating role in how dark triad affects loneliness. In line with this purpose, the following hypotheses were tested:
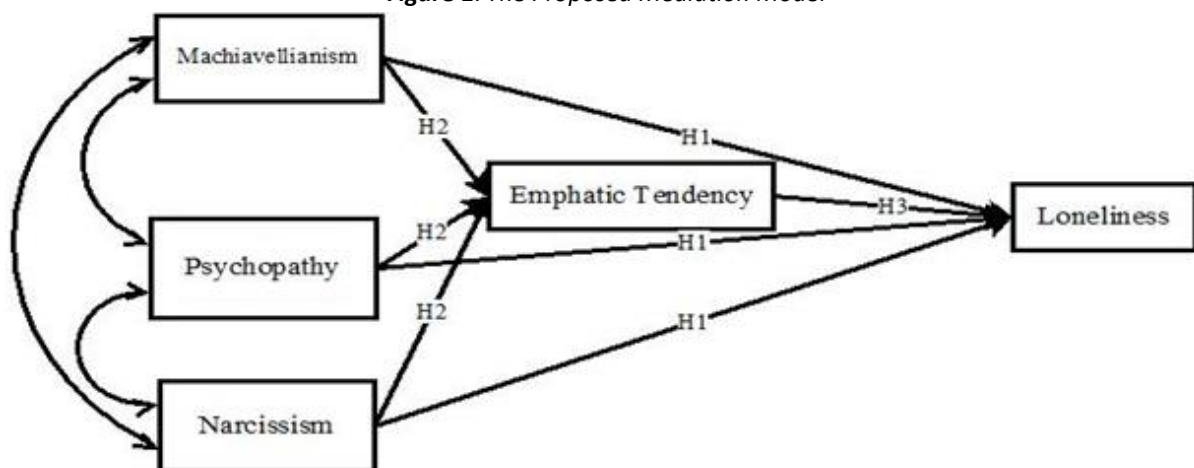
H_1= Total effect of dark triad (Machiavellianism, psychopathy and narcissism) on loneliness among emerging adults is significant.

H_2= Direct effect of dark triad (Machiavellianism, psychopathy and narcissism) on empathic tendency among emerging adults is significant.

H_3= Direct effect of empathic tendency on loneliness among emerging adults is significant.

H_4= Empathic tendency plays a mediating role in how dark triad (Machiavellianism, psychopathy and narcissism) affects loneliness among emerging adults.

Figure 1. *The Proposed Mediation Model*

METHOD

RESEARCH DESIGN

This study was performed in the relational research model of descriptive research designs. In such research, covariance of variables is investigated (Büyüköztürk et al., 2008). In the study, loneliness is the dependent variable, dark triad personalities are the independent variables, and empathic tendency is the mediator variable.

STUDY GROUP

The study was performed with a total of 510 undergraduate emerging adults. Of these undergraduates, 371 (72.7%) are women and 139 (27.3%) are men. With a mean age of 20.10 years (sd: 1.65), age range of the study group was 17-33 years. Distribution of the participants across the undergraduate departments is as follows: 29 in Turkish Teaching, 88 in Mathematics Teaching, 31 in Social Studies Teaching, 85 in Preschool Teaching, 197 in Psychological Counseling and Guidance, and 46 in Classroom Teaching. Lastly, of the undergraduates, 154 were freshmen, 166 were sophomores, 76 were juniors, and 114 were seniors.

MEASURES

Dark Triad Dirty Dozen (DTDD): The 12-item measure of Dark Triad developed by Jonason and Webster (2010) was utilized in the study. The scale was adapted into Turkish language by Satıcı et al. (2018). The scale is composed of three subscales: Narcissism, Machiavellianism and Psychopathy. The 5-point Likert scale is rated from Strongly Disagree (1) to Strongly Agree (5). As for the construct validity, three-factor construct of the adapted version was found to have good fit values just like the original version (χ^2/sd= 2.84, CFI= .96, GFI= .95, IFI= .96, SRMR= .047, and RMSEA= .066). In the reliability study, Cronbach's Alpha internal consistency coefficients were calculated to be .85 for the total scale, .87 for Narcissism, .79 for Machiavellianism, and .71 for Psychopathy. The hierarchical Confirmatory Factor Analysis (CFA) performed with the study data found the third-factor second-tier model to have good fit values (X^2/sd: 2.74, GFI: .96, AGFI: .93, RMR: .07, RMSEA: .06). For the present study, Cronbach's Alpha internal consistency coefficients were calculated to be .82 for Machiavellianism, .67 for Psychopathy, and .82 for Narcissism. Higher scores in the scale refer to increase in each personality trait.

