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Predicting Moral Reasoning with Dark Triad of Personality: with mediation role of Emotion Regulation and Empathy

Abstract

Ethical reasoning in medicine can be a sign of respect for patients. In crises such as the Covid outbreak, the importance of ethical issues increases due to the workload and extreme fatigue of health care workers. This study aims at investigating the relationship between the dark triangle of personality and moral reasoning, with the mediating role of empathy and emotion regulation among Iranian health care providers during the Covid-19 epidemic.

The current study is a cross-sectional study on all physicians and nurses working in Shahid Beheshti University of Medical Sciences Hospitals. Data were gathered using both online and paper-pencil questionnaires. The questions were based on the Interpersonal Reaction Index (IRI), Difficulties in Emotion Regulation Scale (DERS), the Short Dark Triple (SD3), and Defining Issue Test-2 (DIT).

It was found that the dark triad of characters has a negative and significant correlation with emotion regulation but has no significant correlation with empathy and moral reasoning. Emotion regulation is positively correlated with moral reasoning. Empathy has no significant relationship with morality and the dark trinity of personality. We can consider emotion regulation as a mediator between the dark triad of personality and moral reasoning.

Keywords: *Moral reasoning, Dark Triad of Personality, Emotion Regulation, Empathy*

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Introduction

In December 2019, several unusual cases of pneumonia were reported in Wuhan, China, which were later named Coronavirus by the World Health Organization based on epidemiological findings. The virus is transmitted through respiratory particles and contact with aerosols. The Covid-19 epidemic then spread rapidly around the world and had a significant impact on people's lives physically, mentally, and emotionally (Carlos et al., 2020). The medical workforce played an important role in this great urgent situation (Chen et al., 2020). Ethical concerns related to public health include the allocation of limited resources to multiple patients, as well as the limited capacity of the healthcare system, which can expose healthcare workers to ethical decisions and deal with the consequences of those decisions (Greenberg et al., 2020). Ethical reasoning involves using one's moral values to know whether a specific way is right or wrong (Bowie, 2019). The most influential theory of ethics is Kohlberg's theory of moral development, which is still the dominant theory in ethical research (Goldschmidt et al., 2021). According to some ethics psychologists, personality traits play a major role in the performance of individuals by influencing the components of moral reasoning and moral decision-making (Međedović & Petrović, 2016).

However, there is limited literature on the impact of personality traits on moral components. Many personality

clusters have been proposed in research on individual differences (Campbell et al., 2009). Among the recent personality, clusters are the dark triad of personality associated with Machiavellianism, narcissism, and psychosis. Evidence indicates that dark personality traits influence immoral decisions and behaviors in different ways (Campbell et al., 2009).

Increasing evidence, on the other hand, has revealed that there is a relationship between moral reasoning and emotion regulation (Metzger et al., 2018). Emotion regulation refers to a person's ability to monitor, evaluate, perceive, and change emotional responses in a way that is beneficial to adaptive performance (McRae & Gross, 2020). The results of previous studies have shown that impaired emotion regulation is associated with various outcomes including anxiety, decreased emotional experience, substance abuse, aggression, and suicidal ideation (Gratz et al., 2016).

Emotion regulation may be related to different aspects of personality (Barańczuk, 2019). Dark personality traits, especially narcissism and antisocial personality (psychopathy) are associated with difficulty in regulating emotions following negative events (Mojsa-Kaja et al., 2021).

Empathy, on the other hand, is a tendency that has emotional and cognitive dimensions and seems to be related to the dark triad of personality (Amiri & Behnezhad , 2017). Previous studies have also shown that there is a significant relationship between emotional empathy and moral development. People with dark personality traits have limited empathy (Jonason & Krause, 2013).

One of the most important steps in achieving equitable medical care and setting a goal to promote moral reasoning is to determine the current state of moral reasoning ability and personality traits associated with moral reasoning and moral behavior (Walker & Hennig, 1997). Given the importance of personality traits and moral reasoning in everyday behaviors and decision-making, this research gap suggests an important goal for psychological studies. In particular, such research sheds light on the interpersonal components of moral development and highlights the role of personality in perceiving fair and unfair behavior, moral reasoning, and solving moral problems. Examining the mediating role of empathy and emotion regulation, in turn, helps researchers gain a more complex understanding of the interaction between personality and moral development (Powell, 2018). However, such research has not been conducted among health care providers. Therefore, the present study aimed to investigate the relationship between the dark triad of personality and moral reasoning, with the mediating role of empathy and emotion regulation among Iranian health care providers during the Covid-19 epidemic.

