SHORT REPORT

The prediction of healthcare utilization by three self-report measures for borderline personality

RANDY A. SANSONE[1,2,3], JAMIE S. MCLEAN[1] & MICHAEL W. WIEDERMAN[4]

Departments of [1]*Psychiatry and*, [2]*Internal Medicine, Wright State University School of Medicine, Dayton, OH, USA,*
[3]*Kettering Medical Center, Kettering, OH, USA, and,* [4]*Department of Human Relations, Columbia College, Columbia, SC, USA*

Abstract
Objective. In this study, we explored the ability of three self-report measures for borderline personality disorder (BPD) to predict psychiatric and medical (i.e. non-psychiatric) healthcare utilization. *Methods.* Using a sample of convenience and survey methodology, we asked participants ($N=120$) to complete the borderline personality scale of the Personality Diagnostic Questionnaire-4 (PDQ-4), the Self-Harm Inventory (SHI), the McLean Screening Inventory for Borderline Personality Disorder (MSI-BPD), and several variables relating to psychiatric and medical healthcare utilization. *Results.* The SHI demonstrated the greatest number of correlations with healthcare utilization, particularly with regard to psychiatric care. *Conclusions.* The SHI provides several functions for clinicians including the identification of self-harm behaviors, confirmation of the diagnosis BPD, and prediction of psychiatric healthcare utilization.

Key Words: *Borderline personality, healthcare utilization, Self-Harm Inventory*

Introduction

A number of studies have confirmed higher rates of healthcare utilization among individuals with borderline personality disorder (BPD), both in psychiatric as well as medical (i.e. non-psychiatric) settings. For example, in a psychiatric setting, Bender and colleagues [1] found that, compared to participants with major depression, those with BPD used more mental health services. Among psychiatric inpatients, Sansone et al. [2] found that, compared to those without BPD, those with BPD evidenced more days of psychiatric hospitalization, reported a greater number of courses of psychotherapy treatment, and were seen by more psychiatrists. Among psychiatric outpatients being treated in a university clinic, Sansone et al. [3] found that, compared to participants without BPD, those with the disorder were prescribed significantly more psychotropic medications and completed significantly more psychotherapy sessions. Finally, Ansell and colleagues [4] compared patients with BPD to those with another personality disorder, a mood or anxiety disorder, or no psychiatric disorder at all, and found that the BPD subsample was characterized by significantly greater psychiatric treatment utilization than the other subsamples.

Among patients with BPD, the preceding findings regarding psychiatric utilization are echoed in medical utilization patterns in primary care settings (e.g., a greater number of office visits, telephone calls, prescriptions, referrals) [5–7]. Ansell and colleagues [4] also affirmed greater medical healthcare utilization by patients with BPD. In a study of Gulf-war veterans, Black and colleagues [8] found that, compared to non-BPD participants, individuals with BPD or related traits demonstrated increased utilization of healthcare resources. Finally, Frankenburg and Zanarini [9] found that unremitted borderlines (i.e. those with continuing Axis II symptoms) evidenced a heightened risk of suffering from chronic physical conditions as well as greater use of costly forms of medical services.

Given the preceding data, we compared three self-report measures for BPD in an effort to assess their ability to predict healthcare utilization, either psychiatric or medical, among patients with this Axis II disorder.

Correspondence: Randy A. Sansone, M.D., Sycamore Primary Care Center, 2115 Leiter Road, Miamisburg, Ohio 45342, USA. Tel.: +1-937-384-6850. Fax: +1-937-384-6938. E-mail: randy.sansone@khnetwork.org

Method

Participants

Participants were 47 male and 73 female psychiatric inpatients who were being treated in an urban community hospital located in a mid-sized mid-western city. All participants were under the care of one attending psychiatrist and 18 years of age or older. Exclusion criteria were cognitive (e.g., psychosis, dementia), medical, or intellectual impairment that would preclude the successful completion of a survey. Of the 145 individuals approached, 120 agreed to participate for a response rate of 82.8%.

Respondents ($N = 120$) ranged in age from 18 to 74 years (*Mean* $= 38.69$, *SD* $= 11.74$). With regard to race/ethnicity, 81.5% were White, 15.1% African-American, two Native American, one Asian, and one "Other". With regard to the highest level of completed education, 12.7% had not graduated from high school, 35.6% had completed high school, 35.6% some college coursework but not a degree, 9.3% college, and 6.8% graduate school.

Procedure

During a weekly visit to the inpatient psychiatric unit, one investigator (JSM) solicited candidates for participation. After an explanation of the project, participants were given a research booklet that explored demographic information (e.g., sex, age, race/ethnicity, highest completed education), several variables related to both psychiatric and medical healthcare utilization, and the diagnosis of BPD. In this study, we utilized the following three self-report measures for the assessment of BPD.

