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Review

# Predominant polarity as a course specifier for bipolar disorder: A systematic review

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ABSTRACT

*Background:* Predominant polarity (PP) is a proposed course specifier for bipolar disorder, which was not incorporated in the DSM-5 as a descriptor for the nosology of bipolar disorder (BD). Here we perform a systematic review of original studies about PP.
*Methods:* A computerized search of MEDLINE/Pubmed, EMBASE and Web of Science databases from inception to October 6th, 2013 was performed with keywords, including 'bipolar disorder', 'polarity' and 'predominant polarity'.
*Results:* A total of 19 studies met inclusion criteria. A unifying definition and conceptualization for PP is lacking. A PP is found in approximately half of BD patients. Most studies that included type I BD patients found the manic PP to be more prevalent, while studies that included type II BD participants found a higher prevalence of depressive PP. The depressive PP has been consistently associated with a depressive onset of illness, a delayed diagnosis of BD, type II BD and higher rates of suicidal acts. The manic PP is associated with a younger onset of illness, a first episode manic/psychotic and a higher rate of substance abuse. Evidence suggests that PP may influence responses to acute treatment for bipolar depression. Furthermore, evidences indicate that PP should be considered for the selection of maintenance treatments for BD.
*Limitations:* There are few prospective studies on PP. There were disparate definitions for PP across studies.
*Conclusions:* The concept of PP provides relevant information for clinicians. Future studies should investigate the genetic and biological underpinnings of PP.



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## 1. Introduction

Bipolar disorder is a severe, chronic and disabling mental illness, which affects approximately 2.4% of the general population worldwide (Belmaker, 2004; Merikangas et al., 2011). The clinical course of BD is typified by recurring major depressive episodes as well as (hypo) manic and mixed episodes (Phillips and Kupfer, 2013). The seminal studies carried out by Lewis Judd and coworkers at the National Institue of Mental health (NIMH) demonstrate that BD patients spend slightly more than half their lifetime suffering from affective symptoms, mostly depressive episodes/symptoms (Judd et al., 2003b). However, since Kraepelin, BD has been regarded as an illness whose symptomatic expression and long-term clinical evolution is characterized by significant inter-individual variation (Kraepelin, 1921; Roy-Byrne et al., 1985).

In the early 1960s, Leonhard reported the course in 117 bipolar patients. Predominant manic colouring occurred in 17.9%, predominant depressive in 25.6% and equally pronounced manic and depressed in 56.4% (Leonhard, 1963). Angst followed-up (from 1959 to1975) a representative sample of 95 bipolar 'manic-depressive' inpatients (Angst, 1978). Based on this study, Angst formulated the concept of predominant polarity (Angst, 1978). Accordingly, it was observed that some patients have a 'nuclear' type of the illness (i.e., patients who show both mania and depression requiring hospital admission; type MD), while some patients have predominantly depressive (i.e., the patient required hospitalization for depression but had only hypomnia; type Dm) and manic (i.e., the patient required hospitalization for mania, but has no or minor depression; type Md) (Angst, 1978).

More recently, the literature had witnessed a renewed interest in this topic (Baldessarini et al., 2012; Colom and Vieta, 2009; Osher et al., 2000). Colom et al. (2006) suggested a threshold as at least two-thirds of lifetime major depressive episodes for the definition of a depressive predominant polarity, while at least two-thirds of past episodes fulfilling criteria for hypomania/mania defined a manic predominant polarity. Notwithstanding attempts to operationalize the concept of predominant polarity (Pacchiarotti et al., 2013; Rosa et al., 2008; Vieta et al., 2009), the definition and criteria for predominant polarity have been mixed (Baldessarini et al., 2012; Daban et al., 2006; Osher et al., 2000). Previous studies indicate that a predominant polarity can be identified in more than half of the patients (Baldessarini et al., 2012; Rosa et al., 2008). The majority of investigations suggest that a depressive predominant polarity is the most frequent type (Gonzalez-Pinto et al., 2010; Nivoli et al., 2011; Rosa et al., 2008). However, some studies, which incorporated samples of exclusively type I BD patients had found the opposite pattern (i.e., a higher prevalence of the manic predominant polarity) (Baldessarini et al., 2012; Osher et al., 2000). Clinical correlates may vary as a function of the predominant polarity subtype (i.e., depressive versus manic). For example, the depressive predominant polarity has been associated with a depressive onset of BD (Colom et al., 2006; Etain et al., 2012), higher number of suicidal attempts (Baldessarini et al., 2012; Gonzalez-Pinto et al., 2010), and a greater interval from the commencement of affective symptoms to the proper diagnosis of BD (Baldessarini et al., 2012; Rosa et al., 2008). The manic predominant polarity type has been associated with an earlier age of onset (Colom et al., 2006; Gonzalez-Pinto et al., 2010), more psychotic symptoms (Popovic et al., 2013b) and a higher number of hospitalizations (Baldessarini et al., 2012; Popovic et al., 2013b).

Accumulating evidence suggests that the concept of predominant polarity may have clinical relevance for the management of BD (Alessandra et al., 2013; Popovic et al., 2012, 2013a; Vieta et al., 2009). For instance, Popovic et al. (2012, 2013a) proposed a 'polarity index' to guide treatment choices for maintenance pharmacological and psychological treatments for BD. The polarity index (PI) represents the ratio of the number needed to treat (NNT) for the prevention of depression and the NNT for prevention of mania (Popovic et al., 2012). A naturalistic study indicated that the net polarity index of ongoing treatment for BD was consistent with the patient's predominant polarity (i.e., participants with a manic predominant polarity tended to have maintenance treatment with lower PI when compared with the ones with a depressive predominant polarity) (Popovic et al., 2013b).

A Taskforce on the nomenclature and course of BD sponsored by the International Society of Bipolar Disorders (ISBD) had concluded that the clinically derived predominant polarity construct developed by Angst and operationalized by Colom et al. (2006) is a valid course specifier for BD (Tohen et al., 2010). Nevertheless, the DSM-5 did not include 'predominant polarity' as course specifier for BD (American Psychiatric Association, 2013). Therefore, the overarching aim of this systematic review is to examine original studies which incorporated the concept 'predominant polarity' using disparate criteria to provide an evidence-based assessment of the reliability of this putative BD course descriptor. Furthermore, strengths and limitations of the available data are discussed and future research directions are presented.

## 2. Method

Original reports investigating predominant polarity in BD samples were located through searches in Pubmed/MEDLINE, EMBASE