METHODS

Participants and Procedure

The present study was a cross-sectional study. The study population included all physicians and nurses working in the hospitals of Shahid Beheshti University of Medical Sciences (SBMU) (i.e. Ayatollah Taleghani, Imam Hossein (AS), Panzdah-e-Khordad, Shohadayeh Tajrish, Akhtar, Shahid Labbafinejad, Shahid Modarres, Torfeh, Mofid, Loghman-e-Hakim, Masih Daneshvari, Mahdieh, Shahid Mofateh Varamin, Shohadayeh Pakdasht, Ayatollah Ashrafi Esfahani, and the Sevom-e-Shaban Damavand) who worked in the care units of Covid-19 patients.

The code of ethics was approved by the SBMU Research Committee (IR.SBMU.RETECH.REC.1399.1131). Demographic and quantitative information was gathered using online and pencil questionnaires. After obtaining informed consent, the questionnaires were administered in coordination with the heads of hospital wards. Online questionnaires were provided to participants through online groups designed specifically for physicians and nurse members.

Explanations were given to all participants regarding the purpose of the investigation, confidentiality, and ethical concerns. Finally, the questionnaires were collected and their results were analysed. The full description of each questionnaire can be seen in the supplementary documents. The available sampling method was used to select participants. Free Statistics Calculators software was used to calculate the sample size. Considering the effect size 0.3, power 0.8, latent variables 17, observed variables 112, and alpha 0.5.

Eligibility Criteria

Inclusion criteria: medical students and nurses, informed consent to participate in the study, work experience during the epidemic, no severe physical and mental illness (according to participants), no history of concussion, no hospitalization reported in psychiatric centers, and no reported substance abuse worked in the Covid-19 patient care unit .

Exclusion criteria: Lack of informed dissatisfaction and incomplete questionnaire.

Measures

Interpersonal Reactivity Index (IRI)

The IRI is a questionnaire developed by Davis in 1983 to measure interpersonal behaviors (Keaton, 2017). The index consists of 28 items that respondents respond to using a 5-point Likert scale from 0 to 4. "Does not describe me well" to "Describes me very well." IRI scores range from 28 to 140. This scale includes 4 subscales called Fantasy (FS), Empathy Concern (EC), Perspective Taking (PT), and Personal Distress (PD) and each subscale contains 7 items (Keaton, 2017). The IRI showed good psychometric properties with high reliability for all subscales between men and women, ranging from 0.70 to 0.78. Also, the reliability of the retest with an interval of 60 to 70 days showed coefficients from 0.62 to 0.81 for women

and 0.60 to 0.70 for men, and Cronbach's alpha was 0.77 (Davis et al., 1994).

Difficulties in Emotion Regulation Scale (DERS)

DERS is a 36-item self-report scale developed by Graz and Roemer (Vatan & Pellitteri, 2016). Emotion Regulation Scale (ER) and any difficulties in various aspects of ER, including "difficulty engaging in purposeful behavior", "difficulty in controlling impulse", "restriction of access to ER strategies", "nonacceptance of emotional responses" Lack of emotional awareness ", and finally" lack of emotional clarity" (Vatan & Pellitteri, 2016). From this scale, a total score and six specific scores can be obtained from each subscale. Respondents respond to each item on a 5-point Likert scale from 1 "almost never" to 5 "almost always". Higher scores indicate lower levels of ER (Vatan & Pellitteri, 2016). DERS has excellent psychometric properties, including an internal consistency coefficient of 0.93, Cronbach's alpha above 0.80 for all subscales, and a significant correlation with the Negative Mood Regulation Scale (NMR) and the Acceptance and Action Questionnaire (AAQ16) (Vatan & Pellitteri , 2016). The Persian version of this scale showed a Cronbach's alpha coefficient of 0.86 and good concurrent validity with the Sensation Seeking Scale (SSS) (r = 0.26) (Asgari et al., 2009).

Short Dark Triad (SD3)

SD3 is a 12-item scale designed by Jonason et al. (2012). This scale consists of three subscales including Machiavellianism (4 items), narcissism (4 items), and psychosis (4 items). Responses to each item are graded on a three-point Likert scale from 1 "Does not describe me at all" to 3 "Describes me completely". SD3 has good psychometric properties (internal compatibility; Cronbach's alpha 0.83 and retest reliability coefficients between 0.76 and 0.83) (Jonason et al., 2012).

