Psychometric Properties of Difficulties of Working with Patients with Personality Disorders and Attitudes Towards Patients with Personality Disorders Scales

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ABSTRACT

Introduction: In this study, we aimed to develop two reliable and valid assessment instruments for investigating the level of difficulties mental health workers experience while working with patients with personality disorders and the attitudes they develop to the patients.

Methods: The research was carried out based on the general screening model. The study sample consisted of 332 mental health workers in several mental health clinics of Turkey, with a certain amount of experience in working with personality disorders, who were selected with a random assignment method. In order to collect data, the Personal Information Questionnaire, Difficulty of Working with Personality Disorders Scale (PD-DWS), and Attitudes Towards Patients with Personality Disorders Scale (PD-APS), which are being examined for reliability and validity, were applied. To determine construct validity, the Adjective Check List, Maslach Burnout Inventory, and State and Trait Anxiety Inventory were used. Explanatory factor analysis was used for investigating the structural validity, and Cronbach alpha, Spearman-Brown, Guttman Split-Half reliability analyses were utilized to examine the reliability. Also, item reliability and validity computations were carried out by investigating the corrected item-total correlations and discriminative indexes of the items in the scales.

Results: For the PD-DWS KMO test, the value was .946; also, a significant difference was found for the Bartlett sphericity test ($p < .001$). The computed test-retest coefficient reliability was .702; the Cronbach alpha value of the total test score was .952. For PD-APS KMO, the value was .925; a significant difference was found in Bartlett sphericity test ($p < .001$); the computed reliability coefficient based on continuity was .806; and the Cronbach alpha value of the total test score was .913. Analyses on both scales were based on total scores.

Conclusion: It was found that PD-DWS and PD-APS have good psychometric properties, measuring the structure that is being investigated, are compatible with other scales, have high levels of internal reliability between their items, and are consistent across time. Therefore, it was concluded that both scales are valid and reliable instruments.

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Key words: Personality disorders, difficult patient, attitudes, validity and reliability

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Introduction

In general medicine, healthcare workers define the individuals who do not have serious medical problems, who mostly demonstrate nonspecific complaints and psychosomatic symptoms, and who are stringent, demanding, and aggressive as well as those who pursue secondary gains as "difficult patient" and refer some of these to psychiatric treatment (1,2). In psychiatry, individuals who show serious disruption in psychological structure and personality and those who are generally difficult to treat are considered as difficult patients. In the study by Koekkoek et al. (2), in which 94 studies related with the perceptions of patients by healthcare workers working in the field of psychiatry were reviewed, it was reported that difficulty was defined in three main

areas related with individual, inter-personal, and social factors, and these patients were recruited into three groups. The first group included individuals with clear psychiatric symptoms (such as hallucination and delusion), the second group included patients who experienced ambivalent feelings, and the third group included individuals with lesser psychiatric symptoms who were not considered to be ill. In the studies reviewed within the scope of the abovementioned study, it was found that symptoms including depression, suicide, and self-injury were observed in the patients in the second group in addition to compulsive behavior. The early data of a few experimental studies related with perception of difficult patients (2,3) reported that people with a personality and psychotic disorders were considered as difficult patients of the highest rate, and these disorders were followed by mood disorder.

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It has been reported that this perception is created because of the following reasons: patients being demanding and focused on their rights in case of personality disorders (PD), patients withdrawal and need for much effort for treatment in case of psychotic disorders, and dependence and pessimism of patients in case of mood disorders. In the study by Howes, Weaver, and Tyrer (4), it was reported that a clinician working in the field of psychiatry regarded patients with PD as more difficult patients compared with all other patient groups.

Many studies related with the perception of difficult patients and attitudes toward these patients have commonly reported that healthcare workers in the field of psychiatry show negative attitudes most commonly toward patients with PD, have distant feelings similar to those of a stranger, particularly toward patients who have destructive behavior, including self-injury and suicide, perceive these patients as angry and manipulative, and find it difficult to feel empathy for these patients (5,6,7). In another study performed by Thylstrup and Hessen (8), in which the emotional reactions of mental healthcare professionals toward patients with PD who used substance, it was reported that they had formal, cold, and detached feelings toward the cluster B patients with PD included in DSM Axis II, they had feelings of helpfulness toward Cluster C patients with PD, and they did not show a certain emotional reaction to Cluster A patients with PD. In further analysis, it was reported that helpfulness that appeared to be related with Cluster C was related with avoidant PD, and detachment that appeared to be related with Cluster B was related with antisocial PD. In an experimental study performed by Rossberg et al. (9), in which countertransference emotions that developed against patients with PD were examined, similar results were observed; it was reported that Cluster A and B patients with PD evoked more negative and less positive countertransference reaction than Cluster C patients with PD.

