CHAPTER 4

The bidirectional impact of perceived and enacted support on mood in bipolar outpatients: A two-year prospective study

Koenders MA, Giltay EJ, Spijker AT, Hoencamp E, Elzinga BM, Spinhoven P. The bidirectional impact of perceived and enacted support on mood in bipolar outpatients: A two-year prospective study. Comprehensive Psychiatry; 60: 59-67.

Abstract

Bipolar disorder (BD) is a chronic illness, and a great need has been expressed to elucidate factors affecting the course of the disease. Social support is one of the psychosocial factors that is assumed to play an important role in the course of BD, but it is largely unknown whether the depressive and/or manic symptoms also affect the patients' support system. Further, the perception of one's social support appears to have stronger effects on disease outcomes than one's enacted or received support, but whether this also applies to BD has not been investigated. The objective of this study is to examine temporal, bidirectional associations between mood states (depression and mania) and both enacted and perceived support in BD patients. The current study was conducted among 173 BD I and II outpatients, with overall light to mild mood symptoms. Severity of mood symptoms and social support (enacted as well as perceived) were assessed every three months, for two years (1146 data points). Multilevel regression analyses (linear mixed-models) showed that lower *perceived* support during 3 months was associated with subsequent higher levels of depressive, but not of manic symptoms in the following 3 months. Vice versa, depressive symptoms during 3 months were associated with less perceived support in the following 3 months. Further, manic symptoms during 3 months were associated with less *enacted* support in the subsequent 3 months. The current study suggests that perceived, but not enacted, support is consistently related to depressive symptoms in a bidirectional way, while mania is specifically associated with a subsequent loss of *enacted* support. Clinical implications of the current findings are discussed.

4.1 Introduction

The longitudinal course of both bipolar disorder (BD) I and II is usually chronic and often characterized by permanent minor or subclinical mood symptoms and relapse into full mood episodes (64, 137). The treatment of BD focusses on stabilizing acute mood episodes and preventing relapse when euthymia is established. To this end, pharmacotherapy has generally been the main treatment strategy, but over the last decade, the additional value of psychotherapeutic interventions in the treatment of bipolar patients has become increasingly evident (138, 139). Evidence based psychotherapies for BD are psycho-education (preferably with a significant other), family focused therapy (FFT), interpersonal social rhythm therapy (IPSRT) and cognitive behavioral therapy (CBT) (2). The majority of these therapies put substantial emphasis on the psychosocial context of the patient, since contextual factors like negative life events (31, 140) and family distress (141, 142) are consistently associated with increased relapse risks in BD. Inversely, bipolar patients with supportive relationships seem to have a more favorable course than patients that lack this support (34). Based on these findings, it seems plausible that the promotion of supportive interpersonal relationships will lead to a more favorable course of the disease. However, so far the number of studies are limited, and more specific data regarding the influence of the different kinds of support are needed. The different kinds of support can roughly be divided into *enacted* or *objective* supportive interactions on the one hand and *perceived* or *subjectively felt* social support on the other hand. Although this distinction might seem rather arbitrary, numerous studies among different non-bipolar populations, including patients with unipolar depression, consistently found that perceived support, rather than the enacted social support, affects psychiatric and general health outcomes (143-145). In these studies perceived support is generally defined as the subjective perception that support is available, adequate and sufficient, while enacted support refers to the actual received support within a specific time frame (145, 146).

Besides the fact that low levels of perceived support may lead to a more unfavorable course of the disease, it is also plausible that a persons' mood symptoms might affect the available support or the way support is perceived (147).

For example, people with depressed symptoms also tend to generate more strain in their relationships and thereby weaken their social support system (49, 110). To our knowledge, only Eidelman et al. (148) investigated bidirectional effects of social interactions in a bipolar sample over two time points with a relative short follow-up time (28-days). They found that both manic and depressed symptoms were related to more subsequent social strain. No evidence was found for associations in the opposite direction (social strain predicting mood changes), nor for associations between social support and mood symptoms.

