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The Developmental Process and the Psychometric Properties of the Dependent Personality Disorder Disposition Inventory for 15-18 Age Group Sample

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Abstract

This study, which utilized a psychometric procedures and empirical assessment procedures, aimed to develop a culturally sound, reliable, and valid inventory to assess the Dependent Personality Disorder Disposition levels of puberty age children at the age range of 15-18. 1130 participants, who have accepted to contribute to the study, have established the standardization sample and enrolled as test takers and responded to developed inventory via online MS-Teams platform. Delphi research for content validity check, Exploratory Factor Analysis and Confirmatory Factor Analysis showed that significant evidence existed to come up with a culturally non-biased, reliable, and valid inventory with 7 psychometrically positive items. The inventory was developed for diagnosis purposes and detection of dependent personality disorder disposition levels for providing individuals with necessary preventive psychological services. The development process and all the related statistical procedures have been defined and discussed in detail in the full article.

Introduction

The way a person behaves is a result of the way a person thinks and feels; and the way a person thinks and feels is related to the personality of that person (Bandura, 1969). A personality, on the other hand, is assumed to be disordered when it creates discomfort or adversity to that person or to significant others (Bornstein, 1997). According to the latest statistics derived from the studies of Binbay, Direk, Aker, Akvardar et. al. (2014), around 15% of the adult population suffer from personality disorders whereas this amount, as reported by Akyunus and Gençöz (2016), is 17% in Turkey. These percentages are enough to highlight the importance of the classification, diagnosis, and treatment of these psychological states. However, the most emphasis has been put on the diagnosis of personality disorders since identification and treatment are usually based on a reliable diagnosis of the psychological problem (Camilleri, 2018; Gjerde, Czajkowski, Røysamb, Ørstavik, et. al., 2012). Clinicians, researchers and counselors have long been acknowledging the importance and urgent need of developing a reliable and valid psychiatric measurement instrument to diagnose and make meaningful decisions regarding personality disorders (Butcher, 1972; Cameron, 1963; Camilleri, 2018; Oltmanns, Smith, Oltmanns, & Widiger, 2018; & Ormel, Oerlemans, Raven, Oldehinkel, & Laceulle, 2020). Yet, it has taken a long time to come up with diagnostic criteria with operationalized definitions. Despite the fact that personality disorders still remain difficult to be measured by subjective interviews, clinicians had no

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other choice for the purpose of diagnosis. To understand the developmental process of operationalized definitions and to get deeper insight into how a psychometrically sound measurement tool has been developed within the mainstream of the current study, it is necessary to look back to the previous concerns regarding to the construct.

The phenomenon of dependent personality trait of human being has long been subject of debate, and researchers have put considerable effort to reach a consensus definition of the term. Dependent personality as a type of personality disorder has taken its place in the Diagnostic and Statistical Manual fourth edition (DSM-IV) (American Psychiatric Association, 1994) and the International Classification of Disease (ICD-10) (World Health Organization, 2004) after a long negotiations and adaptations (Bornstein, 2003). Because it was not expected for a patient to fall into a single category, new adaptations have been made to solve the problem, and three distinct clusters were generated in the DSM-5 (American Psychiatric Association, 2013). These are namely: Cluster A: Personality Disorder characterized by 'suspicious' personality; Cluster B: Personality Disorder characterized by 'emotional and impulsive personality'; and Cluster C: Personality Disorder characterized by 'anxious' personality traits. Based on these classifications, different tools were produced to serve for diagnosis purposes. When evaluated, it is vivid that those tools are generally composed of semi-structured or structured clinical interviews with subjective scoring procedures (ex: Structured Clinical Interview for DSM- IV Axis- II Personality Disorders (SCID-II)). SCID-II, which was developed by Spitzer and Williams, (1985), is based on structural personal judgement. Such diagnosis strategies are carried out by trained interviewers who generally feel the need to ask follow-up questions with subjective perception, which, in turn, create time consuming and out of scope practice of consultation (Costa & McCrae, 1990). In addition, there is no questionnaire or a valid and a reliable inventory to assess the extent to which patients possess a degree of personality disorder under a related cluster. Another screening tool, which was developed by Tyrer, Morgan, and Cicchetti (2004), requires further research since the questionnaire lacks sensitivity, specificity and validity issues when compared to the standards set by Cicchetti (2001) and Cicchetti et al. (1995).