*Empathic Tendency Scale (ETS)***:** The scale was developed by Dökmen (1988) to measure the emotional component of empathy and the empathizing potentials of individuals in everyday life. ETS is a Likert scale which consists of 20 items and is rated from Totally Disagree (1) and Totally Agree (5). Items 3, 6, 7, 8, 11, 12, 13, 15 are reverse-scored. In the validity study for ETS, the correlation coefficient between the scores obtained by an experimental group of 24 participants from ETS and "Intraception" part of the Edwards Personal Preference Schedule was found to be .68. In the reliability study, a test-retest was administered to a group of 70 and a correlation coefficient of .82 was found between the two applications. Spearman-Brown correlation coefficient was calculated to be .86 with the split-half method. Finally, Cronbach's Alpha internal consistency coefficient was found to be .72. As a result of the CFA performed with the study data, error variances of items 11 and 6, and 18 and 20 were combined. Accordingly, one can argue that the model has acceptable values (χ^2/sd: 4.17, GFI: .88, AGFI: .85, RMR: .09, RMSEA: .08). For the present study, Cronbach's Alpha internal consistency coefficient was found to be .76. Higher total scores in the scale means higher empathic tendency.

UCLA Loneliness Scale-Short Form (ULS-8): The measure was developed by Russell et al. (1978). Later, it was reviewed by Russell et al. (1980) and revised as a form composed of 20 items half of which is negative. It was adapted to Turkish language by Yaparel (1984) for the first time. To provide evidence for criterion-related validity of the scale, its correlation with Beck's Depression Inventory was checked, and a correlation coefficient of .50 was found between the two measures. Another study was

performed by Demir (1989). In this study, the short form revised by Doğan et al. (2011) was utilized. The 4-point Likert scale is rated from Never (1) to Always (4). The exploratory factor analysis performed for the scale's validity studies concluded a one-factor 8-item construct that explains 36.69% of total variance. The confirmatory factor analysis results show that one-factor construct of the scale has good fit values [χ^2/df = 3.11; GFI= .97, NFI= .92, CFI= .94, IFI= .94, AGFI= .94, RMSEA]. Cronbach's Alpha internal consistency reliability coefficient of the scale was calculated to be .81. According to the CFA performed with the data which were collected in this study, the model obtained when the error variances of items 1 and 2 of the 8-item short form were combined has good fit values (χ^2/sd: 4.83, GFI: .96, AGFI: .92, RMR: .03, RMSEA: .08). For the present study, Cronbach's Alpha internal consistency coefficient was found to be .85. Higher scores mean increased loneliness.

DATA ANALYSIS

SPSS 22 and AMOS 22 software packages were utilized for the data analysis. Pearson's Product-Moment Correlation Coefficient was used to calculate the correlations across variables while it was investigated whether direct and indirect correlations across variables were significant for exploring whether empathic tendency played a mediating role between Machiavellianism, narcissism and psychopathy and loneliness. As suggested by MacKinnon et al. (2002), calculation of direct and indirect correlations is one of the strongest methods for a mediation analysis. Moreover, AMOS bootstrapping method was utilized to ensure that significant or non-significant correlations were not random and not caused by this sample from which the data were collected; in other words, to avoid Type I error. Hayes (2009) recommends that this bootstrapping is performed over 5000 new samples derived from the original sample. By this means, for the estimations of indirect effects obtained, evidence is provided about the fact that indirect effects are statistically at the significance level of 0.05 within 95% confidence interval which does not contain zero (Shrout & Bolger, 2002).