In sum, there might be specific and bidirectional associations between perceived and enacted social support and the bipolar mood course, although this has not been studied in BD samples specifically. In order to improve the effectiveness of psychosocial interventions for bipolar patients, a better understanding is needed of the associations between social support and mood and potential differential effects of perceived and enacted support. The current prospective study is thus the first to investigate the lagged effects of social support (perceived as well as enacted) on mood state and vice versa in a large sample of patients with bipolar disorder.

4.2 Method

4.2.1 Participants

This is a 2-year prospective study among 173 bipolar I and II outpatients of the Outpatient Clinic for Mood Disorders in The Hague (The Netherlands). All patients were treated in accordance to the contemporary guidelines for bipolar disorder. Patients were invited to participate in the study either by letter or by their treating physician. After written informed consent was obtained, 173 patients were willing to participate and enrolled into the study and completed at least 2 consecutive waves. Participants were older than 18 years and exclusion criteria in this study were schizo-affective disorder, neurological disease and substance abuse disorders.

Diagnoses of BD were based on DSM-IV criteria and were assessed by trained research assistants, with a standardized diagnostic interview (119) using the

Dutch version of the MINI International Neuropsychiatric Interview Plus (version 5.00-R; MINI-PLUS). DSM-IV axis II comorbidity was not assessed. The Questionnaire for Bipolar Illness, Dutch translation (23, 121) was used to specify subtypes of BD and detailed information about disease characteristics (e.g. age of onset, number of previous episodes).

Figure 4.1 shows the flow-chart of the participation rate of the patients at the different time points. In total there were 1146 data points with complete data during 24 months of follow-up. Of the total sample, 83.8% of the patients (N=145) completed at least 1 year follow-up, with a cumulative number of 50 (28,9%) patients dropping out before the end of the study. There were no significant differences in baseline demographic and clinical characteristics between the group who participated until the end of the study (N=123) and the group that dropped out during the study (N=50). Moreover, during the study no differences in course severity were found among these two groups, and the number of hospital admissions was the same in both completers and dropouts, during the study as well as in the first 3 months after dropping out (based on file study).

4.2.2 Procedure

After completing the baseline assessment, patients had face-to-face contacts with trained research assistants at 3-, 6-, 9-, 12-, 15-, 18-, 21-, and 24- months follow-up. During these contacts, mood based functional impairment (Life Chart), medication use and social support were assessed (see Figure 4.1). The study protocol was approved by the local Ethical Committee, and was carried out in accordance with the Declaration of Helsinki.

4.2.3 Social Support List

The Social Support List (SSL) (149) was used to assess social support every 3-months during the 2 year study. The SSL is a commonly used scale (150-152) to assess different domains of social support. The test-retest reliability and convergent validity yield satisfactory indexes (149, 153). This 41-item list is developed in the Netherlands and distinguishes three separate dimensions: Enacted social support, perceived social support and negative interactions.

The negative interactions dimension is beyond the scope of the current study and therefore not included.

(i) Enacted social support

This subscale reflects the enacted amount of supportive interactions a person experiences. This part of the questionnaire starts with the question 'Does it ever happens that someone….', followed by 34 statements such as: 'calls you for a chat', 'visits you', 'cheers you up', 'asks you for help', etc. These items have a 4-point Likert scale: (1) 'rarely/never', (2) 'sometimes', (3) 'often', (4) 'very often'. The total score on this subscale ranges from 34 through 136 with higher scores reflecting more enacted social support. The Cronbach's alpha in the current sample of this enacted social support subscale was .83.

(ii) Perceived social support

This subscale reflects the discrepancy between the above mentioned amount of enacted social support interactions and the desired amount of social support. It contains the same 34 items that are stated in the enacted social support subscale, but with different response categories: (1) I miss it; (2) I don't really miss it, but I prefer more; (3) exactly the right amount; (4) it happens too often. The items scores of this domain as described in the manual of the SSL (149) (recoded as: 1=3, 2=2; 3=0) are summed, in order to create a score that reflects the perceived social support. The category 'it happens too often' was not included, since this reflects over involvement instead of support. The total scores on this domain ranges from 0 to 102, but were subsequently inverted in order to let higher scores reflect more perceived social support. Cronbach's alpha of this subscale in the current sample was .98.

