Original article / *Araştırma*

Dirty Dozen Scale: a study of adaptation to Turkish university students

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ABSTRACT

Objective: In recent years, Machiavellianism, psychopathy and narcissism have been considered together as the dark sides of the personality. In this study, the purpose is to adapt the Dirty Dozen Scale to Turkish culture. **Methods:** Four steps have been conducted in this study. These studies are linguistic equivalence study, structure and concurrent validity study, predictive validity study, and reliability study, respectively. Nine hundred and thirty-two university students (61% female), who were included in the four steps, participated in the study. **Results:** Applying a confirmatory factor analysis [$\chi^2_{(51,430)}$=145.16, p<0.001; CFI=0.96; GFI=0.95; IFI=0.96; SRMR=0.047; RMSEA= 0.066, 90% CI (0.053-0.078)] a structure was determined made up of three factors which corroborated the structure of the original scale. The result of the predictive validity showed that physical aggression positively predicted Machiavellianism, psychopathy and narcissism; verbal aggression positively predicted psychopathy and narcissism; anger positively predicted psychopathy and narcissism; hostility positively predicted psychopathy and narcissism. The Cronbach's alpha coefficients have been calculated as 0.79 for Machiavellianism, 0.71 for psychopathy and 0.87 for narcissism. **Discussion:** The findings of the study have shown that the Turkish form of the Dirty Dozen Scale is a valid and reliable scale to measure the Machiavellianism, psychopathy and narcissism personality traits. Future studies will cast light on the understanding of the structure of the Dark Triad Personality Traits in Turkish culture. **(Anatolian Journal of Psychiatry 2018; 19:xx-xx)**

Keywords: dark triad, Machiavellianism, psychopathy, narcissism, Turkish version

Karanlık Üçlü Ölçeği: Türkçeye uyarlama çalışması

ÖZ

Amaç: Son yıllarda makyavelizm, psikopati ve narsisizm kişiliğin karanlık yönü olarak birlikte ele alınmaktadır. Bu araştırmanın amacı Karanlık Üçlü Ölçeğini (Dirty Dozen Scale) Türkçeye uyarlamaktır. **Yöntem:** Ölçek uyarlama çalışmaları dört adımda gerçekleştirilmiştir. Bu adımlar sırasıyla dilsel eşdeğerlilik çalışması, yapı ve uyum geçerliliği çalışması, yordayıcı geçerlilik çalışması ve güvenilirlik çalışmasıdır. Araştırmanın dört adımı %61'i kadın olan toplam 932 üniversite öğrencisinin katılımı ile gerçekleştirilmiştir. **Sonuçlar:** Doğrulayıcı faktör analizi sonuçlarına göre özgün ölçekteki üç boyutlu yapı ölçeğin Türkçe formu içinde aynı şekilde doğrulanmıştır [$\chi^2_{(51,430)}$=145.16, p<0.001; CFI=0.96; GFI=0.95; IFI=0.96; SRMR=0.047; RMSEA=0.066, 90% CI (0.053-0.078)]. Yordayıcı geçerlilik açısından fiziksel saldırganlığın Makyavelizm, psikopati ve narsisizmi pozitif yönde; sözel saldırganlığın psikopati

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ve narsisizmi pozitif yönde; öfkenin psikopati ve narsisizmi pozitif yönde; düşmanlığın psikopati ve narsisizmi pozitif yönde anlamlı düzeyde yordadıkları bulunmuştur. Ölçeğin iç tutarlılık katsayıları Makyavelizm için 0.79, psikopati için 0.71 ve narsisizm için 0.87 olarak hesaplanmıştır. **_Tartışma:_** _Sonuç olarak Karanlık Üçlü Ölçeği Türkçe formu-nun Makyavelizm, psikopati ve narsisizm kişilik özelliklerini ölçme bakımından geçerli ve güvenilir bir ölçme aracı olduğu görülmüştür. Bu çerçevede, yapılacak olan yeni araştırmalar karanlık üçlü kişilik özelliklerinin Türk kültürün-deki yapısının anlaşılmasına ışık tutacaktır._ **_(Anadolu Psikiyatri Derg 2018; 19:xx-xx)_**

Anahtar sözcükler: _Karanlık üçlü, Makyavelizm, psikopati, narsisizm, Türkçe sürüm_

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INTRODUCTION

Understanding and exploring the personality has become the basic interest field of psychology, and many hypotheses and measurement tools have been developed in this field. Paulhus and Williams[1] defined the dark sides of personality and measured the narcissism, Machiavellianism and psychopathic personality traits, which are conceptualized as the dark triad. In this context, this has been developed to measure the inclination of the individuals who have not been diagnosed with behavioral disorder, together with narcissism, Machiavellianism and psycho-pathic personality traits, which are considered within the dark triad.

