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Personality Pathology as a Risk Factor for Negative Health Perception

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Abstract

Previous findings suggest that self-perception of health relates to many physical health outcomes, including mortality. Many factors appear to shape health perceptions, like personality. Little research, however, has focused on whether personality pathology may affect perceived health. This preliminary study examined the unique effects of personality pathology on health perceptions beyond those of objective health and normal personality factors. We studied an epidemiologically-based, representative sample (N=697) of Saint Louis residents (ages 55–64). The Diagnostic Interview Schedule and the Health Status Inventory were used to collect reports of health perceptions, chronic illnesses, and physical functioning. Personality traits were measured with the revised NEO Personality Inventory and personality disorders were assessed using the Structured Interview for DSM-IV Personality. Number of physical illnesses, physical functioning, normal personality, and personality disorders all predicted self-perception of health separately. Personality disorders also predicted health perception above and beyond objective health and personality variables. These findings elucidate the importance of personality pathology in understanding perceived health and suggest that certain patterns of pathology may be particularly detrimental to subjective health.

Keywords

Personality; personality disorders; neuroticism; subjective health

Introduction

Self-perception of health is widely recognized in current research as an important indicator of future health outcomes (Fayers and Sprangers, 2002). Research has consistently demonstrated the relationship between global self-rated health and mortality, both in the short and long term (Blazer, 2008). Perceived health is also closely linked to health behaviors and is predictive of health care utilization (Schneider et al., 2004). Subjective health assessments correlate highly with corresponding objective health measures and physician ratings of health, but appear to add an additional dimension to understanding health status and outcomes (Unden et al., 2008). Two reviews of the effectiveness of health perceptions in predicting mortality in older adults showed consistent findings that self-rated health predicted mortality above and beyond objective health factors (Benyamini and Idler, 1999, Idler and Benyamini, 1997). Bath (2003) also found self-rated health to predict mortality in a sample of older adults, suggesting that with the emergence of greater health problems in adulthood, understanding how individual differences may influence health outcomes becomes particularly important.

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The Importance of Personality in Understanding Health

Perception of health is a complex construct associated with many factors unrelated to actual health (Smith and Mackenzie, 2006), including personality characteristics. In recent years, the Five Factor Model (FFM) has been used extensively to explore the relationship between physical health and personality using its five general personality domains (Kern and Friedman, 2008, Smith, 2006). Several studies have demonstrated that the broadly defined trait of neuroticism is associated with increased risk of objective health problems and mortality (Lahey, 2009, Wilson et al., 2004), while conscientiousness has been found to relate to healthy behaviors and longevity (Kern and Friedman, 2008). Beyond objective health outcomes, studies have also explored the relationship between personality and self-rated health, many of which focus on the association between neuroticism and perceived poor health. Research has consistently shown that people with higher levels of neuroticism report poorer health, independent of physical and mental health issues (Costa and McCrae, 1987; Goodwin and Engstrom, 2002).

Does personality pathology play an additional part?

Previous research has demonstrated an important link between personality, subjective health perception, and objective health outcomes. Research that explores the influence of personality disorders (PD) on subjective physical health, however, is sparse. Exploring more pathological elements of personality in health research may help explain problematic personality dimensions that affect health perception but are not captured entirely by normal personality characteristics.

Much of the available research on PDs and physical health has focused on specific disorders and their association with objective health outcomes, such as coronary heart disease and diabetes (Pietrzak et al., 2007). Research focused on the detrimental health effects of Borderline PD has reported a link between Borderline PD and obesity, an increased risk of chronic diseases like diabetes, and increased use of health care services (Bender et al., 2001, Frankenburg and Zanarini, 2006). Antisocial PD has also been studied as a risk factor for certain medical illnesses because of its frequent comorbidity with substance abuse (Frankenburg and Zanarini, 2006). Pietrzak and colleagues (2007) conducted a study on the association between PDs and coronary heart disease in a nationally representative sample of older adults. They found that PDs increased the chance of developing coronary heart disease by 26% when controlling for other demographic and health-related risk factors, with specific associations related to Schizoid, Avoidant, and Obsessive-Compulsive PDs.