4.2.4 Symptoms severity, functional impairment and medication use

Illness severity was assessed both in terms of symptoms severity and the functional impact of the mood disturbances. In order to assess mood severity based on number and severity of symptoms the Quick Inventory of Depressive Symptomatology-Self Report (QIDS-SR) (123) and the observer based Young Mania Rating Scale (YMRS) (60) were administered every 6 months. Both the QIDS and the YMRS have good (inter-) reliability and validity (60, 123). The functional impact of mood disturbance was assessed by the NIMH

monthly retrospective life chart method (LCM-r) (21, 124). This tool was used at every session, up to eight assessment sessions, to measure medication use and monthly functional impairment arising from manic or depressed symptoms of the previous 3 months. LCM-r rating distinguishes four levels of severity for both mania and depression: mild, moderately low, moderately high, and severe (85). Based on the LCM-r data, mean severity of functional impairment of depression and mania of every three-month period was calculated by averaging the monthly severity scores. A similar method has been used in previous studies (62, 67).

Medication use over the 24-months was assessed at all 8 time points with the life chart. Medication use was categorized into 5 dichotomous (use/no use) variables and included the categories lithium, anti-epileptics, antipsychotic medication, benzodiazepines, and antidepressants.

4.2.5 Statistical analyses

All analyses were performed using IBM SPSS for Windows (version 21.0; SPSS, Inc. Armonk, NY). Since we perform multiple tests, we considered results as significant findings when p-values were below .01.

Fluctuation of social support over time was estimated, using intra-class correlation analyses (ICC) for absolute agreement with a two-way random effect model for single measures.

Because of nested data (repeated measurements within an individual) and attrition resulting in missing data, multilevel regression analyses (linear mixed-models) were used to analyze the longitudinal associations between social support and mood state. A compound symmetry covariance structure was used consisting of the time points (i.e. lower level) and the patients (i.e. higher level). Mood scores on the QIDS, YMRS and life chart were right-skewed and therefore log-transformed before the analyses. Baseline associations between sociodemographic variables and social support were analyzed using univariate regression analyses.

The directions of the prospective associations tested by the mixed model analyses are depicted by the arrows in Figure 4.1. In order to investigate both temporal associations multilevel analyses were employed as follows:

1. Social support variables of the last three months were the predictor variables and mood/functional impairment assessed at the subsequent time point were the outcome variables (see blue arrows [1] in Figure 4.1). Associations were first assessed in a crude model (adjusting for time and mood state and functional impairment at the predictor time point) and subsequently additionally adjusted in a second model (adjusting for age, sex, level of education, and medication use (using 5 dichotomous variables, measured at 8 time points)).

2. The opposite temporal direction was assessed with mood state and functional impairment as predictor variables and subsequent reported social support variables as outcome variables (red arrows [2] in Figure 4.1). In the crude model, we adjusted for social support at the predictor time point, and in the adjusted model we additionally adjusted for age, sex, level of education, and medication use.

For all analyses we adjusted for the outcome variable at the predictor time point in order to adjust for the cross-sectional correlation between mood and social support and to prevent actually measuring an association between mood and subsequent mood or social support and subsequent social support.

The same method has been used before by our own group (140) and in other studies (154) for investigating bidirectional associations in a longitudinal sample with a within-subject repeated measures design. Moreover, a multilevel approach is suggested to be a suitable method to analyze complex reciprocal associations in prospective studies (155, 156).