Narcissism is defined as the unrealistic and extreme love of a person for him/herself and it is derived from the word 'narke' which means insensitivity in the Greek language.[2] However, the insensitivity refers to the insensitivity of a person felt for other individuals around as a result of the extreme love felt for oneself. Al-though narcissism is a personality trait, indivi-duals' having extreme narcissistic characteris-tics is considered as a personality disorder.[3] However, narcissism, which considers the proud and joy felt due to the success by an individual is considered as the positive characteristic of some narcissist individuals.[4]

Machiavelist individuals are the ones who see the others as a tool to reach their own goals and who use them to reach own goals.[5] In this context, for Machiavelist individuals, cheating, flattery, and emotional abuse are acceptable behaviors to reach own goals. For social life, on the other hand, these behaviors are the ones that may lead to disagreements. For this reason, Machiavelist individuals try to perform risk analyses before they apply lying and cheating[6] and try to decrease the risks that may appear due to their behaviors. This situation supports the idea that they use lying and cheating in a strategic way.[6]

The terms 'psychopathy' was first used by P. Pinel to describe the individuals who do not have any psychotic syndromes with normal intellec-tual capacities, but without ethical values feeling no regret and acting in an uncontrollable man-ner.[7] The psychopath individuals have no ethical values, show aggressive behaviors, act with urges, have no emotional depth, get angry easily, selfish, bully, manipulative, irresponsible, fearless, have no conscious and empathy, have no worries and regrets.[8]

There is no measurement that measures the dark triad personality traits in the Turkish culture. In addition, it is foreseen that the Dirty Dozen Scale, which will measure these three traits together in a short time, will be beneficial for the researchers. To this end, the purpose of this study is adopting the Dirty Dozen Scale,[9] into Turkish culture, and performing the validity and reliability studies of the scale. Thus it was expected to adapt a useful scale to investigate the dark triad personality traits in Turkish culture.

STUDY 1. Linguistic Validity

Linguistic validity was made for the purpose of verifying that the translations of the items are interpreted in the same manner across the target population; and they have the same content validity.

Participants

Thirty six Senior-Class English Literature Teacher students received the dirty dozen both in the original and Turkish versions.

Procedures

The back translation method of Brislin[10] was used to ensure the linguistic equivalency of the Dirty Dozen Scale. Eight fluent English-Turkish translators translated the first copy with the Authors' supervision. The version that was translated was back-translated by three other fluent English-Turkish translators. The two copies were compared. The spelling and format errors were checked and the final Turkish Dirty Dozen Scale Version was completed.

Result

The correlation, which was measured between

the Turkish and English forms was found 0.98 for Machiavellianism, 0.97 for psychopathy; and 0.99 for narcissism. This results showed that Turkish and English forms of the scale are similar to each other and are related.

STUDY 2. Validity I

In this study, to obtain empirical support for determining if the Turkish version of the Dirty Dozen Scale will give a structure that is similar to the original, the confirmatory factor analysis was conducted. Gender differences have also been included in our study. The five-factor personality traits, life satisfaction and narcissism have also been investigated to examine the concurrent validity of the Dirty Dozen Scale.

Participants

Four hundred and thirty university students participated in this study. There were 258 female (60%) and 172 male (40%) students in the study. The mean age was 20.97±1.97years.

Measures

The Dirty Dozen Scale (DDS): The DDS[9] consists of 12 items and each item is scored on a 1-9 scale. DDS is comprised of three subdimensions, Machiavellianism, psychopathy, and narcissism. According to confirmatory factor analysis indicated that the three-dimensional structure was well fit (χ^2/df=2.43; CFI=0.92; NFI=0.87; RMSEA=0.08). The item-level temporal reliability coefficients of the scale were ranged 0.84 to 0.92 and test-retest reliability coefficients ranged from 0.79 to 0.91.