Although a significant dimension of the treatment course in psychiatry is determined by clinical symptoms and noncompliant behavior, the other dimension is affected by healthcare workers working in the field of psychiatry and perceptions and attitudes that they develop toward patients. Most of the time, labeling an individual as "difficult patient" determines the diagnostic and therapeutic course by affecting the behavior and attitude of healthcare workers working in the field of psychiatry toward the patient. Emotional reactions developed against patients were defined as countertransference by Freud in the early period of psychoanalysis, and it was emphasized that these emotions should be addressed (9). Gabard (10) reported that countertransference reactions were unavoidable, manifestation of these reactions to a small extent would provide information regarding the relationship between the patients and the therapist for "understanding what is being put on the stage again" but may have destructive effects if they had a nature of applying pressure and burden on the patient. Odağ (11) stated that experiences of the therapist originating from his/her own early childhood affected what he/she felt for the patient and emphasized the importance of recognizing these experiences. In the study by Betan et al. (12), in which the countertransference reactions of 181 psychiatrists and clinical psychologists related with

patients who showed Axis II symptoms were examined, these reactions were evaluated in relation with eight factors. Most of the experimental studies that examine this subject on the clinical area, albeit in a limited manner, have shown that psychiatrists and nurses develop negative and complex countertransference emotions mostly toward patients with PD, particularly patients with borderline PD. In addition, they show a tendency to dislike these patients, do not prefer to take care of them voluntarily, think that patients with PD in inpatient services are difficult to manage, perceive them to be manipulative and annoying individuals who try to draw one's attention and create a threat of suicide, and have a higher rate of preference for adopting an approach of containment for these patients (9,13,14,15,16).

Although the emotional reactions of healthcare workers in the field of psychiatry to patients have a dimension that disrupts the professional relationship and causes ethical problems, they also have a useful aspect that provides information regarding the dynamics of the patient. Particularly in PD where primitive defenses including splitting, denial, and projective identification are prominent, the therapeutic relation continues almost on a basis of relational distortions and transference-countertransference processes. Direction of psychiatrists who work with patients with PD to examine the meaning of their own reactions in the relationship with the patient constitutes a significant part of the therapeutic process. The difficulties and interpersonal conflicts and problems of the patient can be examined and the diagnostic and therapeutic process can be understood more deeply by way of recognition of these reactions and by working on them. However, it is not easy to understand the reactions directed toward the patient and use them for the benefit of the patient. Although the transference and countertransference processes occur in the special relation between the patient and the therapist/psychiatrist, they also involve mutual attitudes toward similar patient groups, as reported in many abovementioned studies. In many studies, the emotional reactions and attitudes of the healthcare workers in the field of psychiatry to patients showing PD as well as the underlying reasons have been examined, and some scales that assess emotions, perceptions, and attitudes have been developed for this objective (2,5,14). Bowers et al. (5,13) who conducted significant studies with patients with severe PD conducted a project to define both the attitudes of nurses toward these patients and the underlying factors as well as to provide educational and supportive strategies for the development of positive attitudes. For this project, a question list was developed. The first part of this list was composed of 37 items assessing emotional statements related with patients with PD, of which eight items assessed the attitudes toward treatment (5). This question list was given to 121 nurses who were working in three high-security hospitals in England, and the attitudes of the nurses were examined by factor analysis method. Bodner et al. (14) developed two scales to examine the attitudes of healthcare workers in the field of psychiatry toward patients who showed borderline PD, of which 37 items involved cognitive attitudes and 20 items involved emotional attitudes and examined the attitude differences between psychiatrists,

psychologists, and nurses. In another study conducted by Black et al. (17), in which attitudes toward patients with borderline PD were examined, a question list was given to 706 mental healthcare workers composed of different occupations and their attitudes toward mental care and their emotions and behaviors related with empathy and optimism regarding treatment were examined. Another scale that is used to examine the emotional reactions of mental healthcare workers to patients is Feeling Word Checklist (FWC-58) (8,9,19). FWC-58 was developed for the first time by Whyte et al. (18) by examining the dialogue of a nurse with 10 patients in a psychiatry setting using the Q-analysis technique, which was a mathematical technique, and by defining different answer types, including answers directed to diagnosis, character, and conflict. Subsequently, this scale was expanded to seven subscales by Rossberg et al. (20).

Although there are scales developed or adapted to assess the perceptions and attitudes of mental healthcare workers toward different patient groups in Turkey (21,22,23), lack of special experimental-clinical studies and measurement tools directed to examine perceptions and attitude toward patients with PD and limitation of the studies in this area to case presentations make it difficult to examine the attitudes and difficulties experienced. It is clear that we need measurement tools (involving cultural properties) directed to assess perceptions and attitudes of nurses and other mental healthcare workers who work intensively with patients with PD in wards and who experience significant difficulties related with PD.

Based on this absence, we aimed to develop two measurement tools directed to measure the level of difficulty experienced by mental healthcare workers who work with patients with PD and the attitudes that they develop toward these patients as well as to examine the validity and reliability of the scales used to assess the abovementioned parameters in this study.

