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State Personality Disorder in Social Phobia

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To examine the effects of state on personality disorder characteristics, we compared individuals with social phobia before and after psychological intervention. Administration of the Personality Disorder Questionnaire (PDQ-4) before and after treatment allowed for the identification of three groups of patients: (1) individuals who showed elevated PDQ-4 scores but little changes from intake to post treatment (Trait PD group; n = 28); (2) individuals who showed a decrease in PDQ-4 scores from intake to post treatment (State group; n = 33); and (3) a group with no significant personality disorder characteristics at pre or post-treatment (No PD group; n = 32). There were trend differences between the Trait, State and No PD groups for being single, never married (81.5%, 44.4%, and 56.3%, p < .05) and a significant difference for having the generalized form of Social Phobia (96.4%, 88.9%, and 59.4%, p < .0001). The groups also differed in their level of trait anxiety (61.6, 51.2, 44.5, p < .001). Groups also differed in level of the personality measure Harm Avoidance (26.3, 23.3, 19.8, p < .0002). The reduction of personality disorder traits in the State PD groups from intake to post-treatment was not specific to any particular personality disorder or personality disorder cluster. Trait personality appeared to have a higher risk for suicide compared to the other two groups. A State Personality group was identified in individuals with social phobia by following changes in personality pathology from before and after a psychological intervention.

Keywords   State; Personality disorder; Social phobia; Trait.

INTRODUCTION

It has recently been suggested that state, such as an Axis I disorder, may lead to what appear to be personality disorders, although brief in time course (1–3). Such a State personality disorder remits again when such stressors are removed. This

diagnosis is not currently included in the DSM and ICD nomenclatures, although the ICD does have a diagnosis for a permanent personality change due to stress. It represents a potential interesting area for further research.

The concept of State personality disorder is not new (4–6). More recently there has been some empirical support for this concept. For example, Seivewright (7) using a somewhat longer time period has recently published a report indicating that personality disorders wax and wane over time. Some of this variability is presumed to be environmental. Reich (1,3) identified a group with possible State personality disorder and described some of its personality characteristics. In these studies the State personality group differed from the Trait personality group by having more shame and less negative reaction to criticism, suicide gestures and attempts and a less strong need for approval. The State personality disorder (PD) group differed from the No PD group by not having restricted expression of affect and

by having more tendencies to act childishly, act emotion-ally, be more sensitive to criticism, be more fearful and to have rapid change in their feelings about people.

The present report is an attempt to identify a State Per-sonality group in individuals with Social Phobia.

METHODS

Population

All participants took part in a study on the treatment of Social Phobia. The mean age of the group was 30.0 years (SD = 10.5). All participants met DSM-IV criteria for a prin-cipal diagnosis of Social Phobia. Prospective participants who contacted the Center for Anxiety and Related Dis-orders at Boston University were interviewed by experienced clinicians using the structured Anxiety Disorder Interview for DSM-IV (ADIS-IV-L) (8). Exclusion criteria included (1) prior non-response to adequately delivered study treat-ment; (2) current diagnosis of psychoactive substance abuse or dependence; (3) current active suicide potential; (4) cur-rent diagnosis of bipolar disorder; (5) current diagnosis of schizophrenia or other psychotic disorders. Furthermore, subjects had at least a moderate level of public speaking anxiety in order to participate in the study because the CBT intervention included repeated in vivo exposure exercises to public speaking situations.

The group was selected as apart of a treatment study and therefore selection and exclusion criteria were designed for that study and not the current study. (Treatment outcomes results will be reported elsewhere.)

Instruments

Before treatment, all subjects received the full version of the Anxiety Disorders Interview Schedule for DSM-IV, lifetime diagnoses. This interview took between 4 to 6 hours per participant and was conducted by advanced doctoral students of psychology, who were unaware of the objective of this study. The Kappa coefficient between two indepen-dent raters on a sub sample of this study was .77 for social phobia as a principal diagnosis (n = 80).

The Social Phobia and Anxiety Inventory (SPAI) (9) was administered. It is a 109 item inventory capable of discrimi-nating socially phobic persons from those with other anxi-ety disorders. The State Trait Anxiety Inventory (STAI) was used as a measure of trait anxiety (10).

