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# Is research on borderline personality disorder underfunded by the National Institute of Health?

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ABSTRACT

The relationship between bipolar disorder and borderline personality disorder has generated intense interest. Similar to patients with bipolar disorder, patients with borderline personality disorder are frequently hospitalized, are chronically unemployed, abuse substances, attempt and commit suicide. However, one significant difference between the two disorders is that patients with borderline personality disorder are often viewed negatively by mental health professionals. In the present paper we examined whether this negative bias against borderline personality disorder might be reflected in the level of research funding on the disorder. We searched the National Institute of Health (NIH) Research Portfolio Online Portfolio Reporting Tool (RePORT) for the past 25 years and compared the number of grants funded and the total amount of funding for borderline personality disorder and bipolar disorder. The yearly mean number of grants receiving funding was significantly higher for bipolar disorder than for borderline personality disorder. Results were the same when focusing on newly funded grants. For every year since 1990 more grants were funded for bipolar disorder than borderline personality disorder. Summed across all 25 years, the level of funding for bipolar disorder was more than 10 times greater than the level of funding for borderline personality disorder ($622 million vs. $55 million). These findings suggest that the level of NIH research funding for borderline personality disorder is not commensurate with the level of psychosocial morbidity, mortality, and health expenditures associated with the disorder.

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## 1. Introduction

The relationship between bipolar disorder and borderline personality disorder has generated intense interest with several review articles and commentaries examining and discussing their interface and differential diagnosis (Dolan-Sewell et al., 2001; Paris, 2004; Smith et al., 2004; Sripada and Silk, 2007; Antoniadis et al., 2012; Belli et al., 2012; Coulston et al., 2012; Elisei et al., 2012; Barroilhet et al., 2013; Bayes et al., 2014; Ghaemi et al., 2014). Both bipolar disorder and borderline personality disorder are serious mental health disorders resulting in significant psychosocial morbidity, reduced health related quality of life, and excess mortality. In largely separate literatures both disorders have been associated with impaired occupational functioning (Skodol et al., 2002; Morgan et al., 2005; Kessler et al., 2006; Ansell et al., 2007; Zanarini et al., 2009; Zimmerman et al., 2010), impaired social functioning (Jovev and Jackson, 2006; Grant et al., 2008; Judd et al., 2008; Gunderson et al., 2011; Miklowitz, 2011; Jeung and Herpertz, 2014; Lazarus et al., 2014), substance use problems (Trull et al., 2000; Goldberg, 2001; Grant et al., 2008; Oquendo et al., 2010; Farren et al., 2012; Di Florio et al., 2014), high rates of suicide (Isometsa et al., 1994; Angst et al., 2002; Pompili et al., 2005; Baldessarini et al., 2006; McIntyre et al., 2008; Oquendo et al., 2010;) and suicide attempts, (Baldessarini et al., 2006; McIntyre et al., 2008; Oquendo et al., 2010; Zimmerman et al., 2014), and high health care utilization and costs (Bender et al., 2001; Morgan et al., 2005; Kessler et al., 2006; van Asselt et al., 2007; Soeteman et al., 2008; Dilsaver, 2011; Williams et al., 2011; Kleine-Budde et al., 2013).

While both disorders are associated with high levels of morbidity and mortality, they are perceived differently. For some, bipolar disorder has been considered a desirable diagnosis (Chan and Sireling, 2010). Celebrities have appeared on the cover of popular press magazines with accompanying articles discussing their bipolar disorder diagnosis.

In contrast, patients with personality disorders in general, and borderline personality disorder in particular, are viewed negatively and more difficult to treat by mental health professionals (Lewis and Appleby, 1988; Gallop et al., 1989; Cleary et al., 2002). They are the patients that some clinicians are reluctant to treat (Lewis and

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Appleby, 1988; Black et al., 2011). Clinicians perceive patients with personality disorders as less mentally ill, more manipulative, and more able to control their behavior than patients with other psychiatric disorders (Lewis and Appleby, 1988; Markham and Trower, 2003). Consistent with this, clinicians have less sympathetic attitudes and behave less empathically towards patients with borderline personality disorder (Fraser and Gallop, 1993; Markham and Trower, 2003). The term borderline is sometimes used pejoratively to describe patients (Cleary et al., 2002).