Methods

Model and Study Group

The study was conducted with 395 mental healthcare workers who were working in different psychiatry clinics in Turkey based on the general screening model. Sixty-three questionnaire forms were considered invalid because 90% of the questions were answered unsatisfactorily; it was reported that there was no experience in working with patients with PD, and the study group was composed of 332 mental healthcare workers (mostly nurses) who had working experience with patients with PD. The psychiatry clinics that constituted the study group were selected by way of random cluster sampling.

Data Collection Tools

In this study, different scales were used to collect data. The first one of these is the Personal Information Questionnaire (PIQ) that was developed by the investigator to determine the general demographic properties of experts working in the field of PD. This questionnaire included questions regarding gender, age, occupa-

tion, and education level of the study group as well as working experience with patients with PD and working experience in psychiatry wards. The other two scales were the Difficulties of Working with Patients with Personality Disorder Scale (PD-DWS) and the Attitudes toward Patients with Personality Disorder Scale (PD-APS). To determine compliance validity of the PD-DWS and PD-APS scales, the Adjective Check List (ACL), Maslach Burnout Inventory (MBI), and State Trait Anxiety Inventory (STAI) were used.

The Process of Developing the DWPPD and PD-APS Scales

In the process of developing PD-DWS and PD-APS scales, a questionnaire was applied primarily to 81 mental healthcare workers (13.8% psychiatrists, 8.9% psychiatry residents, 65.8% nurses, 5.1% psychologists, and 6.3% healthcare technicians) who were experienced in the treatment and psychotherapy of patients with PD, and they were asked to write down in an open-ended manner regarding the difficulties that they experienced with patients with PD and how they behaved with these patients. The data collected were divided into subtitles with content analysis. For one title, repetition of the view by at least three separate experts was considered. At this stage, 18 items were primarily defined for PD-DWS and 19 items were identified for PD-APS. Using these data obtained, the investigator's working experience with patients with PD and the information obtained by literature screening, a 21-item pool was created for PD-DWS and a 15-item pool was created for PD-APS. Similar studies and tools developed previously were also utilized for creating item pools (13,14). With the objective of obtaining expert opinions, the items were graded into the following three groups: "compatible," "partially compatible," and "incompatible". They were sent to five academicians who were experts in the field, and these academicians were asked for their opinion. Operations were made on the "compatible" responses. As a result of the analyses performed, it was decided that all items should be included in the scope of the scale because a "compatible" response was obtained with a rate above 80% for all 21 items of PD-DWS and for all 15 items of PD-APS. A 4-point Likert-type evaluation system was used for the scales. The items of assessment included the following: "none (0)," "slight (1)," "considerably (2)," and "great (3)" for PD-DWS and "never (0)," "rarely (1)," "considerably (2)," and "frequently (3)" for PD-APS. In PD-APS, all items are negative items, except for the items of 2, 6, 9, 10, and 14. In grading these items, a scoring of "never (0)," "rarely (1)," "considerably (2)," and "frequently (3)" will be made. In both scales, selection ranges are adjusted according to the range of coefficient ($3/4=.75$) calculated for the assessment range of the arithmetic mean value ($4-1=3$). For PD-DWS, the mean values between 0 and .74 were graded as "none," the mean values between .75 and 1.4 were graded as "slight," the mean values between 1.5 and 2.24 were graded as "considerably," and the mean values between 2.25 and 3.0 were graded as "great." For PD-APS, the mean values between 0 and .74 were graded as "never," the mean values between .75 and 1.4 were graded as "rarely," the mean values between 1.5 and 2.24 were graded as "considerably," and the mean values be-

tween 2.25 and 3.0 were graded as “frequently.”

The Adjective Check List (ACL)

ACL was created in 1952 by Gough and Heilbrun in the USA (24). The final 1983 version of the test was adapted into Turkish by Savran (25) in accordance with the conditions of Turkey. The mean reliability coefficient value of the test is .93. The test is composed of 300 adjectives and 24 subscales. The mean relation value of the subtests is .78. The scale was prepared to determine various personality properties of completely healthy individuals and to measure the individual’s sense of self and how the individual perceives the personality of any person.

The Maslach Burnout Inventory (MBI)

MBI was developed by Maslach and Jackson to determine the level of burnout (26). The Turkish validity and reliability study of the scale was performed by Ergin (27). The scale is composed of 22 questions, each of which has a five-step answer options determining the levels of emotional exhaustion (EE), depersonalization (D), and personal accomplishment (PA). The dimensions of EE and D involve negative answers and the dimension of PA involves positive answers. Each score belonging to a subdimension is found by adding the scores of the items related with that dimension. As the score increases, the level in that dimension increases. The range values of the scale are as follows: 0–36 for the dimension of EE, 0–20 for the dimension of D, and 0–40 for the dimension of PA. The reliability coefficients found by Ergin were α . 82, α . 60 and α . 80, respectively (27).