Personality traits were measured by the PDQ 4. This is a forced choice self-administered true false test consisting of 84 questions. It contains one true false question for each of personality criteria for each disorder. It takes about 20–30 minutes to complete. It can be scored several ways. The total pathology score adds up all answers given in the direc-tion of personality dysfunction. It is a broad measure of per-sonality pathology and what we used to determine our different groups (State, Trait and No PD). It can also be scored by adding up the personality pathology in each indi-vidual DSM personality cluster or each individual disorder. We did not use individual disorders or clusters as a measure as the sample size for each individual disorder would have been too small and we were interested here in broad person-ality effects. The PDQ 4 is designed so that its personality scores will reflect DSM-IV personality diagnoses and dimensions (11). No psychometric data is available for the PDQ-4 (personal communication, Hyler, 2003). However, an earlier version of this instrument, the PDQ-R (based on the DSM-III-R criteria), shows high sensitivity and moder-ate specificity for most DSM-III-R axis II disorders (12).

A second measure of personality was the Temperament and Character Inventory (TCI) (13). This gave measures of three personality dimensions, Novelty Seeking, Reward Dependence and Harm Avoidance.

Procedures

All individuals received 12 weeks of cognitive behav-ioral therapy group treatment (14). Treatments were con-ducted by 2 Master's level clinicians and weekly supervised by an experienced therapist. Between 4 and 6 randomly chosen patients participated in each group. Within 2 weeks after the last session, subjects received their post-treatment assessment.

Measures were taken at intake and post-test. For each subject their total PDQ score was averaged. This adds up all their pathological responses to each personality question. If the average was 36 or higher and their scores varied less than 10 points between measures they were classified as "Trait Personality Disorder" (Trait PD). Selecting this cut off gave us a group who scored in the top 20% of the PDQ total score. If the average scores were less than 20 and the scores did not vary by 10 points or more between testings this group was designated the "No Personality Disorder group" (No PD). If the total average PDQ score was between 20 and 35 and the scores varied by 10 points or more across assessment points, the group was designated the "State Personality Disorder group" (State PD).

Analyses

We compared the State and Trait groups at intake to see if there were any PDQ personality items that would distin-guish the groups when there was a high level of state anxi-ety. We compared the State and No PD groups at post test to determine if these groups could be distinguished by PDQ

variables when there was a low level of state anxiety. An exploratory exact logistic regression was performed to determine what might be the key differentiating items between the State and Trait groups at intake.

As there were multiple tests the reader is asked to view findings of p value between .05 and .01 as trends of interest. They are reported for reader interest, but should not be considered significant.

RESULTS

Table I compares basic demographics, anxiety and personality symptoms (using the TCI). There were 32 subjects in the No PD group, 33 in the State PD group and 28 in the Trait PD group. The groups did not differ in mean age, years of school, gender, or race. There was a trend for the Trait PD group to have more subjects who were single and who had never been married. The State PD and the Trait PD groups had significantly higher percentages of the generalized form of Social Phobia.

Although there was a trend toward difference between groups in the total Social Phobia symptoms as measured by the SPAI total score (p = .02), the differences did not reach significance. The differences appear to be between the high scores in the Trait and State group and the low scores in the No PD group. There does not appear to be a clinical difference between the State and Trait groups which have clinically similar levels of symptoms. The STAI indicated the least trait anxiety in the No PD group and the highest in the Trait PD group. On the TCI only Harm avoidance was significant with Trait > State > No PD.

When individual items of the PDQ-4 were compared between the No PD and State PD groups when both were tested after treatment there were no significant differences on individual items on the PDQ.

When the State PD group is compared to the Trait personality disorder group at intake there were a number of significant differences between the two groups. These results are shown on Table II. These differences seem to span items in all three personality clusters. In order to determine the key components of the differences between the two groups, an exploratory stepwise logistic regression was performed using the top five items from Table II. Two roughly equal models occurred. The first had three items predicting Trait PD: PDQ item 32, "Others will use what I tell them against me." (OR = 15.7); PDQ item 50, "I am a very moody person." (OR = 32.1); and PDQ item 84, "I have done things on impulse that get me in trouble." (OR = 41.6). The second model also had three items: PDQ item 42, "People often have difficulty understanding what I say." (OR = 32.1); PDQ item 32, "Others will use what I tell them against me." (OR = 15.7); and PDQ item 84, "I have done things on impulse that get me in trouble." (OR = 38.4)

Table III shows the largest differences between individual items in the high state and low state states for the State personality group. The key finding here seems to be that the personality items being reduced are not coming from one personality disorder or one DSM personality cluster, but seem to be an across the board reduction in personality pathology.