Adjective Based Big Five Scale (ABPT): The ABPT[11] includes 40 opposite adjective pairs. ABPT is consists of five subdimensions (extroversion, emotional stability/neuroticism, agreeableness, conscientiousness and openness to experiences). Component analysis of have shown that the ABPT explains 52.63% of the variance in big five model. The internal consistency coefficients were ranged from 0.73 to 0.89 and the test-retest reliability coefficients were range from 0.68 to 0.86.

Satisfaction with Life Scale (SWLS): The SWLS[12] consists of five items and each item is scored on a 1-7 scale. Turkish adaptation of this scale had been done by Durak et al.[13] According to confirmatory factor analysis indicated that the scale was well fit (χ^2/df=2.026, IFI=0.99, TLI=0.99, CFI=0.99, SRMR=0.020, RMSEA= 0.043). The internal consistency reliability coeffi-

cient of the scale was 0.81.

Narcissistic Personality Inventory (NPI): The NPI[14] consists of 16-item pairs. Turkish adaptation of this scale had been done by Atay.[15] Component analysis of have shown that the NPI explains 61% of the variance in narcissistic personality. The internal consistency reliability coefficient of the scale was 0.65.

Procedures

The confirmatory factor analysis (CFA) was conducted to determine structure of the scale. The gender variable has also been investigated and scalar and metric invariance was used to test the plausibility of varying factor structures associated with gender. In statistical analyses, the Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), Goodness of Fit Index (GFI) and Adjusted Goodness of Fit Index (AGFI) have been made use of. The rate of the chi-square with the degrees of freedom has also been investigated.

The five-factor personality traits, life satisfaction and narcissism personality traits have also been investigated to see the concurrent validity of the Turkish version of the Dirty Dozen Scale.

Results

Table 1 shows the standardized loading, standard error, *t* values and R^2 values.

It is clear in Table 1 that the factor loading for Machiavellianism range between 0.54 and 0.82; between 0.39 and 0.80 for psychopathy; and between 0.67 and 0.91 for narcissism. The GFI values are found to be as follows: GFI, AGFI and GFI 0.90 and higher, RMSEA and SRMR 0.80 or lower, and chi-square/df ratio 3 or lower.[16] In 3-Factor Structure, satisfactory results have been obtained: $\chi^2_{(51,n=430)}$=145.16, *p*<0.001; CFI=0.96; GFI=0.95; IFI=0.96; SRMR=0.047; RMSEA= 0.066, 90% CI 0.053-0.078. The 3-Factor Structure, which is based on the data coming from the female and male participants, gave us an acceptable fit with the data. In Table 2, the GFI are given for the confirmatory models.

In this part, the concurrent validity of the Dirty Dozen has been investigated. Table 3 gives the correlations of the Dirty Dozen with other measures. It is clear in Table 3 that there is a negative correlation between the Machiavellianism and agreeableness (r=-0.32, p<0.01) and life satisfaction (r=-0.14, p<0.01); and there is a

Table 1. CFA results of three-Factor Dirty Dozen

Item number	γ	ζ	t	R2
Machiavellianism				
1	0.54	0.71	11.36	0.29
2	0.80	0.36	18.62	0.64
3	0.69	0.53	15.21	0.47
4	0.82	0.33	19.39	0.67
Psychopathy				
5	0.39	0.82	8.55	0.18
6	0.68	0.54	14.67	0.46
7	0.75	0.44	16.56	0.56
8	0.80	0.35	18.29	0.65
Narcissism				
9	0.84	0.29	20.63	0.71
10	0.91	0.16	23.16	0.82
11	0.67	0.56	14.96	0.44
12	0.75	0.43	17.67	0.57

γ=standardized factor loadings; ζ=error loadings

Table 2. Fit indexes of Dirty Dozen Scale

Structure	χ^2	χ^2/df	CFI	GFI	IFI	SRMR	RMSEA	90% CI
3-Factor	145.16	2.85	0.96	0.95	0.96	0.047	0.066	0.053-0.078
For female	133.45	2.61	0.93	0.92	0.93	0.057	0.079	0.063-0.096
For male	84.05	1.64	0.96	0.92	0.96	0.060	0.062	0.037-0.084