The State–Trait Anxiety Inventory (STAI)

STAI is a 4-point Likert-type scale that measures the levels of state trait anxiety separately with 20 questions developed by Spielberg et al. in 1970 (28). It was adapted for the Turkish population in 1985 by Öner and Le Compte (29). It can be applied to individuals aged above 14 years. Its Cronbach alpha coefficient is between .83 and .92. The State Anxiety Inventory determines how the individual feels about himself/herself at a certain time and under certain conditions, and the Trait Anxiety Inventory determines how the individual feels about himself/herself independent of the current state and conditions. The total score obtained from both scales ranges between 20 and 80. A higher score indicates a high level of anxiety, while a lower score indicates a low level of anxiety (29).

Collection of Data

The measurement tools used in the study were applied to the participants in 2012 after explaining the objective of the study and obtaining informed consent for voluntary participation. The PIQ and the PD-DWS and PD-APS scales that were being developed were applied to 395 mental healthcare workers who were selected by the random cluster sampling method via hand or e-mail. The study was conducted with 332 questionnaires that were considered valid. In addition, the scales that were being developed were applied to 45 individuals determined by giving a code two times with an interval of 2 weeks for test–retest analy-

sis. The three scales used for compatibility validity were applied once to the same 45 individuals. The application times for PD-DWS and PD-APS scales were approximately up to 15–20 min.

Analysis of the Data

Exploratory factor analysis (EFA) was performed for specifying the structural validity of the scale, test–retest, Cronbach alpha, Spearman–Brown and Guttman split-half analyses were performed for specifying the reliability of the scale. In addition, corrected item-total correlations and distinctiveness indices of the items included in the scales were investigated as well as item reliability and validity calculations were performed. All results were tested in two directions and a p value of at least .05 was considered to be statistically significant. All statistical operations were realized using SPSS for the Windows package program.

Results

Sociodemographic and Occupational Properties

All of the specialists included in the study group had working experience with patients who had PD. The study group consisted of specialist psychiatry nurses (42.2%), nurses (26.5%), psychiatrists (11.4%), psychiatry residents (9.6%), psychologists (9%), and social workers (.6%). A total of 80.7% of the participants were females and 19.3% were males. A total of 27.7% of the study group patients were aged between 20 and 29 years, 50.3% were aged between 30 and 40 years, 17.2% were aged between 40 and 50 years, and 4.8% were aged above 50 years. A total of 85.2% of the participants worked with inpatients and 14.8% worked only with outpatients.

Results Related with Validity-Factor Structure of PD-DWS Exploratory Factor Analysis

Before application of EFA, the Kaiser-Meyer-Olkin (KMO) test was performed to test the compatibility of the sample size for factoring. As a result of the analysis, the KMO value was found to be .946. In addition, it was observed that the chi-square (χ^2) value was significant when the results of the Bartlett’s sphericity test were examined ($\chi^2(210)=-4708.032$; $p<.001$). Based on this result, it was accepted that the data could be factorized (30). As a result of the analysis, it was observed that there were two components with an eigenvalue above 1 for 21 items. The eigenvalue, explained variance value, and total variance value of the scale are shown in Table 1. It was understood that the scale was composed of two separate subdimension as a result of the analyses performed. The total variance value reported together for the two subdimensions was found to be 57.562%. The eigenvalue of the first subdimension was 10.951 and constituted 52.146% of the total variance by itself. The eigenvalue of the second subdimension was 1.137 and explained 5.416% of the total variance by itself. However, operations were performed based on total scores rather than subdimensions in the study because the eigenvalue of the second subdimension was below 2 and its explained variance rate was very low; there was a great break between the eigenvalues of the first and sec-

Table 1. The eigenvalue and explained variance value of PD-DWS

Component	Baseline eigenvalues			Sum of squares rotation		
	Total	Explained variance percentage (%)	Cumulative variance percentage (%)	Total	Explained variance percentage (%)	Cumulative variance percentage (%)
1	10.951	52.146	52.146	7.406	35.268	35.268
2	1.137	5.416	57.562	4.682	22.295	57.562

ond subdimensions. Examples of items selected from PD-DWS are presented below.

Item-1: They are patients which are hard to manage at the inpatient service unit: they don't comply with the rules of the inpatient unit and they impair the environment.

Item- 2: They are demanding. Their need for concern and being understood is never ending

Item-3: Excessive conflict at the service inpatient unit. They cause communicational problems

with other patients: provocation, domination, formation of gangs, chaos, etc.

Item-6: They are coercive, forceful and threatening: they try to manipulate, they do not recognize any boundaries.

Item-10: They show their reactions by acting out rather than verbalizing.

Factor loadings, item-residual correlations, and item distinctiveness indices are shown in Table 2.

Results Related with Reliability

In the reliability analyses, the coefficient for test–retest was found to be .7020, the Cronbach alpha value of the total test was found to be .9522, the Spearman–Brown value was found to be .880, and the Guttman value was found to be .867. In addition, the standard measurement error value was found to be 2.44 for the reliability of the test. The results are shown in Table 3.