To our knowledge, only two previous studies have examined subjective perception of health and PDs. Skodol and colleagues (2005) explored the relationship between PDs and perceived health in a sub-sample of depressed patients from the Collaborative Longitudinal Personality Disorders Study and found an association between presence of a PD in depressed patients and poorer perception of health. Similar findings have been reported from the Children in the Community Study, a longitudinal study of health outcomes in adolescents. The presence of a PD resulted in more negative perceptions of health (Chen et al., 2009).

The Present Study

A clear gap exists in available research on how PDs may affect subjective perception of health beyond the influence of normal personality characteristics, although evidence suggests that PDs have a significant negative effect on physical health outcomes (Hueston et al., 1999, Pietrzak et al., 2007). This paper reports preliminary findings regarding the influence of personality pathology on self-perception of health in middle-aged adults. More specifically, the current study has three primary goals: 1) to evaluate the independent

contributions of PDs to the prediction of self-perception of health, 2) to gain a richer understanding of the many factors that influence perceived health and how they can be understood together, and 3) to identify what patterns of personality pathology may be particularly detrimental to health perceptions.

Methods

Participants and Design

This article reports preliminary analyses of data collected as part of an ongoing, prospective study regarding the trajectory of personality pathology, beginning in middle-age and eventually extending into later life. This community-based sample included 697 adults between the ages of 55 and 64 years living in the St. Louis Metropolitan area (see Oltmanns and Gleason, in press for a more detailed description of study methods). We recruited participants using listed phone numbers that were crossed with current census data in order to identify households with one member in our age range. We asked households to identify all eligible residents between the ages of 55 and 64, and used the Kish method to identify the target participant if more than one person was in that age range. If the target refused to participate, we did not include any other eligible residents. Each participant received $60 compensation to complete a 3-hour assessment. After a complete description of the study was provided to participants, written consent was obtained.

Measures

Structured Interview for DSM-IV Personality (SIDP-IV) (Pfohl et al., 1997)—The interview includes 101 questions that correspond to the diagnostic criteria for the ten PDs. Questions are arranged by themes rather than by disorders (e.g., work style, interpersonal relationships, emotions, interests and activities), and each criterion is rated on a scale from 0 to 3. We calculated PD scores by summing the items associated with each PD and dividing by the number of items for that PD.

NEO-Personality Inventory-Revised (NEO PI-R) (Costa and McCrae, 1992)—The NEO PI-R is the standard measure of the FFM of personality. It provides a systematic assessment of emotional, interpersonal, experiential, attitudinal, and motivational styles. The NEO PI-R is a concise measure of the five major domains of personality (neuroticism, extraversion, openness, agreeableness, and conscientiousness), as well as the six traits or facets that define each domain. Adequate reliability and validity have been shown for both clinical and community samples (Costa and McCrae, 1992).

Computerized screening version of the Diagnostic Interview Schedule (CDIS) (Robins and Helzer, 1994)—The DIS is an assessment developed for non-clinicians to collect information that could be used to generate psychiatric diagnoses. Earlier versions of the DIS have been extensively pilot tested, and the validity and reliability of those data indicate good agreement between diagnoses obtained by lay interviewers and clinicians.

We used only the health portion of the interview for the present analyses. We summed participants' report of being under a doctor's care for heart disease, cancer, hepatitis, stroke, arthritis, asthma, diabetes, bleeding ulcer, epilepsy, or any other long-lasting physical illness to create a count of chronic physical illnesses. Hypertension was separated from the *other* category into its own because of its high prevalence rate in this sample. We measured subjective perception of health with a summed score taken from the C-DIS general health status question (In the last 12 months, would you describe your general health as (1) excellent, (2) good, (3) fair, or (4) poor) and the HSI general health status question (see below).