In a previous report on State personality there was a difference in suicidal ideation and gestures between the Trait and other two groups (3). In this study the PDQ item 39 is the item reflecting this, "I have tried to hurt or kill myself." When the Trait group is compared to the combined No PD and State PD groups we find the same findings. When all PDQ scores are taken at their minimum value, 3 of 28 of the

Table I Comparison of Groups on Demographics and Baseline Information

Variable	No PD (N = 32)	State PD (N = 33)	Trait PD (N = 28)	p Value[1]
Mean age (in years)	31.8 (SD = 8.9)	35.3 (SD = 14.3)	30.1 (SD = 9.6)	NS
Total years school	16.2 (SD = 2.1)	16.3 (SD = 2.7)	15.2 (SD = 2.5)	NS
Male (%)	53.1%	61.1%	57.1%	NS
Single, never married	56.3%	44.4%	81.5%	p = .0247[a]
Caucasian (%)	78.1	94.4	92.9	NS
Generalized social phobia (%)	59.4	88.9	96.4	p = .0001[a]
Total PDQ score at intake	14.0 (SD = 5.0)	26.4 (SD = 6.6)	42.4 (SD = 5.2)	N/A[b]
SPAI total score	93.7 (SD = 34.1)	112.0 (SD = 23.2)	117.6 (SD = 22.8)	p = .02[c]
State trait Anxiety Scale Trait score	44.5 (SD = 10.1)	51.2 (SD = 12.6)	61.6 (SD = 7.1)	p = .0001[c]
Harm Avoidance	19.8 (SD = 5.9)	23.3 (6.7)	26.3 (4.3)	p = .0002[c]
Novelty Seeking	14.2 (SD = 3.8)	15.1 (SD = 5.0)	16.0 (4.7)	NS
Reward Dependence	17.4 (SD = 5.7)	18.2 (3.8)	19.1 (3.3)	NS

[1]Not all subjects were available for each analysis so Ns may vary somewhat.
[a]Fischer's exact test.
[b]No statistical tests were done on this variable as it was partly determined by group selection.
[c]Kruskal-Wallis test.

Table II Comparison of Frequency of PDQ Items on State PD and Trait PD Groups When Both are at Maximum Scores, in Percent[a,b,c]

Variable	State PD (N = 33)	Trait PD (N = 28)	p Value
People often have difficulty understanding what I say (PDQ42, STP4)	16.7	78.6	.0005
Others will use what I tell them against me (PDQ32, PAR3)	27.8	85.7	.0005
I am a very moody person (PDQ50, BORD6)	22.2	78.6	.0005
I am inhibited in my intimate relations because I am afraid of being ridiculed (PDQ23, AVD3)	44.4	89.3	.005
I have done things on impulse that can get me in trouble (PDQ84, Bord4)	66.7	100	.005
I have a flair for the dramatic (PDQ58, HIS6)	22.2	71.4	.005
I get special messages from things happening around me (PDQ9, STP1)	16.7	64.3	.005
I do a lot of things without considering the consequences (PDQ40, AS3)	5.6	46.4	.005
I often wonder whether my wife (husband, girlfriend or boyfriend) has been faithful to me (PDQ83, PAR7)	5.6	46.4	.005
I feel that my life is dull and meaningless (PDQ60, Bord7)	33.3	78.6	.005
I have the ability to know that some things will happen before they actually do (PDQ20, STP2)	11.1	53.6	.005
I know that people will take advantage of me or try to cheat me if I let them (PDQ10, PAR1)	44.4	85.7	.01
I keep alert to figure out the real meaning of what people are saying (43, PAR4)	44.4	85.7	.01
I often wonder whether the people I know can really be trusted (PDQ21, PAR2)	38.9	78.6	.01
I need very much for other people to notice or compliment me (PDQ38, NAR4)	38.9	78.6	.01
I keep my distance from others (PDQ82, SZD7)	55.6	89.3	.01
There are few items that I have any interest in (PDQ41, SZD4)	27.8	67.9	.01
I have difficulty paying bills because I don't stay in one place very long (PDQ29, AS6)	5.6	39.3	.025
Even though I talk a lot, people say that I have trouble getting to the point (PDQ48, HIS 5)	16.7	53.6	.025
People complain that I'm stubborn as a mule (PDQ77, OC8)	16.7	53.6	.025
I expect others to do favors for me even though I do not usually do favors for them (PDQ49, NAR5)	0	28.6	.025

[a]The number after the letters PDQ after each variable indicates which item of the PDQ version 4 is used. For example PDQ50 indicates the 50th item of the test.

[b]The letters after the PDQ item notation indicate which personality disorder the question refers to and the criteria in DSM-IV. For example, BORD6 indicates the 6th criteria of borderline personality disorder in DSM-IV. (BORD = borderline, STP = schizotypal, PAR = paranoid, SZD = schizoid, AS = antisocial, NARC = narcissistic, OC = obsessive compulsive, HIS = histrionic)

[c]Statistical tests are by Fisher's Exact Test.