Results Related with Item Analysis Operations

For the item reliability of PD-DWS, adjusted item-total score correlation and 27% lower upper group score comparisons for item distinctiveness are given. The results are shown in Table 2.

Compliance validity

After it was understood that PD-DWS was reliable, the scale for which validity was investigated, ACL was applied to the study group composed of 45 individuals to test the structural validity of the test. The relation between the scores of the two scales was calculated using the Pearson's product-moment correlation coefficient method. Significant negative correlations with a statistical significance of .05 were obtained between the total PD-DWS scores and the subdimensions of ACL, including independence ($r = -.258$), aggression ($r = -.292$), ideal self ($r = -.281$), and masculine properties ($r = -.276$).

Table 2. Factor loadings, item-remainder correlations, and item distinctiveness index belonging to the items of PD-DWS

Item number	Inc. Mean	SD	Factor loading	Item-remainder correlations	Distinctiveness index
1.	1.89	1.23	.794	.563***	3.860***
2.	1.58	1.25	.785	.636***	4.234***
3.	1.61	1.30	.774	.690***	9.530***
4.	1.76	1.19	.747	.458***	5.359***
5.	1.80	1.22	.734	.491***	5.768***
6.	2.09	1.07	.714	.479***	3.72***
7.	1.35	1.18	.679	.671***	9.954***
8.	1.23	1.22	.664	.774***	11.256***
9.	1.29	1.23	.658	.674***	10.048***
10.	1.33	1.25	.647	.628***	14.449***
11.	1.36	1.15	.631	.717***	13.273***
12.	1.05	1.17	.553	.781***	15.889***
13.	1.21	1.20	.542	.741***	13.942***
14.	1.20	1.09	.507	.632***	12.424***
15.	.942	1.07	.493	.726***	21.410***
16.	.892	1.22	.332	.827***	17.389***
17.	1.25	1.18	.325	.680***	11.816***
18.	1.13	1.20	.425	.728***	19.244***
19.	1.22	1.07	.520	.787***	12.011***
20.	.840	1.11	.485	.805***	18.260***
21.	.921		.347	.768***	19.210***

*** $p < .001$

The second scale that was used to determine the compliance validity of PD-DWS was MBI. Pearson's product-moment correlation coefficients were calculated; a positive significant correlation with a significance level of .05 was obtained between the total PD-DWS scores and the scores of burnout subdimension of MBI, which was based only on desensitization ($r = .422$).

Again, a positive significant correlation ($r = .384$) with a significance level of .05 was found with the trait anxiety subdimension of STAI, which was used to determine compliance validity of PD-DWS.

The descriptive statistical results of PD-DWS that was used in the scope of this study are shown in Table 4. The arithmetic mean of the scale was found to be 28.49, and the median value was found to be 26.90. Considering that the maximum score that

Table 3. The Reliability Coefficient of PD-DWS

Scale	n	Test-retest reliability coefficient	Cronbach alpha	Spearman Brown	Guttman	M.s.e.
PD-DWS	332	.7020	.9522	.8800	.8670	2.440

Table 4. The descriptive statistical results of PD-DWS

Statistics	Value
N	322
Inc. mean	28.4849
Median	26.900
Mode	15.000
SD	18.1779
Skewness	.253
Skewness Standard error	.134
Skewness "z"	1.888 (p>.05)
Kurtosis	-.691
Kurtosis Standard error	.367
Kurtosis "z"	-1.882 (p>.05)
Q1	12.0000
Q3	45.0000
Kolmogorov-Smirnov "z"	.045 (p>.05)

can be obtained from the test is 63, the absolute value obtained is slightly lower than the mean value. Individuals who obtain a score of 12 points or lower experience a low level of difficulty, while the ones who score 45 and above experience a high level of difficulty. No statistically significant results were found in analyses performed for skewness and flatness of the distribution. Because no significant result was obtained either in the Kolmogorov-Smirnov test that was performed for the normality of the distribution, it was decided that the score distribution was normal.

Results Related with Validity-Factor Structure of PD-APS

Exploratory Factor Analysis

To determine if the data obtained from the preapplication were compatible for factor analysis, the KMO sample compliance test and Bartlett's sphericity test were performed and the diagonal values of the anti-image correlation matrix were examined. As a result of the analysis, the KMO value was found

to be .925. In addition, the χ^2 value was found to be significant when the Bartlett's sphericity test results were examined ($\chi^2(210)=2704.976$; $p<.001$).

Principle component analysis was used as the factoring method to demonstrate the factor pattern of PD-APS, and the varimax technique was selected among orthogonal rotations to provide clarity and significance in interpretation. As a result of the analyses performed, it was understood that the scale was composed of two separate subdimensions. The eigenvalue and the explained variance value of PD-APS are shown in Table 5. The total variance value explained by the two subdimensions together was found to be 54.973%. The eigenvalue of the first subdimension was 7.062, and it corresponds to 47.081% of the total variance by itself. The eigenvalue of the second subdimension was 1.184, and it explained 7.891% of the total variance by itself. However, operations were performed based on total scores rather than subdimensions in the study because the eigenvalue of the second subdimension was below 2 and its explained variance rate was very low; there was also a great break between the eigenvalues of the first and second subdimensions.