When preparing the data for analysis, it was determined whether the data were distributed normally by examining the Skewness (S) and Kurtosis (K) coefficients. Accordingly, S-K coefficients were found to be 1.089-.807 for Machiavellianism, 1.213-1.704 for psychopathy, -.172-.536 for narcissism, -.092-.236 for empathic tendency, and 1.168-.942 for loneliness. Since the range between +1.96 and -1.96 is considered normal distribution (George & Mallery, 2010), one can argue that these variables exhibited normal distribution. Furthermore, utilizing these data, empty cells were filled with the "series mean" method in the missing data analysis. In the outlier analysis, total scores obtained from the variables were examined upon conversion to standard z-score, and data omission from the dataset was not deemed necessary.

DATA COLLECTION PROCESS

First, the participants were asked to read the informed consent form that contains general information on the study and research, confidentiality, and undergraduate's approval of study participation and whether they would participate in the research, and they were informed not to leave the items unanswered. Following the briefing, the volunteered participants completed the three scale forms during class hours. The participants completed the forms in about 20 minutes.

FINDINGS

The findings obtained as a result of the research are given below.

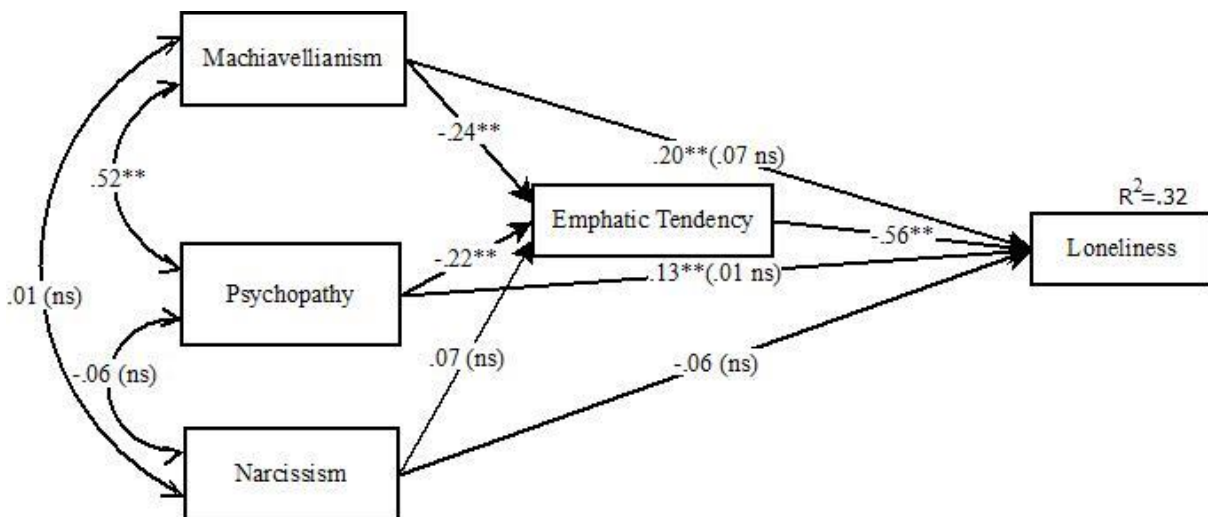**Table 1.** *Descriptive Findings and Correlation Coefficients of Variables*

Variables	Mean	Sd	1	2	3	4	5
1-Machiavellianism	7.50	3.49	1				
2-Psychopathy	7.24	3.13	.52**	1			
3-Narcissism	12.15	4.14	.49**	.35**	1		
4-Empathic Tendency	68.90	8.96	-.24**	-.22**	-.04	1	
5-Loneliness	12.61	4.18	.20**	.13**	.01	-.56**	1

N=510, **p<.01

According to Table 1, there were positive significant correlations between Machiavellian tendencies and psychopathic tendencies (r= .52, p<.05) and narcissistic tendencies (r= .49, p<.05) of the emerging adults. Moreover, a negative significant correlation was found between Machiavellianism and empathic tendency (r= -.24, p<.05) whereas a positive significant correlation was observed between Machiavellianism and loneliness (r= .20, p<.05). On the other hand, positive significant correlations were found between psychopathy and narcissism (r= -.22, p<.05) and loneliness (r= .13, p<.05) while a negative significant correlation was found between psychopathy and empathic tendency (r= -.22, p<.05). It can also be seen in the table that there was a negative non-significant correlation between narcissism and empathic tendency (r=-.04, p>.05) and a positive non-significant correlation between narcissism and loneliness (r= .01, p>.05). Finally, a negative significant correlation was found between empathic tendency and loneliness (r= -.56, p<.05).