The search for a reliable and valid inventory to be used for the purpose of therapeutic diagnosis, clinical diagnosis and school counseling process revealed that there is no such an inventory developed to diagnose dependent personality according to the criteria set by DSM-V and ICD-11 (World Health Organization, 2019) in Turkish culture. Considering the Turkish clinical and cultural context, the current study endeavors to develop *Dependent Personality Disorder Disposition Inventory* (DPDDI), in an effort, to produce a valid and a reliable measurement model to assess the extent to which targeted audiences are (15-18 age group community and clinical sample) disposed to experience dependent personality disorder in their further lifespans.

The reason behind the urgent effort of developing a diagnosis tool for dependent personality disorder is related to the fact that individuals who are disposed to have dependent personality disposition are at high risk of being addicted to another person in their lifespans (Clark, 2009; Sümer, Oruçlular, & Çapar, 2015). Therefore, clinical and communal diagnosis should detect individuals who are at this risk group and implement prevention programs to help them become independent individuals and to break the chain of addictive behavior cycle.

The basic premise behind concentrating on 15-18 age group is because dependent personality emerges during the puberty period (Chen, 2005; Fleming, 1985; Slowik, 2013). The pioneers of the field assert that the reason they call this particular age group as *risk group* is because the pre-frontal cortex of a

brain, which is responsible for analytic thinking, starts to develop at the ages of 14 and 15 and the process of development is completed by the age of 20s (Kantor, 2010; Lenzenweger & Clarkin, 2005; Oltmanns & Emery, 2012; Wilmshurst, 2009). With respect to this reason, clinical diagnosis is suggested to be started between the ages 15 and 18 in order to detect any positive inclination towards personality disorder and implement necessary prevention programs to avoid any further behavioral addiction to occur (Arntz, 2012).

Consideration of this context underlines the urgent importance of developing a culturally sensitive, unbiased, reliable, and valid diagnostic tool with high psychometric properties to detect individuals who are disposed to experience dependent personality disorder in the targeted community and clinical populations.

Theoretical Foundation of Dependent Personality Disposition

Addiction is a phenomenon that has got various types and that increasingly continuous in present world. Although addiction, as a term, was previously used to refer pathologies such as alcohol, drug, and tobacco usages, today it has got an even wider coverage. Review of the related literature showed that researchers tended to categorize some human behavioral patterns as addictive since they discovered that people who suffer from those behavioral patterns show similar symptoms to those of alcohol, drug and tobacco addictions (Aydın, 2016; Tarhan & Nurmedov, 2019; Yörükoğlu, 2002).

The term behavioral addiction was lately appeared in DSM 5 under Cluster C of Personality Disorders (see Table 1) because it was difficult to diagnose and to distinguish acceptable normal behavioral patterns from those of pathological ones (McClintock & McCarrick, 2017). For this reason, it has taken a long time for behavioral addiction to take place in DSM-V with operational definitions corresponding to its behavioral patterns. In addition, studies in favor of expanding on the types of behavioral addiction have been increased in number for the last decade. As Ormel, Oerlemans, Raven Oldehinkel and Laceulle (2020) assert, personality of a person is developing and changing in an enormously wide range of continuum in life and it is therefore not easy to categorize people in terms of their personality traits because it is difficult to distinguish those personality traits from each other. Ormel et al., however, imply that some patterns of problems regarding personality are mutual in many people and shared by both DSM-V and ICD-11 (see Table 1).