Examples of items selected from PD-APS are presented below.

Item-1: I try to act authoritarian in order to maintain order.

Item-2: I become more moderate and understanding than usual.

Item-5: I can be abused. I am wary of this when I approach them.

Item-9: I examine myself and pay attention to the arising counter-transference feelings.

Item-15: I continuously work with tension and I wish my work with the patient to be over as soon as possible.

Factor loadings, item-residual correlations, and item distinctiveness indices belonging to the items of the scale are shown in Table 6.

Results Related with Reliability

The reliability coefficient of the test based on continuity was 0.806. The Cronbach alpha value of the total test was found to be .9134; the Spearman-Brown value was found to be .9139, and the Guttman value was found to be .9113. In addition, the standard measurement error value was found to be 2.44 for the reliability of the test. The results are shown in Table 7.

Results Related with Item Analysis Operations

For the item reliability of PD-APS, adjusted item-total score correlation and 27% lower upper group score comparisons for item distinctiveness are given. The results are shown in Table 6.

Table 5. The eigenvalue and explained variance value of PD-APS

Component	Baseline eigenvalues			Sum of squares rotation		
	Total	Explained variance percentage (%)	Cumulative variance percentage (%)	Total	Explained variance percentage (%)	Cumulative variance percentage (%)
1	7.062	47.081	47.081	5.950	39.669	39.669
2	1.184	7.891	54.973	2.296	15.304	54.973

Table 6. Factor loadings, item-remainder correlations, and item distinctiveness index belonging to the items of PD-APS

Item number	Inc. Mean	SD	Item		
			Factor loading	remainder correlations	Distinctiveness index
1.	.9759	.9768	.594	.5158***	12.196***
2.	.9006	1.090	.698	.6763***	20.440***
3.	1.003	1.157	.750	.6706***	23.001***
4.	.8434	.8513	.385	.4356***	9.134***
5.	1.0753	1.050	.317	.5922***	19.652***
6.	1.422	1.267	.824	.5364***	16.883***
7.	.9036	1.215	.613	.7509***	23.786***
8.	.7620	1.037	.473	.8028***	23.957***
9.	.8855	.9026	.753	.4857***	11.447***
10.	1.5211	1.254	.813	.3663***	9.669***
11.	.9789	1.215	.783	.7706***	29.182***
12.	.9488	1.328	.831	.8448***	39.435***
13.	.8976	.774	.698	.4364***	11.258***
14.	.7590	.994	.665	.5715***	17.794***
15.	.8765	1.275	.785	.7880***	23.861***

***p<.001

Compliance validity

To test the structural reliability of PD-APS, the scale for which validity was investigated, ACL was applied to the study group composed of 45 individuals. The relation between the scores of the two scales was calculated using the Pearson's product-moment correlation coefficient method. Significant positive correlations with a statistical significance of .05 were obtained between the total PD-APS scores and the subdimensions of ACL, including constancy ($r = -.282$), drawing attention ($r = -.292$), self-accusation ($r = -.298$), and conformity ($r = -.286$).

Negative significant correlations with a significance level of .05 were obtained between the total PD-APS scores and the subdimensions of ACL test, including dominance ($r = -.282$), independence ($r = -.274$), and aggression ($r = -.279$). The second scale that was used to determine the compliance validity of PD-APS was MBI. Pearson's product-moment correlation coefficients were calculated as a result of the application of the two tests to the same group. No statistically significant correlations were

found between the total scores of PD-DWS and MBI subdimension scores.

A positive significant correlation ($r = .395$) with a significance level of .05 was found with the state anxiety subdimension of STAI that was used to determine compliance validity of PD-APS.

The descriptive statistics results of PD-APS that was used in the scope of this study are shown in Table 8. The arithmetic mean of the scale was found to be 14.75, and the median value was found to be 13.89. Considering that the maximum score that can be obtained from the test is 45, the absolute value obtained is considerably lower than the mean value. The individuals with a score of 6 and below have a negative attitude, while the ones with a score of 26 and above have a high level of positive attitude. No statistically significant results were found in the analyses performed for skewness and flatness of the distribution. Because no significant result was obtained either in the Kolmogorov-Smirnov test, which was performed for the normality of the distribution, it was decided that the score distribution was normal.

The correlation coefficients was calculated between the total scores of PD-DWS and PD-APS in the scope of this study are shown in Table 9. A statistically significant positive correlation was found between the total scores of PD-DWS and PD-APS at a level of .001 ($r = .646$).

Discussion

In the stage of compatibility of the items of the PD-DWS and PD-APS scales, the readability, comprehensibility, clearness, and clarity were evaluated by academicians; it was decided that all items should be included in the scope of the scale because a "compatible" response was obtained with a rate above 80% for all 21 items of PD-DWS and for all 15 items of PD-APS.