Table 3. Zero-order correlations with study variables

Variables	Machiavellianism	Psychopathy	Narcissism
Agreeableness	-0.32**	-0.35**	-0.19**
Neuroticism	0.21**	0.02	0.18**
Consciousness	-0.08	-0.17**	0.12*
Extraversion	-0.09	-0.03	0.14**
Openness	-0.07	-0.04	0.12*
Life Satisfaction	-0.14**	-0.12*	0.01
Narcissism	0.33**	0.21**	0.40**

*: p<0.05; **: p<0.01

positive correlation between Machiavellianism and neuroticism (r=0.21, p<0.01) and narcissism (r=0.33, p<0.01). There is a negative correlation between the psychopathy and agreeableness (r=-0.35, p<0.01), consciousness (r=-0.17, p<0.01), and life satisfaction (r=-0.12, p<0.05); and there is a positive correlation between psychopathy and narcissism (r=0.21, p<0.01). There is a negative correlation between the agreeableness (r=-0.19, p<0.01); and there is a positive correlation between neuroticism (r=0.18, p<0.01), consciousness (r=0.12, p<0.05), extraversion (r=0.14, p<0.01), openness (r=0.12, p<0.05), and narcissism (r=0.40, p<0.01). In other words, it can be said that there was moderate and weak relationships between dark triad personality traits, and, big five personality traits, narcissism and life satisfaction in term of concurrent validity. On the other hand, according to the concurrent validity, Machiavellianism does not have a statitically significant association with consciousness, extraversion, and

openness; and psychopathy does not have a statitically significant association with extraversion, openness, and neuroticism. In addition, narcissism does not have a statitically significant association with life satisfaction.

STUDY 3. Validity II

It has been aimed in this study that the predictive validity of the Dirty Dozen would be examined to obtain additional support for the validity of the Dirty Dozen. The predictive role of the dark triad on aggression and self-esteem has also been examined.

Participants

The sample of this study consisted of 375 university students 62% of whom were female. The mean age was 21.13±1.98.

Measures

The Buss Perry Aggression Questionnaire and Rosenberg Self-Esteem Scale have also been made use of in this study as well as the Dirty Dozen Scale.

Buss Perry Aggression Questionnaire (BPAQ): The BPAQ[17] consists of 29 items. BPAQ is comprised of four subdimensions; physical aggression, verbal aggression, anger and hostility. Turkish adaptation of this scale had been done by Demirtas-Madran.[18] Component analysis of have shown that the BPAQ explains

41.4% of the variance in aggression. The internal consistency reliability coefficient was found as 0.78, 0.48, 0.76, and 0.71, respectively.

Rosenberg Self-Esteem Scale (RSES: The RSES[19] consists of 10 items and each item is scored on a 1-4 scale. A sum of all score yields a total score ranges from 10 to 40 and higher score indicated that higher self-esteem. Turkish adaptation of this scale had been done by Cuhadaroglu.[20] The internal consistency reliability coefficients were found ranged from 0.77 to 0.88 and test-retest was found as 0.75.

Procedure

The regression analysis has been made use of to investigate the predictive validity of the Dirty Dozen.

Results

The results of the regression analysis, which was conducted to evaluate the predictive role of the dark triad on aggressiveness and self-esteem, are provided in Table 4.

According to the results, Machiavellianism is a statitically significant predictor of physical aggression. In addition, psychopathy is a statitically significant predictor of physical aggression, verbal aggression, anger, and hostility. Also, it has been revealed with the results that narcissism is also a statitically significant predictor of physical aggression, verbal aggression, anger, and hosti-