Trait group and 0 of 50 of the combined State and No PD groups endorsed this item (p = .04, Fisher's exact test). When using the maximum values for all PDQ scores the Trait group had 5 of 28 endorsing this item while the combined State and No PD group had 0 of 50 (p = .005, Fisher's exact test).

From intake to post treatment the mean score of the State personality group decreased an average of 12.6 (SD = 6.8) points.

DISCUSSION

As hypothesized, we were able to identify a possible State personality disorder group among individuals who underwent psychological treatment for social phobia by comparing their response to the PDQ-4 at intake and post treatment. This possible State PD group differed from the No PD group and the Trait PD groups in variability of personality measurement, trait anxiety, Harm Avoidance, marital status and the prevalence of the generalized form of Social Phobia. In the low state the State PD group could not be distinguished from the No PD group.

Numerous variables distinguished the State PD at high state anxiety from the Trait PD group. Although these varied,

an exploratory logistic regression seemed to indicate that the basic differences might have to do with some aspects of feeling not understood by others (due to paranoia or other reasons) combined with a tendency toward rapid mood shifts and impulsivity.

We can compare these results to a previously identified State PD group (3). In the previous group it appeared that the variable of shame was important in identifying the State PD group. Unfortunately the revised form of the PDQ used no longer has the shame question so replication was not possible. In the previous study (3) there was a difference in suicide between the Trait and other two groups. This has been again replicated in this study.

When we examine the new findings that are allowed in this study by virtue of having repeated measures of personality we see that the abnormal personality traits that went in the State PD group from high to low personality scores on the PDQ appear to be in all three DSM personality clusters. If replicated, this could be an important finding indicating that the personality change seen in State PD is a broad change and not specific to one disorder or even one cluster.

The finding in difference in level so the personality measure Harm Avoidance on the TCI is a new finding and if

Table III State Personality Disorder Criteria with Greatest Absolute Decline from Maximum Value to Minimum Value[a,b,c]

Variable	Maximum	Minimum	Difference
I never forget or forgive those who do me wrong (PDQ54, PAR5)	.56	.06	.50
Being around other people makes me nervous (PDQ74, STP9)	.83	.33	.55
I make friends with people only when I am sure they like me (PDQ12, AVD2)	.67	.22	.44
I am afraid to meet new people because I feel inadequate (PDQ45, AVD5)	.78	.33	.44
I keep my distance from others (PDQ82, SZD7)	.46	.11	.44
I often wonder who I really am (PDQ28, BORD3)	.83	.39	.44
I avoid working with others who may criticize me (PDQ1, AVD1)	.72	.33	.39
I can often get lost in details and lose sight of the "big picture" (PDQ3, OC1)	.61	.22	.39
Only certain special people can really appreciate and understand me (PDQ27, NAR3)	.78	.39	.39
I am easily influenced by others (PDQ69, HIS7)	.56	.17	.39
I can't make decisions without the advice, or reassurance, of others (PDQ2, DEP1)	.50	.17	.33
I have a higher sense of morality than other people (PDQ36, OC4)	.56	.22	.33
I know that people will take advantage of me, or try to cheat me, if I let them (PDQ10, PAR1)	.44	.11	.33
I am inhibited in my intimate relationships because I am afraid of being ridiculed (PDQ23, AVD3)	.44	.11	.33
I find it difficult to start something if I have to do it by myself (PDQ35, DEP4)	.44	.11	.33
I feel that my life is dull and meaningless (PDQ60, BORD7)	.33	0	.33
I take relationships more seriously than do those who I'm involved with (PDQ78, HIS8)	.39	.06	.33
I have accomplished far more than others give me credit for (PDQ5, NAR1)	.33	06	.38
I often wonder whether the people I know can really be trusted (PDQ21, PAR2)	.39	.11	.28
I fear losing the support of others if I disagree with them (PDQ24, DEP3)	.78	.50	.27
I need very much for other people to take notice or compliment me (PDQ38, NAR4)	.39	.11	.28
There are few activities that I have any interest in (PDQ41, SZD4)	.28	0	.28
I am often on guard against being taken advantage of (PDQ53, STP5)	.56	.28	.28

[a]The number after the letters PDQ after each variable indicates which item of the PDQ version 4 is used. For example PDQ50 indicates the 50th item of the test.

[b]The letters after the PDQ item notation indicate which personality disorder the question refers to and the criteria in DSM-IV. For example, BORD6 indicates the 6th criteria of borderline personality disorder in DSM-IV. (BORD = borderline, STP = schizotypal, PAR = paranoid, SZD = schizoid, AS = antisocial, NARC = narcissistic, OC = obsessive compulsive, HIS = histrionic)

[c]State personality disorder group only, n = 33.

replicated may shed more light on the nature of these phenomena.