RAND-36 Health Status Inventory (HSI) (Hays and Morales, 2001)—The HSI is a 36-item questionnaire that covers a wide spectrum of physical and mental health. It provides scores on 8 health constructs including: physical functioning, role limitations due to physical/emotional problems, pain, general health perceptions, emotional wellbeing, social functioning, and energy. Extensive data are available regarding the reliability and validity of these scales (Moorer et al., 2001). We included the general health status question (In general, would you say your health is (1) excellent, (2) very good, (3) good, (4) fair, or (5) poor) and physical functioning composite score in statistical analyses. The physical functioning composite is made up of questions related to one's level of daily functioning in activities like bathing, dressing oneself, carrying groceries, and walking up stairs or around the block.

Statistical Analyses

We used descriptive statistics to characterize the prevalence of chronic physical illnesses and number of illnesses per participant. We also conducted bivariate correlation analyses to identify factors (physical functioning, number of chronic illnesses, normal personality characteristics, and the ten DSM-IV PDs) associated with perceived health.

Next, we used linear regression analyses to determine the predictive value of each variable on perceived health. Possible interactions between the health and personality variables and gender were tested and no significant gender interactions emerged. As a result, all analyses reflect the entire sample.

Finally, to examine the unique contributions of the variables in predicting health perception, we employed hierarchical linear regression with objective health status measures, neuroticism, and each DSM-IV PD as predictors of self-perceived health. The PDs were tested individually as predictors of perceived health above the effects of objective health and normal personality factors. All tests were two-tailed with a cutoff for significance of $p<0.01$. Analyses were conducted using SPSS software.

Results

Demographics

The sample included 697 adults between the ages of 55 and 64 (57% females). Participants were predominantly Caucasian (69.5%) or African American (28.5%). As might be expected in this age group, we saw a fairly high rate of physical illnesses, with 13.9% reporting diabetes, 14.5% hypertension, 9.0% heart disease, and 18.9% other illnesses, including hypothyroidism and chronic pain problems. Rates of chronic illnesses were similar for men and women. Table 1 presents further demographic details of the study sample.

Correlation Analyses

We examined the relationship strength between the ten DSM-IV PDs, five NEO domain scores, objective health indicators (i.e., number of chronic physical illnesses and physical functioning), and perceived health using bivariate correlation analyses. As Table 2 demonstrates, Schizoid, Schizotypal, Paranoid, Antisocial, Borderline, and Avoidant PD were significantly negatively related ($p<.01$) to perceived health. A significant negative correlation ($p<.01$) was also found for neuroticism and number of chronic physical illnesses. Physical functioning (i.e., the level of functioning in daily activities) had a significant positive correlation ($p<.01$) with perceived health. Conscientiousness, extraversion, agreeableness, and openness were also significantly positively correlated ($p<.01$) with perceived health.

Regression Analyses

We used linear regression analyses to determine whether objective health indicators, NEO factors, and PD scores predicted perceived health. As shown in Table 3, number of chronic illnesses, physical functioning, NEO factors, and PD scores all significantly predicted perceived health ($p<.01$). Out of the five factors, only neuroticism ($p<.01$) was significantly related to poor perceived health. Of the ten DSM-IV PDs, only Schizoid, Antisocial, and Borderline PD predicted ($p<.01$) negative perceptions of health.

Finally, Table 4 describes a hierarchical linear regression showing the effect of PDs on perceived health when all other variables are controlled. Physical illness and functioning were predictive of perceived health in Steps 1 and 2. Neuroticism, when added in Step 3, was significantly predictive ($p<.01$) of poor perceived health. The predictive value of specific PDs significantly increased in Step 4, with Schizoid, Antisocial, and Borderline PD significantly predicting ($p<.01$) negative perceived health above objective health and normal personality factors. The other seven PDs were not predictive poor perceived health when the other variables were controlled.