Path coefficients for the analysis on whether empathic tendency played a mediating role in the relationship between dark triad and loneliness are given in Figure 2.

Figure 2. *Mediating Role of Empathic Tendency in the Relationships between Machiavellianism, Psychopathy, Narcissism and Loneliness among Emerging Adults*

Total effect of Machiavellianism on loneliness was found to be positive significant (β= .20, p< .05, 95% CI= .10-.30). However, direct effect of Machiavellianism on empathic tendency was negative significant (β= .24, p< .05, 95% CI= .32-.15). Similarly, direct effect of empathic tendency on loneliness was found to be negative significant (β= .56, p< .05, 95% CI= .63-.48). Regarding the direct effect of Machiavellianism on loneliness, path coefficient of this effect was observed to be non-significant (β= .07, p>.05, 95% CI=.01, .17). On the other hand, path coefficient of Machiavellianism indirect effect on

loneliness was found to be significant (β= .13, p <.05, 95% CI= .07, .16). Accordingly, it is possible to say that empathic tendency took a mediating role between Machiavellianism and loneliness among the emerging adults.

As for the total, direct, and indirect path coefficients via empathic tendency between psychopathy and loneliness, total effect of psychopathy on loneliness was found to be positive significant (β= .13, p< .05, 95% CI= .03, .24). Path coefficient of psychopathy's direct effect on empathic tendency was also significant (β= -.22, p <.05, 95% CI= -.32, -.13). Similarly, path coefficient of empathic tendency's direct effect on loneliness was found to be significant (β= -.56, p< .05, 95% CI= -.63-.48). It is seen in the figure that direct effect of psychopathy on loneliness was non-significant (β= -.01, p >.05, 95% CI= -.01, -.11) while the indirect effect was found to be significant (β= -.13, p <.05, 95% CI= -.21, -.06). This finding suggests that empathic tendency played a mediating role between psychopathy and loneliness among the emerging adults.

As for the total, direct, and indirect path coefficients via empathic tendency between narcissism and loneliness, total effect of psychopathy on loneliness was found to be negative non-significant (β= -.06, p>.05). Path coefficient of narcissism's direct effect on empathic tendency was also non-significant (β= -.07, p >.05). Indirect effect of narcissism on loneliness via empathic tendency was also found to be non-significant (β= .03, p>.05). According to this finding, one cannot suggest a mediating role of empathic tendency between narcissism and loneliness among the emerging adults.

Lastly, a positive significant correlation was observed between Machiavellianism and psychopathy among the emerging adults (β= .52, p<.05, 95% CI= .43-.60). Once the non-significant paths (indirect paths between Machiavellianism and loneliness and between psychopathy and loneliness) were omitted from the model of the mediation analysis, the model was found to have perfect fit values (χ^2= 3.884/2= 1.94, GFI=.99, AGFI= .98, IFI= .99, CFI= .99, REMSEA= .04). Furthermore, Machiavellianism and psychopathy explained .32 of loneliness via empathic tendency.

Table 2. *Path Coefficients of Total, Direct and Indirect Effects across Variables, Significance Levels, and Decision*

Paths	Total Effect	Direct Effect	Indirect Effect	Decision
Machiavellianism←Loneliness	.20**	.07	.13**	Full mediation
Psychopathy←Loneliness	.13**	.01	.14**	Full mediation
Narcissism←Loneliness	-.06	-.03	-.03	No mediation

**p<.01

As seen in Table 2, empathic tendency played a complete mediating role in the effects of both Machiavellianism and psychopathy on loneliness whereas no mediation was present between narcissism and loneliness due to the absence of direct, indirect and total significant correlations.