4.3 Results

4.3.1 Demographics and clinical characteristics

Basic demographic and clinical characteristics of all patients who participated in at least one follow-up measurement (N=173) are summarized in Table 4.1. The included subjects had a mean age of 49.9 (SD=11.4) years and were predominantly female (58%). Overall, mean score on the QIDS at study

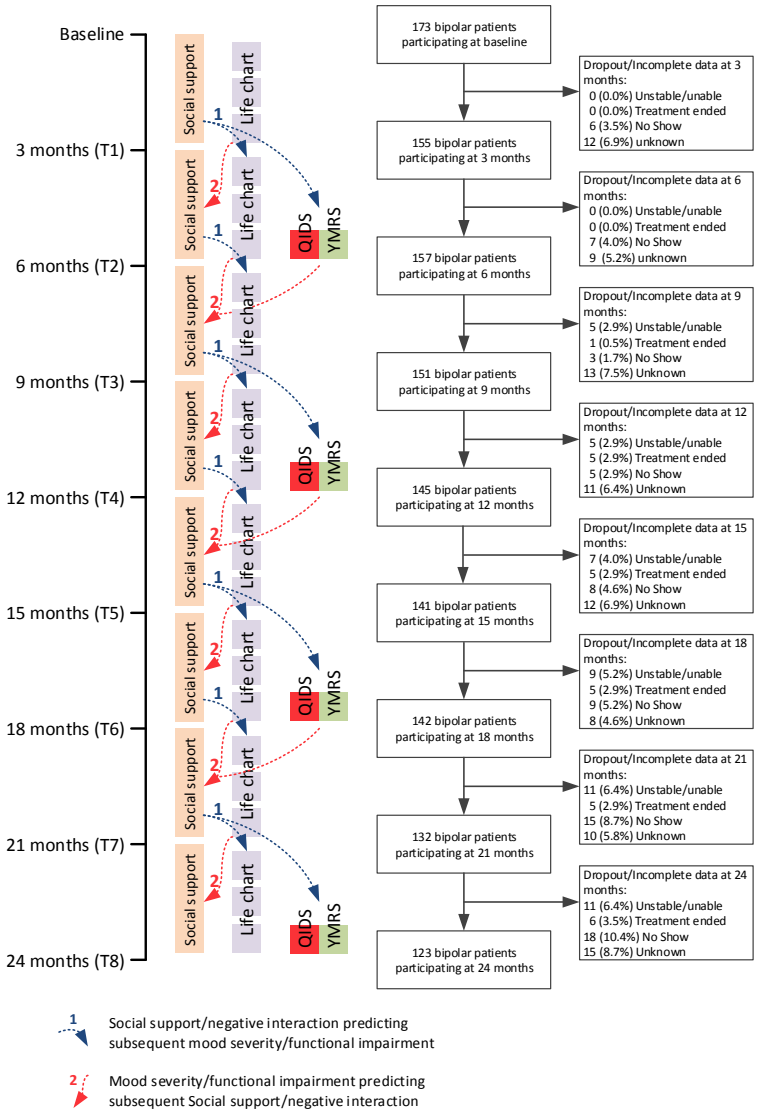

Figure 4.1 | Flow chart of follow-up measurements, direction of associations and drop-out rates/incomplete data.

entry was 7.5 (SD=4.9). During follow up QIDS mean scores varied between 6.5 and 7.5 (SD varied between 4.7 and 5.2) indicating overall mild depressive symptoms. Mean YMRS score at baseline was 1.7 (SD=3.1). During follow YMRS mean scores varied between 1.5 and 2.5 (SD varied between 3.7 and 5.0) indicating overall subclinical or low severity of mania symptoms. During the two year prospective study, patients reported life chart functional impairments due to depressed mood in 32.7% of the time points, and manic mood in 12.2% of the time points, whereas they reported a stable mood in 57.1% of the time points.

The associations between the variables in Table 4.1 and the social support variables were analyzed using regression analyses (data not shown). Older age was significantly associated with less enacted social support ($p<.001$). None of the other demographic and disease characteristics shown in Table 4.1 were significantly associated with any of the social support variables at baseline.

4.3.2 Social support variables over time

Means of reported perceived and enacted social support at baseline are presented in Table 4.1. Fluctuation of social support over time was estimated. ICCs of perceived social support between different time points varied between 0.67 and 0.85, for enacted social support ICCs varied between .57 and .82. The overall mean ICC (for 127 patients with complete data on all time points) for enacted social support is .73 and for perceived social support .77. This indicates moderate to high stability over time for both enacted and perceived social support over two years.