Discussion

This is the first study to explore the relationship between both normal and pathological personality characteristics and self-perception of health in a representative community sample. Consistent with prior findings (Goodwin and Engstrom, 2002, Schneider *et al.*, 2004), this study demonstrates that a dimension beyond objective health contributes to self-perception of health. Specifically, our results suggest that normal personality characteristics and personality pathology, beyond the effects of objective health measures, are important predictors of perceived health. As found in previous research on the unique effects of normal personality (Goodwin and Engstrom, 2002), neuroticism is predictive of poor health perceptions. Of particular interest, our data show that several DSM-IV PDs significantly affect self-perception of health independent of objective health indicators and normal personality characteristics.

Three of the ten PDs emerged as significant predictors of self-rated health in the sample after controlling for objective health and normal personality characteristics: Borderline, Antisocial, and Schizoid PD. Both Borderline and Antisocial PD are linked to risk of serious physical illnesses (Frankenburg and Zanarini, 2006), and so it is not surprising that these disorders are also linked to health perception. Some research suggests an improvement in certain Borderline symptoms, like impulsivity, in older adulthood (Blum et al., 2008). If our sample includes individuals with less severe manifestations of symptoms commonly associated with physical health problems (i.e., impulsivity), looking at the dimensional representation of borderline symptoms and perceived health may show some of the long term effects associated with problematic personality patterns that remain after symptoms have decreased.

The link between Schizoid PD and perceived health is somewhat less clear. Common symptoms characteristic of Schizoid PD, including social isolation and lack of emotion or pleasure in life, may inhibit the healthy functioning that promotes well-being and instead make coping with health problems or everyday stressors more difficult. Recent research has explored the positive effects of emotional vitality, finding that positive well-being and emotion regulation can protect against the risk of coronary heart disease (Kubzansky and Thurston, 2007). Additionally, research has shown the possible protective role of social support on aging (Blazer, 2008). The association between Schizoid PD and negative health perceptions may be an initial demonstration of the other side of this continuum. Our research suggests that complex, negative personality pathology has an important influence on health

perceptions (and potentially on outcomes) that is not fully captured by looking only at levels of normal personality characteristics.

While our results demonstrate an important link between high levels of neuroticism, personality pathology, and negative perceptions of health, we did not find a significant relationship between personality and positive health perceptions. There is a growing body of research showing conscientiousness as a protective factor in healthy aging (Kern and Friedman, 2008, Martin et al., 2007). The non-significant relationship between conscientiousness and positive perceptions of health in our study further demonstrate that there is more to understand in how personality and healthy aging relate. It may be that the association between conscientiousness and longevity has less to do with one's perception of health and is instead influenced by certain behavioral results (e.g., health behaviors) (Bogg and Roberts, 2004). Further insight into the positive role that personality can play in promoting health is necessary in future research and may assist us in also better understanding the deleterious effect of personality pathology on health outcomes.

Limitations

The primary limitation of this study is the use of self-report questionnaires to obtain measures of health and normal personality characteristics. Several factors, however, limit this concern. First, although it would have been ideal to have had access to medical records to check participants' reports of physical illnesses and functioning, researchers have found little discrepancy between self-reports of physical illnesses and documented medical histories (Goodwin and Engstrom, 2002). Second, the health perception variable we used is a composite variable made up of two global health questions. We did this to create a more reliable measure of subjective health, although research has shown that self-rated health remains a significant indicator of mortality and other health-related outcomes despite minor discrepancies in wording (Fayers and Sprangers, 2002). Finally, we included an interview-based measure of personality pathology in an attempt to counter any bias from our self-report measure of personality. We measured PDs on a continuous scale rather than with the current DSM-IV categorical system. Many measurement problems associated with the current model, including extensive comorbidity among PDs and the use of arbitrary cutoff points, have initiated movement towards a dimensional model that would classify PDs on a personality continuum (Tackett et al., 2008, Widiger, Livesley, and Clark, 2009). Additionally, research has shown that personality dimensions may predict health outcomes better than distinct categorical PDs (Frankenburg and Zanarini, 2006). Using a dimensional score to measure PDs in our study added complexity to each PD variable that may have been lost by defining them in terms of dichotomous categories.