DISCUSSION, CONCLUSION AND IMPLICATIONS

This study investigated whether the dark triad personalities (Machiavellianism, narcissism and psychopathy) predicted loneliness and whether empathic tendency had a role in this relationship. Consequently, except narcissism, Machiavellianism and psychopathy traits substantially predicted loneliness. Moreover, empathic tendency mediated the relationships between. In other words, higher Machiavellian and psychopathic tendencies refer to increased loneliness. Lower empathic tendencies among individuals with such traits cause this relationship. The results and importance of this study are discussed below.

The first hypothesis, "Total effect of dark triad on loneliness is significant", was confirmed except that total effect of narcissism on loneliness was non-significant.

Effects of Machiavellianism and psychopathy on loneliness was concluded to be positive significant in the research. In the literature, there are studies in support of this research finding (Chirstie, 1970; Masui, 2019; Zhang et al., 2015). Zhang et al. (2015) stated that individuals with Machiavellian personality have difficulty in understanding others' feelings, exploit others (Christie, 1970) and do not make effort to understand thoughts, emotions and behaviors of others. Consequently, individuals can experience lack of emotional attachment (Jonason et al., 2013) and a high sense of loneliness in social interactions. The fact that individuals with such personalities have problems in their social relations supports this finding. For example, an individual with Machiavellian personality can deceive others for their own interest and may not be sincere to others. Once this is noticed by others, the individual may come up against loneliness (Jakobwitz & Egan, 2006). Dark triad represents apparent personality traits which are not welcomed by the society and lead to negative consequences both for individuals and organizations. Individuals with dark triad personalities exhibit avoidant behaviors when developing relationships with the opposite sex and social relations (Jonason et al., 2010). The effect of narcissism on loneliness was found to be positive but statistically non-significant in the research. This result coincides with some of the findings in the literature (Dumas et. al, 2017; Scott et al., 2018). However, there is study which concluded narcissism and loneliness to be related. While part of these studies concluded a negative correlation between narcissism and loneliness (La Sala et al., 2014), a study found a positive correlation between narcissism and loneliness (Mahajan, 2013). Thus, different results have been achieved in studies on the relationship between narcissism and loneliness. According to Zhang et al. (2015), narcissistic individuals think that their relationships should be decent due to their superiority complex and because social relations are appreciated by the society. By this way of thinking, they can exert all the effort to maintain their relations and avoid being alone. The authors also stated that participants might have provided misleading statements about not being alone when answering the measures in narcissism studies.

The second hypothesis, *"Total effect of dark triad on empathic tendency is significant"*, was confirmed except that effect of narcissism on empathic tendency was non-significant.

As concluded in the research, psychopathy and Machiavellianism of dark triad personalities had a negative significant effect on empathic tendency. Thus, low empathic tendencies of individuals with psychopathic and Machiavellian personalities in this research confirmed the expectation that it is one of the basic characteristics of such individuals. Previous research in the literature has also observed lower emotional empathic tendencies among individuals with Machiavellian, psychopathic and narcissistic personalities (Giammarco & Vernon, 2014; Jonason et al., 2013; Jonason and Kroll, 2015; Mahmut et al., 2008; Wai and Tiliopolous, 2012).

Researchers with different perspectives mention that individuals with high levels of dark triad experience emotional deficiencies. It is observed that such individuals, particularly those with psychopathic personality, spend very little time in their inner world and focus more on getting what they want from the outer world (Jonasson & Krause, 2013). As suggested by Malterer, et al. (2008), individuals with psychopathic tendencies have adaptive problems due to their failures in the societal domain despite their sufficient intelligence. Giammarco and Vernon (2014) report that individuals with dark triad personalities avoid experiencing emotional discomfort that stems from the suffering of another person. According to Mahmut, et al. (2008), individuals with high psychopathic levels use power rather than empathy to manipulate others.