Borderline personality scale of the Personality Diagnostic Questionnaire-4 (PDQ-4) [10]. The borderline personality scale of the PDQ-4 is a nine-item, true/false, self-report measure that consists of the diagnostic criteria for borderline personality that are listed in the DSM-IV [11]. A score of 5 or higher is highly suggestive of BPD. Earlier versions of the PDQ have been confirmed as useful screening tools for borderline personality in both clinical [12,13] and nonclinical samples [14], including the use of the free-standing borderline scale [15].

Self-Harm Inventory (SHI) [16]. The SHI is a 22-item, yes/no, self-report inventory that explores participants' histories of self-harm behavior. Each item in the inventory is preceded by the statement, "Have you ever intentionally, or on purpose, …" and individual items include, "overdosed, cut yourself on purpose, burned yourself on purpose", and

"hit yourself". Each endorsement is in the pathological direction and the SHI total score is the summation of "yes" responses. SHI total scores of 5 or higher are highly suggestive of the diagnosis of BPD. Indeed, in comparison with the Diagnostic Interview for Borderlines [17], the gold standard for the diagnosis of borderline personality in research settings, the SHI demonstrates an accuracy in diagnosis of 84% [18].

McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD) [18]. The MSI-BPD is a 10-item, yes/no, self-report questionnaire that explores borderline personality symptomatology. All endorsements are in the pathological direction and scores of 7 or higher are suggestive of this disorder. The MSI-BPD has undergone limited clinical study and is recommended by the authors as a screening measure for BPD.

Participants were not paid for their participation in this project. Because of the survey methodology, written consent was not obtained; rather, completion of the survey was assumed to be implied consent. This project was approved by the Institutional Review Boards of both the community hospital and the university.

Results

Table I reports the simple correlations between BPD and each form of psychiatric and medical healthcare utilization. Note that overall, SHI scores were consistently related to psychiatric healthcare utilization as well as the lifetime number of medical hospitalizations.

With regard to the other two measures of BPD, there were correlations between the PDQ-4 and MSI-BPD, and the number of times seen in an emergency room in the past 5 years. In examining the items of these measures, we found that the mean number of emergency room visits for those who endorsed PDQ-4 item, "I either love someone or hate them, with nothing in between", was significantly higher ($M = 9.27$, SD $= 11.55$) than the mean for those who did not endorse that item ($M = 4.80$, SD $= 4.65$), $t(1,106) = -2.83$, $P < 0.01$. Similarly, the mean number of emergency room visits for those who endorsed MSI-BPD item, "Have you made desperate efforts to avoid feeling abandoned or being abandoned?", was significantly higher ($M = 7.15$, SD $= 8.20$) than the mean for those who did not endorse that item ($M = 4.13$, SD $= 4.28$), $t(1,107) = -2.30$, $P < 0.03$. No other statistically significant differences existed in the number of emergency room visits between respondents who did and did not endorse each of the other PDQ-4 and MSI-BPD items.

Table I. Simple correlations between healthcare utilization and scores on three self-report measures for borderline personality disorder.

	PDQ-4	SHI	MSI-BPD
Psychiatric utilization			
Times hospitalized in psychiatric facility	0.09	0.23*	0.20*
Number of psychiatrists seen	0.14	0.24*	0.11
Number of individual therapists seen	0.09	0.27**	0.13
Medical (non-psychiatric) utilization			
Lifetime number of medical hospitalizations	0.10	0.25**	0.18
Number of medical physicians seen in past 5 years	0.10	0.02	0.03
Number of times in emergency room in past 5 years	0.25**	0.11	0.21*
Lifetime number of surgeries	0.01	0.12	0.12

*$P < 0.05$, **$P < 0.01$, both two-tailed.
PDQ-4, borderline personality scale of the Personality Diagnostic Questionnaire-4 [10]; SHI, Self-Harm Inventory [16]; MSI-BPD, McLean Screening Instrument for Borderline Personality Disorder [18].

Discussion

In this study, we found that the SHI was the BPD self-report measure that most correlated with healthcare utilization, particularly for psychiatric services. This may reflect the nature of the measure, which explores explicit self-harm behaviors. Endorsement of self-harm behaviors appears to readily predict greater levels of psychiatric healthcare utilization. In addition, the SHI demonstrated a correlation with the lifetime number of medical hospitalizations. Whether these hospitalizations are independent of, or secondary to, self-harm behavior is not evident from these data, but warrants further exploration. The SHI would seem to be a valuable clinical tool in both inpatient and outpatient psychiatric settings given the ability of this measure to: (1) catalogue self-harm behaviors; (2) diagnose BPD; and (3) predict for high levels of psychiatric utilization.