Unpacking DSM-V and ICD-11 reveals that Dependent personality disorder, as a type of general personality disorder, is characterized with submissive, pervasive, passive, and self-defeating personality traits. The most common type of behavioral patterns that people who suffer from dependent personality disorder display are weak response to the demands of life, weak resistance to live alone and strong fear of abandonment (McClintock & McCarrick, 2017). Dependent personality disorder is a pattern of thinking, which constrains a person's thinking to identify and follow his/her own needs and feelings (Disney, 2013). Disney also added that dependent personality disorder is an enduring pattern of dependent and submissive behavior. These people are exceedingly dependent on other people for advice and reassurance. They are often unable to make everyday decisions on their own, they feel anxious and helpless when they are alone (Gude, Hoffart, Hedley, & Rø, 2004). Disposition dimension of the dependent personality, however, is *an inclination* and *a characterological profile* within which a person has a potential to be addictive to a significant person (Leising, Sporberg, & Rehbein, 2006). A considerable body of knowledge has accumulated to indicate that young people, in the age range of 15-18, who are positively disposed to have dependent personality disorder, typically are in need of surrounding themselves with needy people, are in struggle to prove that s/he is good enough to be loved

by others, are deeply disappointed if somebody refuses their help or does not care about their advice, are highly inclined to be in the helping role and they blame themselves for most of the time (Krueger, Derringer, Markon, Waston, & Skodol, 2012; Samuel, Carroll, Rounsaville, & Ball, 2013). They extensively feel themselves comfortable when they are perceived irrevocable by another person and the relationship is usually one-sided and worrying (Widiger, Livesley, & Clark, 2009). Even though the difference between normal and addictive personality disorder might not seem to be quite visible, pioneers of the field have defined 'disposition toward personality disorder' as *one-sided relationships* (Kantor, 2010; Lenzenweger & Clarkin, 2005; Oltmanns & Emery, 2012; Wilmshurst, 2009). A person who is positively disposed to have dependent personality disorder display such *one-sided relationship* pattern. As explained, lack of confidence and competence are not identifying features of the construct (Oltmanns & Emery, 2012). But for some researchers, a positively disposed person may be misinterpreted because they assume responsibility for their lives – even, sometimes, what to eat, where to eat, what to wear, what jobs to take, where to live and where to go for holiday (Yam & Simms, 2014). From the perspective of dispositional dimension, it is comfortable to indicate that the related literature well frames the concept with dedicated behavioral patterns associated with *'disposition toward dependent personality disorder'*. The reason many clinicians and researchers are after for a reliable diagnostic tool is related to the difficulty of detecting depended-personality-disposition by subjective interviews.

Most recent research demonstrates that people who suffer from dependent personality disorder can and should receive treatment (Coffman & Swank, 2020; Daire, Jacobson, & Carlson, 2012; Knudson & Terrell, 2012; Nordgren, Richert, Swensson, & Johnson, 2020). But, the idea, which is highly suggested and supported by the milieu, is to prevent young people to have dependent personality disorder before it happens to occur and become chronic, and this is only possible when youngsters are provided with preventive psychological treatment as soon as a positive disposition is detected at the ages of 15-18 (Daire, Jacobson, & Carlson, 2012). It is safe to say at this point that this study harmonized theoretical perspectives and came up with a strong theoretical baseline and content domain for *dependent personality disorder disposition* as a result of the Delphi research supported by content experts.