This article is a preliminary report of health and personality data that are being collected in an on-going longitudinal study. Our goal in this report was to examine pathological personality variables as an additional factor in health research and explore the complex link between normal and abnormal personality in describing self-perceptions of health. As our study continues, we hope to address the relationship between subjective and objective health, normal personality, and personality pathology with methods other than cross-sectional analyses. Addressing these questions longitudinally may help us disentangle the nature of the relationship between personality and health. In addition, measurement of health behaviors (e.g., smoking, drinking, and exercise) will add further insight into how these variables relate. Use of informant reports on personality and health functioning may provide another perspective on how personality influences health perceptions, although this is beyond the scope of the current article.

Clinical Implications and Conclusions

The preliminary findings from this study show that both normal and pathological personality characteristics are important in understanding how individuals evaluate their health status. Personality pathology appears to independently affect people's self-perception of health, and therefore should not be ignored when trying to understand how health perceptions and health outcomes, like mortality, are related. The potential protective ability of personality traits in promoting health should also not be disregarded, however, and examining both ends of the spectrum will better inform us on what interventions are needed to increase healthy aging.

Research has already shown that PDs can interfere with successful medical treatment and that individuals with PDs may use health care facilities more often yet be less satisfied with care (Hueston et al., 1999, Bender et al., 2001). Health-based interventions that focus on personality change may help reduce unnecessary health care utilization (and cost) and negative health-related outcomes in individuals with an unexplainably poor perception of health.

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References

Bath P. Differences between older men and women in the self-rated health mortality relationship. The Gerontologist. 2003; 43:387–395. [PubMed: 12810903]

Bender D, Dolan R, Skodol A, Sanislow C, Dyck I, et al. Treatment utilization by patients with personality disorders. American Journal of Psychiatry. 2001; 158:295–302. [PubMed: 11156814]

Benyamini Y, Idler E. Community studies reporting association between self rated health and mortality, additional studies, 1995 to 1998. Research on Aging. 1999; 21:392–401.

Blum N, Franklin J, Hansel R, McCormick B, John D, et al. Relationship of age to symptom severity, psychiatric comorbidity and health care utilization in persons with borderline personality disorder. Personality and Mental Health. 2008; 2:25–34.

Blazer D. How do you feel about … ? Health outcomes in late life and self perceptions of health and well-being. The Gerontologist. 2008; 48:415–422. [PubMed: 18728291]

Bogg T, Roberts B. Conscientiousness and health-related behaviors: A meta analysis of the leading behavioral contributors to mortality. Psychological Bulletin. 2004; 130:887–919. [PubMed: 15535742]

Chen H, Cohen P, Crawford T, Kasen S, Guan B, Gorden K. Impact of early adolescent psychiatric and personality disorder on long-term physical health: A 20-year longitudinal follow-up study. Psychological Medicine. 2009; 39:865–874. [PubMed: 18775086]

Costa P, McCrae R. Neuroticism, somatic complaints, and disease: Is the bark worse than the bite? Journal of Personality. 1987; 55:299–316. [PubMed: 3612472]

Costa P, McCrae R. The five-factor model of personality and its relevance to personality disorders. Journal of Personality Disorders. 1992; 6:343–359.

Fayers P, Sprangers M. Understanding self-rated health. The Lancet. 2002; 259:187–188.