In examining the PDQ-4 and MSI-BPD items that were associated with the number of times a respondent had been in the emergency room in the past 5 years (i.e. love/hate someone, desperate attempts to avoid abandonment), perhaps these relate to acute and unexpected terminations of relationships, which then precipitated an emotional crisis and evaluation in the emergency room. We did not assess the context of these emergency room visits.

This study has a number of limitations including the self-report nature of all of the data, the small sample size, and the use of an inpatient sample (i.e. we do not know if these findings generalize to outpatient samples). However, these data indicate that, compared with the PDQ-4 and the MSI-BPD, the SHI is the most accurate of the three in predicting psychiatric healthcare utilization. Indeed, being aware of this predisposition at the outset of patient assessment may aid clinicians in efficiently using available resources as well as discouraging the inappropriate use of healthcare services.

Key points

- Of three self-report measures for BPD, the Self-Harm Inventory demonstrated the most correlations with variables related to healthcare utilization, particularly psychiatric healthcare utilization
- The Self-Harm Inventory appears to perform three important functions for clinicians: (1) cataloguing self-harm behaviors; (2) diagnosing borderline personality disorder; and (3) predicting for psychiatric healthcare utilization

Statement of interest

The authors do not have any conflict of interest.

References

[1] Bender DS, Skodol AE, Pagano ME, Dyck IR, Grilo CM, Shea MT, et al. Prospective assessment of treatment use by patients with personality disorders. Psychiatr Serv 2006; 57:254–7.

[2] Sansone RA, Songer DA, Miller KA. Childhood abuse, mental healthcare utilization, self-harm behavior, and multiple psychiatric diagnoses among inpatients with and without a borderline diagnosis. Compr Psychiatry 2005;46:117–20.

[3] Sansone RA, Rytwinski D, Gaither GA. Borderline personality and psychotropic medication prescription in an outpatient psychiatry clinic. Compr Psychiatry 2003;44: 454–8.

[4] Ansell EB, Sanislow CA, McGlashan TH, Grilo CM. Psychosocial impairment and treatment utilization by patients with borderline personality disorder, other personality disorders, mood and anxiety disorders, and a healthy comparison group. Compr Psychiatry 2007;48:329–36.

[5] Sansone RA, Sansone LA, Wiederman MW. Borderline personality disorder and health care utilization in a primary care setting. South Med J 1996;89:1162–5.

[6] Sansone RA, Wiederman MW, Sansone LA. Health care utilization and history of trauma among women in a primary care setting. Violence Vict 1997;12:165–72.

[7] Sansone RA, Wiederman MW, Sansone LA. Borderline personality symptomatology, experience of multiple types of trauma, and health care utilization among women in a primary care setting. J Clin Psychiatry 1998;59:108–11.

[8] Black DW, Blum N, Letuchy E, Carney Doebbeling C, Forman-Hoffman VL, Doebbeling BN. Borderline person-

ality disorder and traits in veterans: Psychiatric comorbidity, healthcare utilization, and quality of life along a continuum of severity. CNS Spectr 2006;11:680–9.

[9] Frankenburg FR, Zanarini MC. The association between borderline personality disorder and chronic medical illnesses, poor health-related lifestyle choices, and costly forms of health care utilization. J Clin Psychiatry 2004;65: 1660–5.

[10] Hyler S. Personality Diagnostic Questionnaire-4 (PDQ-4). New York: New York State Psychiatric Institute; 1995.

[11] American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4th ed. Washington, DC: American Psychiatric Association; 1994.

[12] Dubro AF, Wetzler S, Kahn MW. A comparison of three self-report questionnaires for the diagnosis of DSM-III personality disorders. J Personal Disord 1988;2:256–66.

[13] Hyler SE, Lyons M, Rieder RO, Young L, Williams JB, Spitzer RL. The factor structure of self-report DSM-III Axis II symptoms and their relationship to clinicians' ratings. Am J Psychiatry 1990;147:751–7.

[14] Johnson JG, Bornstein RF. Utility of the Personality Diagnostic Questionnaire-Revised in a nonclinical sample. J Personal Disord 1992;6:450–7.

[15] Patrick J, Links P, Van Reekum R, Mitton MJE. Using the PDQ-R BPD scale as a brief screening measure in the differential diagnosis of personality disorder. J Personal Disord 1995;9:266–74.

[16] Sansone RA, Wiederman MW, Sansone LA. The Self-Harm Inventory (SHI): Development of a scale for identifying self-destructive behavior and borderline personality. J Clin Psychol 1998;54:973–83.

[17] Kolb JE, Gunderson JG. Diagnosing borderline patients with a semi-structured interview. Arch Gen Psychiatry 1980;37:37–41.

[18] Zanarini MC, Vujanovic AA, Parachini EA, Boulanger JL, Frankenburg FR, Hennen J. A screening measure for BPD: The Mclean Screening Instrument for Borderline Personality Disorder (MSI-BPD). J Personal Disord 2003;17: 568–73.