Defining Issue Test-2 (DIT)

DIT is a scale designed by Lloydet al. (2017). To evaluate moral judgment. This scale includes stories that present riddles or moral riddles to the respondents. After each story, participants answer 12 questions based on a 5-point Likert scale from 1 "not important at all" to 5 "very important". Each answer corresponds to one of Kohlberg's stages of moral reasoning (stages 2 to 6), and the answers reveal the level of moral reasoning based on the participants' answers (Rest, 1986). Rest et al. (2000) reported good reliability for DIT during the one year of research, ranging from 0.76 to 0.80 (Rest et al., 2000). The Persian version of DIT also showed good reliability (Cronbach's alpha = 0.82) and convergent validity (r = 0.68) (Ghiyasizade, 2013).

Data Analysis

IBM SPSS 24 and PLS-3 software were used for analysis. Data were analyzed using Structural Equation Models.

RESULTS

Demographic Characteristics

Three hundred and twenty people participated in the study, five of whom were excluded from the study due to absence. Among the respondents, 36.5% (n = 115) were male and 63.5% (n = 200) were female, 91.4% (n = 288) were single in terms of marital status and 8.6% (n = 27) were married with 52.7%. (n=166) were physicians and 47.3% (n = 140) were nurses.

Descriptive Data

Descriptive data show that moral reasoning is at least 0.000, maximum 0.6875, average 0.139, standard deviation 0.184, and skewness and kurtosis in the range of 3- to 3 and normal. Emotion regulation is a minimum of 32, a maximum of 138, an average of 69.11, a standard deviation of 22.31, and skewness and kurtosis in the range of 3- to 3 and normal. Empathy is at least 63, maximum 127, mean 94.84, standard deviation 12.16, and skewness and kurtosis are in the range of 3- to 3 and normal. Dark personality traits are minimum 29, maximum 117, mean 68.71, standard deviation 17.54, and skewness and kurtosis are in the range of 3- to 3 and normal (Table 1).

Table 1. Descriptive information of the variables.

	N	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**	**Skewness**		**Kurtosis**	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Moral reasoning	315	.0000	.6875	.139278	.1845826	1.169	.137	.361	.274
Emotion Regulation	315	32	138	69.11	22.31	0.55	0.137	-0.18	0.274
Empathy	315	63.00	127.00	94.84	12.16620	.164	.137	-.233	.274
Dark Personality Traits	315	29	117	68.71	17.54	.099	.137	-.485	.274
Perspective-taking	315	10.00	33.00	24.6222	5.41231	-.103	.137	-.751	.274
Fantasy	315	9.00	33.00	21.1968	6.23014	.226	.137	-.930	.274
Empathic concern	315	11.00	33.00	26.4159	5.60042	-.768	.137	-.639	.274

Personal distress	315	9.00	33.00	22.6127	5.35871	-.069	.137	-.477	.274
Machiavellianism	315	10.00	42.00	22.20	9.12	.764	.137	-.759	.274
Narcissism	315	9.00	45.00	26.46	9.78	.227	.137	-1.084	.274
Psychopathy	315	9.00	45.00	20.03	8.67	.883	.137	.073	.274
Nonacceptance of emotional responses	315	6.00	30.00	12.8286	6.01716	.856	.137	-.129	.274
Difficulty engaging in Goal-directed behavior	315	5.00	25.00	15.4540	5.11775	-.026	.137	-.796	.274
Impulse control difficulties	315	6.00	30.00	13.88	5.76	.800	.137	.113	.274
Lack of emotional awareness	315	8.00	42.00	18.42	7.48	.663	.137	-.327	.274
Limited access to emotion regulation strategies	315	9.00	29.00	15.90	4.66	.925	.137	.054	.274
Lack of emotional clarity	315	5.00	24.00	10.9905	4.80146	.983	.137	-.296	.274
Valid N (listwise)	315								

Reflective Outer Model Tests (Measurements)

Before performing the validity and reliability tests of the structure as well as the qualitative evaluation of the external model, which is considered the main task of the model, the model is first modified as a preliminary test of homogeneity.

The external load test was used for homogeneity and the results showed that questions 22 and 30 of limited access to emotion regulation strategies and questions 24 and 3 of impulse control problems had a factor load of less than 0.65 and were removed from the model and the model was modified.