In EFA, the investigator has no information regarding the number of factors that he/she measures and tries to obtain information about the nature of the factors measured by the measurement tool rather than testing a hypothesis (30). In this study, EFA was applied because we tried to obtain information regarding the structure of factors measured rather than a certain hypothesis. For factor analysis, the sample size is very important. It has been reported that the results of analyses performed with insufficient sample size are misleading and the appropriate sample size should not be lower than 10-fold of the item number of the scale. The compatibility of the data for factor analysis can be examined using the KMO coefficient and Bartlett's spheric-

Table 7. The Reliability Coefficient of PD-APS

Scale	n	Test-retest reliability coefficient	Cronbach alpha	Spearman Brown	Guttman	M.s.e
PD-APS	332	.806	.934	.9139	.9113	3.29

Table 8. The descriptive statistical results of PD-APS

Statistics	Value
N	322
Inc. mean	14.7530
Median	13.8900
Mode	6.00
SD	11.2039
Skewness	.492
Skewness Standard error	.258
Skewness "z"	1.90 (p>.05)
Kurtosis	-.645
Kurtosis Standard error	.387
Kurtosis "z"	-1.666 (p>.05)
Q1	6.0000
Q3	26.0000
Kolmogorov-Smirnov "z"	.068 (p>.05)

Table 9. Correlations between the total scores of PD-DWS and PD-APS

Scale N: 332	PD-APS
PD-DWS	.646***
***p<.001	

ity test (31). It has been emphasized that the KMO test value is "moderate" between .60 and .69, is "good" between .70 and .79, is "very good" between .80 and .89, and is "excellent" between .90 and 1.00. The Bartlett test is used to determine if the data originated from multivariate normal distribution. This test gives the χ^2 value. If the significance level is below .05, the data are considered to have originated from multivariate normal distribution, and the analysis is continued. If the significance level is above .05, factor analysis is not performed (30). It was observed that a KMO value between .90 and 1.00 was "perfectly well" for factorization in the PD-DWS and PD-APS scales, and a significant χ^2 value in the Bartlett's test indicated that sample/data matrix was appropriate for factorization (30,32).

After the initial factor analysis solution is achieved, various manipulations and axis shifts are realized in axes representing the factors to facilitate interpretation and entitling the factors that

emerge. The investigator may denote axis rotation for the important factor as "m," and this factor has been obtained by applying a factor analysis technique to provide "independence, clearness, and significance in interpretation." As a result of axis rotation, the loadings of the items in one factor increase, while they decrease in another factor. Thus, the factors find the items that give a strong relation with themselves and they can be interpreted more easily. The following two methods are used in factor rotation: vertical rotation and oblique rotation (30,31). Principle component analysis was selected as the factorization method to demonstrate the factor designs of the PD-DWS and PD-APS scales, and the varimax technique was selected among vertical rotation methods to provide clearness and significance in interpretation (30). The variance rate stated as a result of the analysis is important. The variance rate stated is expected to be at least 30% in single-dimensional scales and higher in multidimensional scales (31,33).

In calculation of the factors, the eigenvalues are utilized. The eigenvalues are calculated as the sum of the squares of factor loadings. Factors with a high eigenvalue should be selected in factor analysis. It has also been stated that all factors with an eigenvalue above 1 can be accepted because few factors generally have a high eigenvalue (30). As a result of the analysis, it was observed that there were two components with an eigenvalue above 1 for 21 items in PD-DWS. The contribution of the two components to the total variance was 57.562%. The eigenvalue of the first subdimension was 10.951, and the eigenvalue of the second subdimension was 1.137. It was observed that there were also two subdimensions for the 15 items in PD-APS, and the total variance value explained by the two subdimensions together was found to be 54.973%. The eigenvalue of the first subdimension was 7.062 and the eigenvalue of the second subdimension was 1.184. Operations were performed based on total scores rather than subdimensions in the study because the eigenvalue of the second subdimension was below 2, and its explained variance rate was very low; there was a great break between the eigenvalues of the first and second subdimensions in both scales.

Factor loading values are very important in factor analysis. A factor loading value (which shows its relation with that factor) of .45 or higher is preferred for a factor to measure the item it describes. However, the loading value can be lowered up to .30 for a small number of items (31). It was understood that the common factor loading values ranged between .794 and .325, and the factor loadings of all factors were compatible with scientific criteria as a result of principle component analysis of the items included in both scales.

It was stated that the fact that there was no significant difference between the measurements made at two different times in-

indicated that there was no change in the property measured for the item, and that a time period ranging between 2 and 3 weeks and 4 and 6 weeks between the test and retest was sufficient (30,31,34). When the findings related with reliability were examined, it was observed that there was compatibility and a significant positive and strong correlation between the test and retest mean scores; the difference between the mean scores obtained by two measurements was not significant. These results showed that the answers given by participants did not change in both scales, and the scales were consistent with time.