However, it was found that narcissistic personality of dark triad had a negative but non-significant effect on empathic tendency. There are studies in the literature in support of this finding (Jonason & Kroll, 2015; Wai and Tiliopoulos, 2012). Wai & Tiliopoulos (2012) emphasize that this might be a result of self-report bias. The authors think that it is also because narcissistic individuals who can only use the cognitive aspect of empathy have better understanding of how they are perceived by others due to their need to have their own opinions adopted and reinforced. It is therefore argued that desire is rather in the forefront in understanding needs and feelings of others, and consequently,

narcissistic people would not be motivated by social emotions (Jonason & Kroll, 2015). Accordingly, it is thought that evaluations of the participants on narcissistic personality were biased.

The third hypothesis, **"***Effect of empathic tendency on loneliness is significant",*** was accepted.

Empathic tendency was found to have a negative significant effect on loneliness. In other words, emerging adults feel less lonely with higher empathic tendency. Pamukçu and Meydan (2010) explored that the strongest predictor of loneliness was empathic tendency in a sample of undergraduates in Turkey. This finding of the present study is in parallel with the negative significant correlations between romantic loneliness and family loneliness and affective and cognitive empathy as achieved by Büyükcebeci (2017). Despite being in different samples, a research finding coincide with this finding (Jiao and Wang, 2018).

According to Rogers (1975) empathy, above all, eliminates loneliness. At least, someone who receives empathic understanding even once feel that they are part of humanity. Dökmen (2005) suggests that parties who try to establish conflicting communication cannot acquire sufficient information, and to top it all, become lonely. In non-conflicting communication, parties can relay sufficient information to each other but are still lonely. On the other hand, in empathic communication, not only is there adequate information transfer but also parties are not alone. Due to the facilitating role of empathy in interpersonal communication, it is thought that individuals with high empathic skills experience loneliness less. Thus, with higher empathic tendency, social relations of individuals can improve, they can understand others better and elude loneliness as they have improved relations with them.

The fourth hypothesis, *"Empathic tendency has a mediating role in how dark triad (Machiavellianism, psychopathy and narcissism) affects loneliness"* was confirmed except for non-significant effect of narcissism on loneliness via empathic tendency.

This finding suggests that empathic tendency is a critical factor in the loneliness of emerging adults with dark triad personalities. Researchers with different theoretical perspectives state that individuals with high dark triad personalities have incompetence in emotional matters (Jonason & Krause, 2013). It is emphasized that such individuals may have difficulty in understanding and processing emotional condition of others and their own emotions. In other words, spending too much time with one's own or others' feelings conflict with strategies of individuals with dark triad personalities (Schimmenti et al., 2019).

During important stages of in life, individuals need to contact with others functionally. However, individuals with dark triad personalities exhibit manipulative behaviors which will lead to dysfunctionality in the long run, behave impulsively and can have communication problems as they do not possess the empathic skill to understand others (Jonason et al., 2013). As a result, with lower empathic skills, individuals find it difficult to communicate, and consequently, are more likely to become lonely. Affected by personality traits, loneliness is also influenced by dark triad personalities which can cause dysfunctional communication, and lower empathic skills of individuals with Machiavellian and psychopathic personalities in particular can increase the risk of loneliness. Thus, in the study, the emerging adults with Machiavellian and psychopathic personalities of dark triad might have experienced loneliness due to their lower empathic tendencies.

SUGGESTIONS AND FUTURE STUDIES

In this study, empathic tendency was found to have a mediating role between dark triad and loneliness. Future studies can examine different variables which have critical importance between dark triad and loneliness and can strengthen interpersonal relations. Since this is a cross-sectional study, longitudinal studies can be performed to collect more accurate data. On the other hand, similar to most studies, self-report measures were utilized to measure dark triad in the research. As stated by

Zhang et al. (2015), use of self-report measures can pose a problem since it is hard for individuals to evaluate their personalities and dark triad personalities are associated with emotional deficiencies. Differences in the measures of narcissistic personality in particular are of evidential value for this issue. Hence, different techniques can be utilized to measure dark triad personalities in future studies. In addition, it is thought that educational programs for improving the empathic tendencies of emerging adults will be effective in reducing their loneliness.

COMPLIANCE WITH ETHICAL STANDARDS

Ethical Approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Consent to Participate: Informed consent was obtained from all individual participants included in the study.

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AUTHOR CONTRIBUTION

The researchers contributed equally to all of the research processes.

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