Divergence Validity

To evaluate the validity of cross-load divergence, three cross-loading tests, Fornell, Larker, and HTMT, were used, which show that the divergent validity of the questions of each variable is established in comparison with the questions of the other variables. Fornell and Larker tests showed that the mean root of variance extracted from each variable was greater than the correlation of that variable with other variables, and HTMT showed that all pairs of variables had a multivariate ratio of less than 1. Based on the results, the divergent validity test of the research model is confirmed and on the other hand, it has structural validity due to convergent validity.

Outer Model Test

CV com test was used to evaluate the quality of the external model. All cvcom values of the variables are much higher than 0.35 and it can be claimed that the quality of the external model is very good (Table 2).

Table 2. Construct Crossvalidated Communality.

	SSO	**SSE**	**Q^2 (=1-SSE/SSO)**
Dark triad personality trait	316.000		1.000
Difficulty engaging in Goal-directed behavior	1,580.000	757.900	0.520
Emotion Regulation	316.000		1.000
Empathetic attention	2,212.000	1,095.982	0.505
Empathy	316.000		1.000
Fantasy	2,212.000	1,012.956	0.542
Impulse control difficulties	1,264.000	512.283	0.595
Lack of emotional awareness	1,896.000	977.202	0.485
Lack of emotional clarity	1,580.000	618.834	0.608
Limited access to emotion regulation strategies	1,896.000	973.885	0.486

Machiavellianism	2,844.000	1,167.211	0.590
Moral reasoning	316.000		1.000
Narcissism	2,844.000	1,125.691	0.604
Nonacceptance of emotional responses	1,896.000	1,017.643	0.463
Personal distress	2,212.000	1,255.277	0.433
Perspective-taking	2,212.000	1,019.657	0.539
Psychopathy	2,844.000	1,150.583	0.595

Hypothesis Testing

Findings showed that three characteristics of dark personality have a negative and significant effect on emotion regulation ($p = 0.002$) and the intensity of the effect is $\beta = -0.163$. Also, the effect of three characteristics of dark personality traits on moral reasoning had no significant effect and the hypothesis was not confirmed. Nevertheless, there was no significant effect on empathy. The results also showed a positive and significant relationship between emotion regulation and moral reasoning ($p < 0.000$) and the intensity of this effect is $\beta = 0.573$. However, empathy did not affect moral reasoning (Table 3) and (Figure 1).

Inner Model Quality

The inner model test quality cv red showed that it is 0.302 for moral reasoning and seems desirable but it is not the same for all variables (Table 4).

This study aimed to achieve the prediction accuracy or variance explained by the endogenous variables of the conceptual model. The current study has an endogenous variable whose value of R^2 in the present model is 0.316 - all exogenous variables can predict the dependent variables due to the presence of three weak fold values (Table 5).

Table 3. Path Coefficients.

Hypotheses	**β**	**P value**	**T value**	**Confirm/ reject of hypotheses**
Dark triad personality trait -> Empathy	0.007	0.894	0.134	reject
Dark triad personality trait -> Emotion Regulation	-0.163	0.002	3.180	Confirm
Empathy -> Moral reasoning	0.047	0.379	0.881	reject
Emotion Regulation -> Moral reasoning	0.573	0.000	16.477	Confirm
Dark triad personality trait -> Moral reasoning	-0.028	0.539	0.614	reject

Table 4. Construct Crossvalidated Redundancy.

	SSO	**SSE**	**Q^2 (=1-SSE/SSO)**
Dark triad personality trait	316.000	316.000	
Difficulty engaging in Goal-directed behavior	1,580.000	1,461.157	0.075
Emotion Regulation	316.000	309.134	0.022
Empathetic attention	2,212.000	1,884.071	0.148
Empathy	316.000	317.113	-0.004
Fantasy	2,212.000	1,782.924	0.194
Impulse control difficulties	1,264.000	1,162.001	0.081
Lack of emotional awareness	1,896.000	1,874.904	0.011
Lack of emotional clarity	1,580.000	1,365.454	0.136
Limited access to emotion regulation strategies	1,896.000	1,675.364	0.116
Machiavellianism	2,844.000	2,156.380	0.242
Moral reasoning	316.000	221.321	0.300
Narcissism	2,844.000	2,348.044	0.174
Nonacceptance of emotional responses	1,896.000	1,865.739	0.016

Personal distress	2,212.000	1,837.833	0.169
Perspective-taking	2,212.000	1,816.469	0.179
Psychopathy	2,844.000	2,043.004	0.282

Table 5. R Square.