Table 1. The types of personality disorder and their characteristics in personality as they are classified by DMS-V and ICD-11 classification systems

Personality Disorders	**Characteristics of Disorders in Personality**
CLUSTER A ('Suspicious')	
	Interpretation of people' actions as deliberately demanding or threatening
	Expansive paranoid
Paranoid	Panic
	Querulant
	Paranoid
	Sensitive paranoid
	Indifference to social relationships and restricted range of emotional experience and expression
Schizoid	Preference for fantasy
	Solitary activities
	Limited capacity to express feelings

Schizotypal	Deficit in interpersonal relatedness with peculiarities of ideation, odd beliefs and thinking, unusual appearance and behavior
CLUSTER B ('Emotional and Impulsive')	
Borderline	Pervasive instability of mood, interpersonal relationships and self-image associated with marked impulsivity, fear of abonnement, identity disturbance and recurrent suicidal behavior
Antisocial	(Dissocial) Pervasive pattern of disregard for and violation of the rights of others occurring since age of 15 years
Narcissistic	Excessive emotionality and attention-seeking, suggestibility, and superficiality.
Histrionic	Pervasive grandiosity, lack of empathy, arrogance, and requirement for excessive admiration Hysterical Psychoinfantile
CLUSTER C ('Anxious')	
Obsessive-compulsive	(Anakastic) Preoccupation with orderliness, perfectionism and inflexibility that leads to inefficiency Feelings of doubt Feelings of rigidity
Avoidant	(Anxious) Pervasive social discomfort, fear of negative evaluation and timidity, with feelings of inadequacy in social situation Feelings of tension Feelings of apprehension Tendency to avoid daily routines
Dependent	Persistent dependent and submissive behavior. Pervasive passive reliance on people. Great fear of abandonment. Weak response to the demand of daily life. Asthenic Inadequate Passive Self-defeating

Note: The use of terminology is generally the same in both classification systems. However, slight differences in ICD-11 were presented in parenthesis.

Methodology

Research Design and Purposes of the Study

The current research, which employed a descriptive design, was supported by the psychometric theory of Nunnally and Bernstein (1994) to develop and test the psychometric properties of *Dependent Personality Disorder Disposition Inventory* (DPDDI). The rationale behind utilizing such a design is causally related to providing evidence regarding if the observations obtained by the developed inventory

is due to a bias or a true difference in the variables being measured. Therefore, the purposes of the current research study are: (1) to develop a culturally sensitive instrument that can diagnose the extent to which individuals in the 15-18 age range are disposed to possess depended personality disorder as defined by DMS-V and ICD-11; (2) to assess the psychometric properties of the developed inventory and (3) to figure out the factorial validity of the inventory via Confirmatory Factor Analysis (CFA).

Item and Scale Development

The initial phase of the development process was to make sure of the theoretical orientation of the construct, which would either have led to culturally biased structure or culturally valid structure (Hambleton, Merenda, & Spielberger, 2005). For the shake of the purpose, a community of experts in the field of psychiatry and clinical psychology were attained as content experts to discuss the operational suitability of the construct to the Turkish culture and context under the mainframe of theoretical foundation section of this article, DSM-V and ICD-11. As a result of 6 months of Delphi process, experts, considering internationally accepted classification systems, evaluated the suitability of the operational definitions for developing a psychometrically sound inventory.

Following the initial phase, an item pool consisting of 20 items were written. As Hambleton, Merenda, and Spielberger (2005) suggested, univariate structure inventories should contain as minimal number of items as possible since youngster's motivation span is too short to adapt to long inventories.

In the second phase, experts evaluated each item in the item pool in terms of their relevance against to the content domain. The current research followed the procedures set by Grant and Davis (1997) for the Delphi phase and content experts' evaluation phase. As a result of this evaluation, 10 of the 20 items were found to be slightly irrelevant and they were taken out from the item pool. The rest of the 10 items were found to be relevant to the corresponding content domain as they were evaluated by experts on a four- point scale developed for assessing content validity index of each item. The content validity indices ranged from .90 to 1, which indicated high relevance to the content domain.

As a third step, experts discussed about the scale types on which each item would be sequenced by the test takers. Experts agreed upon six points forced choice Likert type scale as to 1 = strongly disagree, 2 = disagree, 3 = partially disagree, 4 = partially agree, 5 = agree, 6 = strongly agree for indication of the degree to which participants agree with each statement.