The question we raise in the present paper is whether the negative professional attitudes towards patients with borderline personality disorder might be reflected in the level of research funding on the disorder. We searched the National Institute of Health (NIH) Research Portfolio Online Portfolio Reporting Tool (RePORT) for the past 25 years and compared the number of grants funded and the total amount of funding for borderline personality disorder and bipolar disorder and tested the hypothesis that borderline personality disorder has received less funding.

## 2. Methods

The NIH RePORT website was established in response to the 2009 Memorandum on Transparency and Open Government. The NIH RePORT provides statistics, data, and information about funded grants, and allows for different types of queries. For example, it is possible to search for grants based on the name of the principal investigator, location of the awardee, type of award, or date of the award.

We focused our search on the title of grants. The search terms were "bipolar disorder" and "borderline." A search on the term "borderline personality disorder" missed some relevant grants, therefore, we used the more inclusive term and then reviewed the selected titles. We also searched on the terms "BPD," "personality disorder," "bipolar I disorder" and "bipolar II disorder." The RePORT site allows the user to identify grants funded for each year from 1990 to 2014. Both the year of grant funding and the amount of funding are listed. For each year we determined the number of new grants that were funded, the total number of grants that were funded, and the total dollar amount of funding.

## 3. Results

Across the 25 year period the yearly mean ± S.D. number of grants receiving funding was significantly higher for bipolar disorder than for borderline personality disorder (73.8 ± 49.2 vs. 10.6 ± 7.2, $t(48)=6.36$, $p<0.001$). For every year since 1990 more grants were funded for bipolar disorder than borderline personality disorder (Table 1). Focusing on newly funded grants, a similar 7-fold difference in funding favoring bipolar disorder was found across the 25 years (14.2 ± 9.3 vs. 2.0 ± 1.5, $t(48)=6.46$, $p<0.001$). Consistent with the difference in the number of grants funded, the amount of yearly funding support (in millions of dollars) was significantly greater for bipolar disorder (24.9 ± 21.3 vs. 2.2 ± 1.6, $t(48)=5.30$, $p<0.001$). Summed across all 25 years, the level of funding for bipolar disorder was more than 10 times greater than the level of funding for borderline personality disorder ($622.5 million vs. $55.7 million), and this was consistent throughout the 25 years (Fig. 1).

**Table 1**
Number of National Institute of Health grants and amount of funding for bipolar disorder and borderline personality disorder from 1990 to 2014.