Frankenburg F, Zanarini M. Personality disorders and medical comorbidity. Current Opinion in Psychiatry. 2006; 19:428–431. [PubMed: 16721176]

Goodwin R, Engstrom G. Personality and the perception of health in the general population. Psychological Medicine. 2002; 32:325–332. [PubMed: 11866326]

Hays R, Morales L. The RAND-36 measure of health-related quality of life. Annals of Medicine. 2001; 33:350–357. [PubMed: 11491194]

Hueston W, Werth J, Mainous A. Personality disorder traits: Prevalence and effects on health status in primary care patients. International Journal of Psychiatry in Medicine. 1999; 29:63–74. [PubMed: 10376233]

Idler E, Benyamini Y. Self-rated health and mortality: A review of twenty seven community studies. Journal of Health and Social Behavior. 1997; 38:21–37. [PubMed: 9097506]

Kern M, Friedman H. Do conscientious individuals live longer? A quantitative review. Health Psychology. 2008; 27:505–512. [PubMed: 18823176]

Kubzansky L, Thurston R. Emotional vitality and incident coronary health disease. Archives of General Psychiatry. 2007; 64:1393–1401. [PubMed: 18056547]

Lahey B. Public health significance of neuroticism. American Psychologist. 2009; 64:241–256. [PubMed: 19449983]

Martin LR, Friedman HS, Schwartz JE. Personality and Mortality Risk Across the Life Span: The Importance of Conscientiousness as a Biopsychosocial Attribute. Health Psychology. 2007; 26:428–436. [PubMed: 17605562]

Moorer P, Suurmeijer T, Foets M, Molenaar I. Psychometric properties of the RAND-36 among three chronic diseases in the Netherlands. Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care & Rehabilitation. 2001; 10:637–645.

Oltmanns, T.; Gleason, M. Personality, health, and social adjustment in later life. In: Cottler, L., editor. Mental health in public health: The next 100 years. New York: Oxford University Press; (in press)

Ozer D, Benet-Martinez V. Personality and the prediction of consequential outcomes. Annual Review of Psychology. 2006; 57:401–421.

Pfohl, B.; Blum, N.; Zimmerman, M. Structured Interview for DSM-IV Personality. Washington DC: American Psychiatric Press, Inc.; 1997.

Pietrzak R, Wagner J, Petry N. DSM-IV personality disorders and coronary heart disease in older adults: Results from the national epidemiological survey on alcohol and related conditions. Journal of Gerontology. 2007; 62B:295–299.

Robins L, Helzer J. The half-life of a structured interview: The NIMH Diagnostic Interview Schedule (DIS). International Journal of Methods in Psychiatric Research. 1994; 4:95–102.

Schneider G, Driesch G, Kruse A, Wachter M, Nehen H, Heuft G. What influences self-perception of health in the elderly? The role of objective health condition, subjective well-being and sense of coherence. Archives of Gerontology and Geriatrics. 2004; 39:227–237. [PubMed: 15381341]

Skodol A, Grilo C, Pagano M, Bender D, Gunderson J, et al. Effects of personality disorders on functioning and well-being in major depressive disorder. Journal of Psychiatric Practice. 2005; 11:363–368. [PubMed: 16304504]

Smith T. Personality as a risk and resilience in physical health. Current Directions in Psychological Science. 2006; 15:227–231.

Smith T, Mackenzie J. Personality and risk of physical illness. Annual Review of Clinical Psychology. 2006; 2:435–467.

Tackett J, Silberschmidt A, Krueger R, Sponheim S. A dimensional model of personality disorder: Incorporating DSM Cluster A characteristics. Journal of Abnormal Psychology. 2008; 117:454–459. [PubMed: 18489222]

Unden A, Elofsson S, Andreasson A, Hillered E, Eriksson I, Brismar K. Gender differences in self-rated health, quality of life, quality of care, and metabolic control in patients with diabetes. Gender Medicine. 2008; 5:162–180. [PubMed: 18573483]

Widiger T, Livesley J, Clark L. An integrative dimensional classification of personality disorder. Psychological Assessment. 2009; 21:243–255. [PubMed: 19719338]

Wilson R, Mendes de Leon C, Bienias J, Evans D, Bennett D. Personality and mortality in old age. The Journals of Gerontology. 2004; 59B:110–116.