Standardization Sample and Empirical Data Collection Procedure

After eliciting necessary permissions from the Ministry of Education of Turkish Republic of Northern Cyprus to collect data, a highly representative standardization sample was considered. 3722 participants from all over the secondary and high schools connected to the Ministry of Education of Turkish Republic of Northern Cyprus were selected by stratified random sampling method as a community sample. However, only 1620 of them voluntarily accepted to participate in the study. As a result of initial analysis, the distribution of participants according to the defined strata yielded that some participants should have been removed from the study to maintain a balanced categoric distribution. For that reason, 490 participants were removed from necessary categories and 1130 participants were left to continue with the analysis. Even though more than half of the participants either rejected to participate or eliminated for some statistical reasons, more than enough representative number of participants were available to contribute to the study.

The standardization sample included participants from Famagusta region (n = 191, 16.9%), from Nicosia region (n = 214, 18.9%), from Kyrenia region (n = 199, 17.6%), from Carpase region (n = 176, 15.6%), from Morphou region (n = 177, 15.7%) and from Lefka region (n = 173, 15.3%) of Northern Cyprus. Ages of participants ranged from 15 to 18 with a mean age of 16.47 (SD = 1.12), and they were distributed as male (n=566, 50.1%) and female (n=564, 49.9%) in terms of gender.

Since we were provided with the contact information of the participants, we added them to MS-Teams, which was used as the platform to collect data. By using MS-Teams as an interactive software, we informed the caregivers of our participants about the purpose of this study, their roles and rights as primary caregivers and their rights as participants in the study. After we have received completed informed consent forms, we provided detailed information about the inventory and then sent the inventory forms through MS-Teams software. As a result, 1130 participants perfectly responded to the inventory in the given period.

Empirical Data Analyses Procedures

To test the assumption that the construct is accurately measured at least at the interval level by the items produced, an Exploratory Factor Analysis (EFA) was used to test the observed items in terms of their relevance to the construct being measured. Additional EFA was used to check if there was any multidimensionality situation with the distribution of the given items. The results of EFA would also provide with standardized variables, which is essential for developing a standardized measurement tool. The associations between the items were evaluated on the basis of the correlations matrix, factor loadings (regression weights), component matrix, rotated component matrix, eigenvalue of 1 and cumulative variance explained by the factors above the eigenvalue of 1. To check the multi-dimensionality, Principal Component Analysis (PCA) method was preferred with a varimax rotation method because of their combined power to extract all components that have eigenvalue of more than 1.

A group of participants (n = 60) from the actual sample (n = 1130) of the study were considered to test the time interval test-retest reliability of the scale. This specific group of people were requested to retake the inventory three months apart to establish another set of data from the same participants regarding to the same items at a different time. To identify the consistency between the two sets of scores (time-one scores, and time-two scores) Pearson's correlation coefficient *r* was calculated. The equivalency of variance between time-one and time-two administrations was additionally tested by paired sample T-test analysis with the mean scores and F tests to see the variation of scores for each item and participants across time. The time interval between the two administrations was given to be neither too long, in order not to allow the construct to change in participants, or too short, in order not to let them recognize their previous responses to the items (Fraenkel & Wallen, 2006). For *internal* consistency, Cronbach alpha was calculated for the standardization sample following time *interval* test-retest consistency reliability check.

As a final step of analysis, Confirmatory Factor Analysis (CFA) was undertaken to confirm the measurement model derived from EFA because CFA is also considered to be the most significant and powerful technic for testing a proposed body of theoretical knowledge against observed data (Publication Manual of American Psychological Association, 2019 [APA 7th Ed.]). The assumption here is to test the existence of observed variables as representatives of predefined latent variables. One other reason for using CFA as a follow up analysis after conducting EFA was related to the fact that EFA was not capable of detecting non uniform and/or uniform item bias (Sass, 2011). CFA is highly

recommended when a measurement model is proposed with a strong theoretical framework, so one other reason for using CFA is that the construct of Dependent Personality Disorder Disposition has a strong theoretical foundation supported by a significant number of studies and reports (Chen, 2007; Hu & Bentler, 1999; Karahan & İskifoğlu, 2007).