	R Square	**R Square Adjusted**
Difficulty engaging in Goal-directed behavior	0.120	0.118
Emotion Regulation	0.027	0.024
Empathetic attention	0.250	0.248
Empathy	0.000	-0.003
Fantasy	0.313	0.310
Impulse control difficulties	0.115	0.112
Lack of emotional awareness	0.022	0.019
Lack of emotional clarity	0.212	0.210
Limited access to emotion regulation strategies	0.247	0.245
Machiavellianism	0.390	0.389
Moral reasoning	0.321	0.315
Narcissism	0.262	0.260
Nonacceptance of emotional responses	0.043	0.039
Personal distress	0.315	0.313
Perspective-taking	0.287	0.284
Psychopathy	0.443	0.442

DISCUSSION

This study aimed to investigate the relationship between dark personality traits and moral reasoning with the mediating role of empathy and emotion regulation among Iranian health care providers during the Covid-19 epidemic. Some of our outcomes were consistent with previous studies. But not all of our hypotheses were validated, and some were rejected.

Some studies have shown that the dark triad is associated with immoral behavior. The dark triad influences fraudulent behaviors (Harrison et al., 2018; Schade et al., 2021). There was also some support for predicting that higher scores on the dark three variables were associated with lower levels of moral growth (Campbell et al., 2009).

In a study by Karandikar et al., They found that the dark triad characteristics are associated with compromised moral values that can lead to practical decisions -making on moral dilemmas. Dark traits were negatively associated with the individualization of moral principles and positively associated with both types of moral dilemmas (Karandikar et al., 2018). In the current study, we aimed to determine whether the dark triad characters were related to moral reasoning. Our results indicated that there is no significant relationship between them. Therefore, our hypothesis was not confirmed.

Research studies have shown that pathological personality traits are strongly associated with various dimensions of emotion regulation disorders. Amiri and Jamali's study shows that people with dark personality traits can not experience emotional distress in the face of other people. Emotional disorder mediates the relationship between destructive attachment styles and the dark triad character (Amiri & Jamali, 2019). In the current study, we found that there is a significant negative correlation between dark triad personality and emotion regulation.

The study of Wai and Tiliopoulos on the relationship between dark traits and empathy shows that all dark characters have a negative relationship with empathy (Wai & Tiliopoulos, 2012). But our findings did not make this connection, so this hypothesis was rejected in our study.

Recent theories have argued for the involvement of emotion regulation in moral decision-making (Szekely & Miu, 2015). Emotions reflect moral behavior throughout the evaluation process and play a role in moral judgment (Helion & Ochsner, 2018). A study of children found that children who were lower in emotional regulation had lower moral reasoning scores than other children (Hinnant et al., 2013). Emotion regulation can predict moral growth and behavior (Brausch, & Woods, 2019). Thus, emotion regulation is positively correlated with moral reasoning.

Empathy and morality are interrelated. Empathy does not always lead to moral behavior and can sometimes interfere

with moral decision-making (Decety & Cowell, 2014). One study found that people with high levels of empathy offered more arguments for moral reasoning than those with low levels of empathy (Berenguer, 2010). In a Spanish study of medical students, the results indicated that there was a significant correlation between moral reasoning, moral sensitivity, and empathy (Yuguero et al., 2019). But another study on university students in Turkey showed a different result and could not find a significant relationship between empathy and moral judgment (Aridag & Asuman, 2010). Our study, like the Turkish study, could not find a correlation between empathy and moral reasoning.

In this study, the relationship between target variables in Iranian physicians and nurses involved in the Covid crisis can be discovered. As you know, the staff of the health department in this period of the epidemic suffered from mental disorders and complications that can affect the results of the study. Therefore, this study may have different results in the post-corona crisis period.

In this study, we considered only doctors and nurses. Undoubtedly, to obtain more comprehensive and accurate results, it is necessary to grow the statistical community and study more people.

CONCLUSION

The present study showed that emotion regulation is significantly correlated with the dark triad of personality and moral reasoning. But empathy has no connection with them. Thus, emotion regulation can be considered as a mediator between the dark triad of personality and moral reasoning.

Conflict of interest

The authors declare that they have no competing interests

Ethical statement

The code of ethics was approved by the SBMU Research Committee (IR.SBMU.RETECH.REC.1399.1131).

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Figure captions

Figure 1. Structural equation model.