Table 4. Regression results of predictive validity

Predictor	Dependent variable	Unstandardized coefficients		Standardized coefficients	
		B	SE	β	t
Machiavellianism		0.20	0.05	0.20	3.58**
Psychopathy	Physical aggression	0.26	0.06	0.22	4.11**
Narcissism		0.13	0.04	0.17	3.41**
Machiavellianism		-0.01	0.03	-0.02	-0.26
Psychopathy	Verbal aggression	0.16	0.04	0.25	4.59**
Narcissism		0.12	0.02	0.30	5.66**
Machiavellianism		0.05	0.05	0.05	0.89
Psychopathy	Anger	0.21	0.06	0.22	3.76**
Narcissism		0.11	0.04	0.16	3.01**
Machiavellianism		0.01	0.05	0.01	0.24
Psychopathy	Hostility	0.12	0.05	0.12	2.13*
Narcissism		0.23	0.03	0.36	6.79**
Machiavellianism		-0.08	0.05	-0.09	-1.46
Psychopathy	Self-esteem	-0.04	0.06	-0.04	-0.64
Narcissism		0.06	0.04	0.09	1.60

*: $p<0.05$; **: $p<0.01$

lity. However, no dark triad dimensions have been found to be a statitically significant predictor of self-esteem.

STUDY 4. Reliability

It is expected that measurement tools are valid and reliable. For this reason, establishing validity requires establishing reliability as well. In this context, internal consistency and test-retest reliability of the Dirty Dozen have also been examined in the scope of this study.

Participants

The Test-retest Reliability has been investigated with 91 participants 61% of whom were female. The mean age was 20.62±1.32.

Procedure

For the whole study, the Cronbach's alpha coefficient has been calculated, and for each study, separately. In addition, the test-retest reliability of the Dirty Dozen for a 4-week interval has also been examined.

Results

The Test-retest reliability for 4-week interval has been found to be 0.80 for Machiavellianism. It was found as 0.79 for psychopathy and 0.83 for narcissism. The Cronbach's alpha coefficients have been calculated as 0.79 for Machiavellianism, 0.71 for psychopathy, and 0.87 for narcissism.

DISCUSSION AND CONCLUSION

In this study, the Dirty Dozen Scale, which was developed by Jonason and Webster[9] has been adapted into Turkish culture. According to results of the linguistic equivalency study, there is a high-level correlation between the Turkish form of the scale and the original form. In other words, the both forms have been observed to be equivalent in terms of linguistics.

According to the CFA, the structure of the Turkish version and the original version[9] coincide with each other. In addition, the results of the CFA, which was conducted for female and male participants, also showed that the structure of the scale is confirmed as is in the original version both gender. When the relations between the dark triad personality traits and 5-factor personality traits, narcissism and life satisfaction are examined it has been observed that there are statitically significant relations at various levels. In this context, these findings that are related with 5-factor personality traits and the dark triad

personality traits show similarities with the findings of Jonason and Webster.[9] In addition, the relations between the narcissism and dark triad personality traits agree totally with the findings of the original study. The findings on the relation between the 5-factor analysis and the dark triad personality traits show similarities with the findings of the other study.[1,20] However, some value showed that there are weak relationships between dark triad personality trait, and, big five personality trait, narciscism and life satisfaction.

In predictive validity studies, it has been revealed that the dark triad personality traits are important predictors of physical aggressiveness. In addition, it has also been revealed that narcissism and Psychopathy are the statitically significant predictors of verbal aggressiveness, anger and hostility. These findings seem consistent with the findings that are reported in the original scale[9] on which the study is based. Besides, the dark triad personality traits have not been observed to be associated with self-esteem. This finding is also consistent with the findings of Jonason and Webster.[9] In addition, the findings on self-esteem, psychopathy and Machiavellianism agree with the findings of Jonason et al.,[20] but the findings on the relation between self-esteem and narcissism do not agree. The fact that the relation between narcissism and self-esteem is positive might be related with the narcissism having positive properties like the proud due to the success of individuals and enjoying this situation;[4] however, when the fact that the negative properties of narcissism is measured in this study is considered, the situation in which there is no positive relation with self-esteem might be explained.

Four different reliability coefficients have been calculated for the reliability of Dirty Dozen Scale. According to these calculations, it has been observed that the internal consistency coefficients of the scale are over 0.70.[22]

Turkish version of the Dirty Dozen Scale was valid and reliable scale to measure dark triad personality traits. According to our personal experience, the dark triad personality traits are attracting quite attention by researchers in Turkey. For this reason we are expecting that, the Turkish version of the Dirty Dozen Scale will get attention of many researchers. In this manner, more information will be found about how the dark triad personality traits are seen in Turkish culture.

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