For the current research, researchers preferred to use the following indices and corresponding standards to evaluate the model fit of the proposed measurement model (Chen, 2007; Hu & Bentler, 1999; Milfont & Fisher, 2010; Sass, 2011): chi-square (χ^2), degrees of freedom (df), the ratio of chi-square to degrees of freedom (χ^2/df < 4.0), the root mean square residual (RMR < .06 = good fit; values between .06 and .08 as adequate fit; and values between .08 and .10 as mediocre fit), adjusted goodness of fit index (AGFI ≥ .95 = good fit), comparative fit index (CFI ≥ .95 = good fit), root mean square error of approximation (RMSEA < .06 = good fit; values between .06 and .08 as adequate fit; and values between .08 and .10 as mediocre fit), standardized root mean square residual (SRMR < .06 = good fit; values between .06 and .08 as adequate fit; and values between .08 and .10 as mediocre fit).

Results of Analysis

Pilot Study and Exploratory Factor Analysis (EFA)

The development process of the Dependent Personality Disorder Disposition Inventory (DPDDI) proceeded with 10 items since the content experts have eliminated some items because they believed those items have potentially caused cultural bias. Therefore, the next step was to conduct an exploratory factor analyses with the assumption of matching observed variables with the main content being measured. When the analysis outputs regarding to the initial exploratory factor analysis were evaluated, the results showed that the factor loadings for items ranged from .215 to .790 with 39.312 % of explained variance (see Table 2 below).

Table 2. Emerging results regarding to EFA and DFA

Items	Initial Exploratory Factor Analysis	Second Exploratory Factor Analysis	Initial Model Confirmatory Factor Analysis	Modified Model Confirmatory Factor Analysis
ITEM1	.677	.682	.619	.614
ITEM2	.634	.622	.558	.588
ITEM3	.637	.665	.590	.551
ITEM4	.376	-	-	-
ITEM5	.790	.773	.746	.745
ITEM6	.730	.733	.693	.724
ITEM7	.723	.731	.680	.670
ITEM8	.633	.639	.565	.516
ITEM9	.630	.639	.574	-
ITEM10	.215	-	-	-
Explained Variance	39,312	47,242	47,242	49,190
KMO and Bartlett's Test Approx. Chi-Square	3510.33	2820.55	-	-
df	45	28	-	-
Sig.	.000	.000	-	-
Cronbach Alpha	.813	.839	.839	.822

CMIN	-	-	266,098	39,713
DF	-	-	20	13
CMIN/DF	-	-	13,305	3,054
RMR	-	-	.086	.058
AGFI	-	-	.908	.950
CFI	-	-	.912	.961
RMSEA	-	-	.104	.079
SRMR	-	-	.0487	.0321

Although the scree plot with the defined eigenvalue showed two components, the second component included all negative loadings with the corresponding items. Items with low loadings below .40 (item 4 and item 10) were deleted from the list and a second exploratory factor analysis was conducted with the remaining eight items. The second attempt yielded a significant KMO result, with all loadings above .60 and with an explained variance of 47.242 (see Table 2). Cronbach alpha level after second factor analysis was computed as $\alpha = .839$.

Confirmatory Factor Analysis (CFA)

Dependent Personality Disorder Disposition was such a construct that was supported by a strong theoretical foundation rooted back to Diagnostic and Statistical Manual (DSM-V), the International Classification of Disease (ICD-11) and American Psychological Association (APA 7). Items, which were designed to measure the extent to which a person is disposed to experience depended-personality disorder, have already been rendered to eight items by exploratory factor analysis. However, it is very well-known fact in the related literature that exploratory factor analysis does not ensure about non uniform and/or uniform item bias because EFA runs tetrachoric correlation for the interpretation of associations rather than polychoric correlation (Hu & Bentler, 1999). Based on the reasons proposed, the study continued with conducting confirmatory factor analysis with the remaining eight items.