Table 1

Demographics

Gender		***Physical Illnesses***	
Male	42.9	Heart Disease	9.0
Female	57.1	Hypertension	14.5
Race		Cancer	13.8
Caucasian	69.5	Diabetes	13.9
African American	28.5	Hepatitis	4.9
Hispanic	0.6	Stroke	2.4
Asian	0.4	Arthritis	25.1
Other	1.0	Asthma	10.5
Marital Status		Tuberculosis	1.4
Never Married	12.8	Bleeding Ulcer	2.6
Currently Married	50.3	Epilepsy	1.1
Divorced	23.9	Other	18.9
Widowed	6.8		
Other	6.2		
Education Level		***Number of Illnesses***	
< High School	1.4	Zero	30.7
High School Diploma	27.3	One	35.4
Bachelors Degree	26.9	Two	21.8
Masters Degree or greater	27.1	Three or greater	12.1
Other	17.3		

Note: Data are presented as percentages unless otherwise specified.

Table 2

Correlation Analyses between Self-Perception of Health, PDs, NEO Factors, and Objective Health Indicators

Correlation Analyses	**Health Perception**
DSM-IV PDs	*Pearson's Correlation (r)*
Schizoid	−.19**
Schizotypal	−.17**
Paranoid	−.12**
Antisocial	−.16**
Borderline	−.21**
Histrionic	−.06
Narcissistic	−.04
Avoidant	−.12**
Dependent	−.08*
Obsessive-Compulsive	−.04
NEO factors	
Neuroticism	−.26**
Extraversion	.16**
Openness	.16**
Agreeableness	.11**
Conscientiousness	.14**
Objective Health	
Physical Functioning	.59**
Number of Illnesses	−.50**

p<.05*,

p<.01**

Table 3

Linear Regression Predicting Health Perception from Number of Illnesses, Physical Functioning, NEO factors, and DSM-IV PDs

Outcome	Predictors	R	Δ R^2	F	df	Stand.β	t
Perceived Health							
	Number of Illnesses	.50	.25	226.27**	695	−.50	−15.04**
	Physical Functioning	.59	.35	362.21**	686	.59	19.03**
	NEO factors	.29	.09	13.04**	691		
	Neuroticism					−.24	−5.15**
	Extraversion					.03	.71
	Openness					.12	3.07**
	Agreeableness					.01	.19
	Conscientiousness					−.01	−.09
	DSM-IV PDs	.28	.08	5.99**	686		
	Schizoid					−.11	−2.52**
	Paranoid					−.02	−.46
	Schizotypal					−.06	−1.33
	Antisocial					−.10	−2.32**
	Borderline					−.13	−2.69**
	Histrionic					.00	−.01
	Narcissistic					.01	.16
	Avoidant					−.05	−1.21
	Dependent					.01	.21
	Obsessive-Compulsive					.05	1.15

p<.01**

Table 4

Hierarchical Linear Regression Predicting Health Perception from Number of Illnesses (Step 1), Physical Functioning (Step 2), Neuroticism (Step 3), DSM-IV PDs (Step 4)

Predicting Health Perception	***R***	**Δ R^2**	***F***	**df**	***P* change**
Step 1: Num Illnesses	.50	.25	224.11	686	<.001**
Step 2: Physical Functioning	.64	.17	193.49	685	<.001**
Step 3: Neuroticism	.66	.02	24.83	684	<.001**
Step 4: PDs					
Schizoid	.66	.01	6.69	683	.01**
Borderline	.66	.01	8.24	683	.004**
Antisocial	.66	.01	9.37	683	.002**

p<.01**

Note: Only significant results of Step 4 are included.