| Year | Bipolar disorder | | | Borderline personality disorder | | |
|---|---|---|---|---|---|---|
| | Newly funded grants (*n*) | Total grants funded (*n*) | Total funding | Newly funded grants (*n*) | Total grants funded (*n*) | Total funding |
| 1990 | 3 | 11 | $2,004,836 | 0 | 1 | $84,568 |
| 1991 | 4 | 14 | $3,003,492 | 1 | 1 | $62,384 |
| 1992 | 9 | 25 | $4,473,105 | 2 | 3 | $284,859 |
| 1993 | 7 | 28 | $5,159,879 | 1 | 3 | $497,216 |
| 1994 | 3 | 24 | $4,118,416 | 0 | 5 | $630,408 |
| 1995 | 10 | 30 | $3,557,420 | 3 | 7 | $873,506 |
| 1996 | 7 | 40 | $6,550,568 | 1 | 5 | $710,548 |
| 1997 | 3 | 32 | $5,740,694 | 2 | 11 | $2,189,999 |
| 1998 | 15 | 41 | $10,380,573 | 0 | 6 | $1,156,326 |
| 1999 | 9 | 51 | $14,050,899 | 4 | 11 | $991,219 |
| 2000 | 13 | 59 | $20,717,834 | 2 | 10 | $1,871,688 |
| 2001 | 15 | 69 | $21,603,689 | 0 | 5 | $1,506,917 |
| 2002 | 11 | 52 | $16,666,418 | 4 | 9 | $2,879,515 |
| 2003 | 21 | 63 | $20,376,447 | 2 | 8 | $2,734,969 |
| 2004 | 17 | 98 | $27,814,937 | 5 | 17 | $3,826,255 |
| 2005 | 21 | 114 | $33,271,837 | 3 | 17 | $3,599,234 |
| 2006 | 17 | 132 | $38,421,171 | 4 | 19 | $2,939,448 |
| 2007 | 39 | 163 | $63,375,970 | 3 | 22 | $4,490,133 |
| 2008 | 27 | 144 | $56,474,671 | 2 | 25 | $4,622,208 |
| 2009 | 27 | 157 | $64,744,825 | 2 | 22 | $3,872,877 |
| 2010 | 19 | 136 | $58,943,991 | 5 | 20 | $4,555,618 |
| 2011 | 21 | 119 | $49,792,298 | 1 | 15 | $3,918,852 |
| 2012 | 25 | 116 | $45,557,268 | 2 | 11 | $4,057,320 |
| 2013 | 10 | 102 | $38,367,856 | 2 | 9 | $3,024,843 |
| 2014 | 2 | 24 | $7,361,735 | 0 | 2 | $334,986 |
| Total | 355 | 1844 | $622,530,829 | 52 | 264 | $55,715,896 |

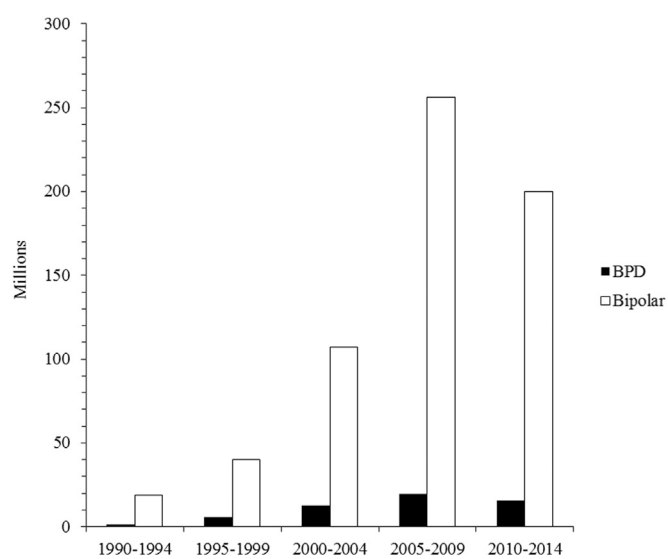


**Fig. 1.** Funding levels from the National Institute of Health for bipolar disorder and borderline personality disorder over 5-year intervals of the past 25 years (in millions of dollars).

## 4. Discussion

Similar to patients with bipolar disorder, patients with borderline personality disorder are frequently hospitalized, visit emergency rooms, are chronically unemployed, abuse substances, attempt and commit suicide. The only study directly comparing patients with the two disorders found that the level of psychosocial morbidity in depressed patients with borderline personality disorder was as great, or greater, than that found in patients with bipolar depression (Zimmerman et al., 2013). Yet, borderline personality disorder has received less than one-tenth the research funding from NIH as has bipolar disorder, and this has persisted over the past 25 years. On average only 2 new grants have been funded per year for borderline personality disorder, and in some years no new grants were funded. In contrast, in the majority of the past 25 years more than 10 new grants were funded for bipolar disorder. These findings suggest that the level of NIH research funding for borderline personality disorder is not commensurate

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