Considering the standardized estimates for factorial validity, the results of the initial model confirmatory factor analysis showed a mediocre fit to the observed data, $\chi^2(df = 20) = 266.098$, $p < .0001$, $\chi^2/df = 13.305$, RMR = .086, AGFI = .908, CFI = .912, RMSEA = .104 and SRMR = .049. As a follow up interpretation, the regression slopes, correlation matrix and modification indices were evaluated together as suggested by Chen (2007). As a result of this evaluation, the parameters suggested to delete item 9 because it, according to modification indices, caused item bias with a low regression weight. In addition, modification indices suggested to correlate residuals of item 3 and item 8 for maximum parcel of change in fit indices. Therefore, a second modified model confirmatory factor analysis was conducted with the remaining seven items and with new conditions (see Figure 1 below and Table 2 above). As a result of the suggested modifications, the modified model produced a significant parcel of change with a good fit for the observed data, $\chi^2(df = 13) = 39.713$, $p > .05$, $\chi^2/df = 3.054$, RMR = .05, AGFI = .95, CFI = .96, RMSEA = .079 and SRMR = .0321.

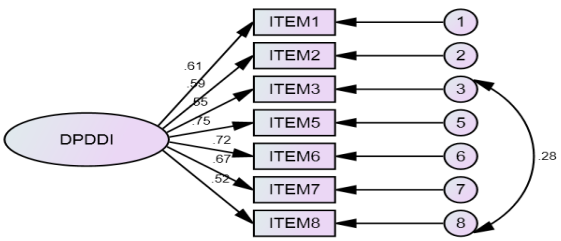

Figure 1. Regression slopes of latent variable corresponding to observed items.

Sensitivity and consistency are quite important for psychiatric and psychological measurement for several reasons. It is thereby true to show evidence regarding how sensitive the measurement tool measures what it intends to measure, and this is about reliability (American Psychological Association, APA 7th Ed., 2019). For this reason, a group of participants (n = 60) from the actual sample (n = 1130) were requested to re-take the inventory three months later. It was evident that the DPDDI has high test-retest reliability with significantly high correlations and with nonsignificant t-values between time interval administrations (see Table 3 below).

Table 3. Pearson Correlation Coefficients and Paired Samples t-Test results

Items	Mean(SD)	r	t-test (df)	variance	f-test (df)
ITEM 1					
Time 1	4.08(1.41)	0.86[a]	0.34(59)[b]	2.01	1.58(58)[c]
Time 2	4.05(1.44)			2.08	
ITEM 2					
Time 1	3.78(1.61)	0.94[a]	1.73(59)[b]	2.61	0.38(58)[c]
Time 2	3.65(1.69)			2.88	
ITEM 3					
Time 1	3.40(1.87)	0.93[a]	1.64(59)[b]	3.53	1.37(58)[c]
Time 2	3.25(1.85)			3.45	
ITEM 4					
Time 1	3.71(1.46)	0.86[a]	-0.52(59)[b]	2.14	1.63(58)[c]
Time 2	3.76(1.34)			1.81	
ITEM 5					
Time 1	3.41(1.54)	0.81[a]	0.41(59)[b]	2.38	0.36(58)[c]
Time 2	3.36(1.51)			2.30	
ITEM 6					
Time 1	3.96(1.43)	0.74[a]	-0.87(59)[b]	2.07	0.085(58)[c]
Time 2	4.08(1.45)			2.11	
ITEM 7					
Time 1	3.43(1.30)	0.94[a]	0.77(59)[b]	1.71	1.71(58)[c]
Time 2	3.38(1.41)			2.00	
OVERAL					
Time 1	25.80(6.64)	0.95[a]	0.89(59)[b]	44.20	0.017(58)[c]
Time 2	25.55(6.49)			42.22	