The internal consistency analysis, which tests the reliability of a measurement tool, shows the consistency of the relations of the items with each other. The higher the alpha reliability coefficient of a scale, the more consistent are the scale items with each other. A reliability coefficient above .70 is considered sufficient for psychological tests, whereas it is expected to be higher in other tests (30,31,32,35). The results obtained in this study showed that both scales had a considerably high reliability. In addition, the standard measurement error was found to be 2.44 (PD-DWS) and 3.29 (PD-APS) for reliability. According to this finding, the score obtained by a mental healthcare worker in PD-DWS and PD-APS would be $X \pm 1.96 \times 2.44$ and $X \pm 1.96 \times 3.29$ with a 95% margin of error in population parameter.

When we examine the findings related with item analysis operations, the item-total score correlation explains the correlation between the scores obtained from the items of the scale and the total score of the test (31). In other words, it shows that each item in a measurement tool encompasses similar behaviors. Accordingly, the item-remaining score correlation is expected to be positive and high (36). It was observed that the adjusted item-total correlations of the scale ranged between .805 and .458 for PD-DWS and between .845 and .366 for PD-APS; the *t* value (*SD*=178) of PD-DWS ranged between 3.72 ($p < .001$) and 21.41 ($p < .001$) and the *t* value (*SD*=178) of PD-APS ranged between 9.134 ($p < .001$) and 39.435 ($p < .001$) that were related with the differences in 27% upper and lower group item scores, determined according to the total scores. These results showed that the items of the scale had a high validity and reliability. When we examined the results calculated with Pearson's product-moment correlation coefficients to examine the relation between the scales used and compliance validity of both scales, a statistically significant negative correlation was obtained between the total PD-DWS score and the subdimensions of independence, aggression, ideal self, and masculine properties in the AVL test. According to these results, as the independence, aggression, ideal self, and masculine properties of the specialists who worked with patients showing PD increased, they experienced less problems while working with these patients. On the contrary, they experienced problems as the independence, aggression, ideal self, and masculine properties decreased. A statistically significant negative correlation was obtained between the total PD-APS scores and the subdimensions of dominance, independence, and aggression in the ACL test. According to these results, increase in the properties of dominance, independence, and aggression in the specialists

who worked with patients who had PD was effective in developing a negative attitude toward these patients. It has been reported in many studies that the personality characteristics of specialists who work with patients with PD are effective with regard to the perception of patients and on the attitudes that they develop toward these patients (37,38,39,40).

Statistically significant positive correlations were obtained between the PD-DWS total scores and the subdimension of burnout based only on desensitization in MBI. An increase in the properties of burnout based on desensitization in the specialists who worked with patients with PD led to an increase in the problems that they experienced while working with these patients. In many studies, it has been reported that estrangement is observed in specialists who work with patients with severe PD, and these specialists are in less contact with these patients (37,39,41). No statistically significant correlations were found between the total PD-APS scores and MBI subdimension scores.

A statistically significant positive correlation was found between the total PD-DWS scores and the STAI trait anxiety subdimension. An increased characteristic of trait anxiety in the specialists who worked with patients who had PD led to an increase in the problems that they experienced while working with these patients. A statistically significant positive correlation was found between the total PD-APS scores and the STAI state anxiety subdimension. These findings showed that an increased state anxiety characteristic in the specialists who worked with patients who had PD significantly increased the positive attitudes developed toward these patients. These findings obtained indicate that both scales have structural validity.

In studies conducted to evaluate the attitudes of the healthcare workers working with patients with PD, it has been reported that positive attitudes were related with developed general health level, high occupational success, and low burnout level; fear and anxiety were related with negative attitudes. Professionals working with these patients experience estrangement, stress, and burnout at a higher rate (13,39,41,42).

It was observed that the mental healthcare workers included in this study experienced problems at moderate level while working with patients with PD but showed negative attitudes below the average level. In addition, a statistically significant positive correlation was found between correlation coefficient values between the total PD-DWS and PD-APS scores of the mental healthcare workers included in this study. As the positive attitudes of the specialists working with patients with PD increased, the problems that they experienced also increased. On the contrary, the ones who were said to have more negative attitudes experienced lesser problems. In other words, it can be stated that trying to maintain positive attitudes toward patients with PD is related with experience of problems and having negative attitudes is related with lack of experience of problems. However, these results should be tested with further studies, and different research groups and multidimensional scales should be developed in this area.

Conclusively, it was found that the PD-DWS and PD-APS scales possessed good psychometric properties, measured the structure investigated, were compatible with other scales, had

a high internal consistency between their items, and were consistent with time. Thus, both scales were found to be valid and reliable. Because there were no other scales evaluating the degree of difficulty of mental healthcare workers working with patients with PD and their attitudes toward these patients, these scales that were developed can be used in studies that will be conducted in this area. Both scales can be appropriately used based on both total scores and items. Use of the two scales in combination enables the examination of the relation between the level of difficulty experienced and the attitudes.

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