There are limitations to this study. A self report instrument was used to measure personality. Although this might be a liability if we were asserting that we were making clinical personality diagnoses, this is not the case. We are examining how different groups differ on dimensional personality measures and individual personality questions. A self report is perfectly adequate for that use. As the individual PDQ items have not been validated as outcome measures, they must be considered exploratory. I believe at this early stage of research this is acceptable.

Another limitation is that our definition of State PD tended to cap its total PDQ maximum score. This might create a slight bias for finding differences between the State PD and Trait PD groups. Another limitation is that subjects were excluded if they had previously failed response to adequate treatment. This probably reduces the amount of personality pathology in this sample as patients with more personality pathology are more likely to be nonresponders. This biases our study towards a negative finding due to the lack of personality pathology. That makes any positive findings that much more significant.

One could argue that what we are finding is merely a gradation of different levels of severity of Social Phobia. However, if this was the case the total Social Phobia symptoms as measures by the SPAI would show significant differences between the State and Trait groups. It did not (State 112.0 (SAD = 23.2) Trait 117.6 (SD = 22.8)). Thus in this case it does not appear we are examining differences in levels of Social Phobia symptoms in the State and Trait groups. The differences in Harm Avoidance also seem to indicate we are dealing with a personality phenomena.

The population studied here is different from an earlier population where a State personality group was identified. The earlier population was more disabled and lower functioning. This difference is by design as finding a State PD group in such diverse populations increases the validity of the concept of State personality disorder.

It must be considered whether the reduction we found in personality pathology is just the result of many personality instruments which tend to record less personality pathology when under a lower state of depression or anxiety. If this was the case we would not have been able to identify a specific group especially sensitive to these changes. Instead all groups would have changed equally. This is not what we found.

Although our finding of a State personality group strengthens the possibility that this is a real diagnostic group, its exact nature remains to be defined. It may ultimately be found to be a phenomenon categorized in a different category form State personality. Future work will have to include further replications of the existence of this group, natural course, comorbidity and prevalence.

REFERENCES

1. Reich J: An empirical examination of the concept of "stress induced" personality disorder. *Psychiatric Annals* 1999; 29:701–706.
2. Reich J: Comorbid anxiety/depression/personality: Viewed as a possible stress induced personality disorder syndrome. *Psychiatric Annals* 1999; 29: 707–712.
3. Reich J: Clinical correlated of stress-induced personality disorder. *Psychiatric Annals* 2002; 32:581–589.
4. Leonhard K: *Akzentuirerte personlichenkeiten*. Berlin: Verlag Volk und Gesundheit; 1968.
5. Bronisch T, Klerman G: Personality functioning: Change and stability in relationship to symptoms and psychopathology. *Journal of Personality Disorders* 1991; 5:307–317.
6. Mischel W: *Introduction to personality: A new look*, 4th ed. New York: Holt Rinehart and Winston; 1986.
7. Seivewright H, Tyrer T, Johnson T: Change in personality status in neurotic disorders. *Lancet* 2002; 359:2253.
8. DiNardo PA, Brown TA, Barlow DH: Anxiety disorders interview schedule for DSM-IV: Lifetime version (ADIS-IV-L). Graywind Publications Incorporated; 1994.
9. Turner SM, Beidel DC, Dancu CV, Stanley MA: An empirically derived inventory to measure social fears and anxiety: The Social Phobia and Anxiety Inventory. *Psychological Assessment* 1989; 1:35–40.
10. Speilberger CD, Gorsuch RL, Lushene RE: State trait anxiety inventory. Palo Alto, CA: Consulting Psychologists Press; 1970.
11. Hyler, S: *Personality Diagnostic Questionnaire IV (PDQ-IV)*, 1995. New York State Psychiatric Institute, 722 West 168th Street, New York, NY 10032.
12. Hyler, SE, Skodol, AE, Oldham, JM, Kellman, HD, Doidge, N: Validity of the personality diagnostic questionnaire-revised: A replication in an outpatient sample. *Comprehensive Psychiatry* 1992; 33:73–77.
13. Cloninger CR, Przybeck TR, Svrakic DM, Wetzel RD: *The temperament and Character Inventory (TCI): A guide to its development and use*. St. Louis, MO: Center for Psychobiology of Personality; 1994.
14. Heimberg RG: *Cognitive behavioral treatment of social phobia in a group setting: A treatment manual*. Center for Stress and Anxiety Disorders, State University of New York at Albany; 2000.