[a] $p < 0.001$. (N=60)
[b] $p > 0.05$. (N=60)
[c] $p > 0.05$. (N=60)

Discussion and Conclusion

It was deemed urgently necessary to develop DPDDI and assess the psychometric properties for both communal and clinical diagnosis of dependent personality disposition. The first remark to make of this

study is that the construct under investigation is based on a strong theoretical framework. As Bowlby nearly 40 years ago (1982) stated, without an extensive body of knowledge and experience the construct of codependency or so-called dependent personality trait cannot be measured by an inventory. It has been nearly four decades to establish a set for developing an inventory with a strong theoretical background. Yet, some intriguing questions remained. For example, how accurately the provided definitions match with the cultural variations across the world? The existing literature, however, does not provide any empirical response to this question. With this being the case, we preferred to begin the development process of the DPDDI with a detailed content validity study including experts of the targeted language and culture, with a strong background of the construct. In this phase of this study, experts judged each item in the item pool against universally accepted definitions and classifications systems (DSM-5 and ICD-11) in terms of each item's relevance to defined classification systems and cultural norms. As a result of this attempt, 10 of the 20 items were removed from the item pool not because they were found to be irrelevant to the defined classification systems and content domains but because those items were irrelevant to the Turkish culture, which would have created cultural bias unless they were not removed. Therefore, we eliminated the risk of having culturally biased inventory since the results of the six months Delphi study yielded quite high numbers of content validity indices ranging from .90 to 1. Expert judgments also revealed to have six points forced choice dichotomous scale for the inventory because they asserted that the phenomenon being measured required test takers not to be undecided or neutral about the items and/or statements. Hambleton, Merenda, and Spielberger, (2005) supports this approach by indicating that psychological constructs should be measured on dichotomous scales because a psychological state exists or does not exist in terms of clinical perspective. As reviewed and detected, most recent psychiatric and psychological perspectives are in line with the suggestions of Hambleton (Sinharay, 2016; van Krimpen-Stoop & Meijer, 1999). It has therefore become safe to indicate that DPDDI with its six-point forced choice scale and 10 items was ready for further pilot study.

When the results of initial exploratory factor analysis were evaluated under the light of correlation matrix, two factors appeared. However, one factor included items with negative and extremely low loadings. One other factor, on the other hand, included items with positive and high loadings except for two items. Based on the assumption regarding the ratio of explained total variance, which was 39.312 in this case, a second exploratory factor analysis, without those two items with low loadings, was conducted. The results showed significant improvement in terms of all parameters. The eight-item model seemed to be acceptable to be used with targeted population to collect data regarding dependent personality disorder disposition. To maintain and increase the construct validity of the inventory, Confirmatory Factor Analysis was conducted. After some adaptations and corrections, single latent variable univariate measurement model with seven items showed significant improvement with high factor loadings, 49.190 % of explained total variance, remarkably high fit indices, and an alpha value of .82. The most striking point is the amount of explained total variance, which is almost 50 %. This means that DPDDI, with the specified measurement model, can measure the targeted construct in the targeted population in the ratio of 50 %, which is a considerably high and acceptable ratio according to the pioneers of the field (Nunnally & Bernstein, 1994; Sass, 2011). The effort of developing an inventory for GPs, counsellors, psychologists, psychiatrists and researchers to measure any positive inclination toward dependent personality disorder yielded a reliable and valid tool, which can be used to diagnose and detect the existence of any positively generated disposition of the youth in the age range of 15-18 in Turkish language and culture. No-doubt that further research will be required to make further analysis with respect to cultural equivalency of this inventory across different cultures and languages by conducting invariance analysis. This, however, is the fruitful side of this research that will

lead and motivate further studies to test the hypothesis regarding the universality of such psychological constructs and their forms of existence across cultural groups.

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