Subsequently, correlations between enacted and perceived support were investigated. Correlation between the two support constructs varied from .287 to .454 over the 8 time points. This indicates that enacted and perceived support were only weakly correlated in the current sample.

Baseline	
Male sex; n(%)	73 (42.2)
Mean age; mean (SD)	49.9 (11.4)
Level of education; N (%):	
- primary (ref.)	39 (22.5)
- secondary	50 (28.9)
- higher	82 (47.4)
Clinical characteristics:	
Diagnostic information; N(%)	
BD1	121 (69.9)
Age of onset; mean (SD)	
Age of onset first (hypo-) mania	30.8 (10.1)
Age of onset first depression	27.6 (10.1)
Number of episodes; median (IQR)	
No. of manic episodes	5 (8)
No. of depressive episodes	6 (16)
QIDS baseline; mean(SD)	7.5 (4.9)
YMRS baseline; mean (SD)	1.7 (3.1)
Medication use; N(%)	
Lithium	119 (68.8)
Anti-epileptics	36 (20.8)
Anti-psychotics	42 (24.3)
Benzodiazepines	42 (24.3)
Antidepressants	56 (32.4)
Social support baseline; mean (SD)	
Enacted social support	70.4 (12.9)
Perceived social support	- 28.1 (25.3)

Table 4.1 | Baseline characteristics of 173 bipolar patients.

4.3.3 Association between enacted and perceived social support and subsequent mood/functional impairment

Results from the mixed model analyses on the association between perceived and enacted social support and subsequent functional impairment and mood symptoms, adjusted for mood symptoms/functional impairment at the predictor time point. Direction of these associations are also depicted by arrows [1] in Figure 4.1 and results are summarized in Table 4.2 and Figure 4.2. Results show that lower perceived support was associated with more depression

related functional impairment on the LCM during the subsequent 3 months (β=-.16, p=<.001). Similarly, lower perceived social support was associated with more depressive symptomatology at the subsequent time point (β=-.14, p=.001). After additionally adjusting for demographic variables and medication use (model 2) results remained significant. Enacted social support in the last three months was not significantly associated with subsequent depressed mood symptoms or functional impairment. Further, no significant associations between (enacted and perceived) social support and manic symptoms and impairment were observed.

Analyses were also performed for BD I and II groups separately, but no differences in associations were observed (data not shown).

	Life Chart Depression		QIDS		Life Chart Mania		YMRS	
	Beta (SE)	P-value	Beta (SE)	P-value	Beta (SE)	P-value	Beta (SE)	P-value
Model 1 Enacted SS	-.05 (.04)	.178	-.06 (.04)	.114	.03 (.03)	.397	.08 (.05)	.112
Model 2 Enacted SS	-.06 (.04)	.105	-.09 (.04)	.044	.02 (.04)	.657	.07 (.06)	.225
Model 1 Perceived lack SS	-.16 (.04)	<.001*	-.14 (.04)	.001*	-.05 (.04)	.156	.03 (.05)	.539
Model 2 Perceived lack SS	-.14 (.03)	<.001*	-.14 (.04)	.002*	-.06 (.04)	.112	.04 (.05)	.490

Model 1: adjusted for time and mood using multilevel regression analysis (i.e. mixed models).
Model 2: additionally adjusted for gender, age, level of education, and medication use (antipsychotic, antidepressants, benzodiazepines, lithium, and anticonvulsive agents) using multilevel regression analysis (i.e. mixed models).
* p-value < .05

Table 4.2 | Association between enacted and perceived social support and subsequent mood symptoms/functional impairment.

4.3.4 Association between mood symptoms/functional impairment and social support in the subsequent 3 months

Subsequently we investigated the opposite temporal association, that is the association between mood state/functional impairment and subsequent social support in the following 3 months, adjusted for social support at the predictor time point. Direction of these associations are also depicted by arrows [2] in Figure 4.1. Table 4.3 summarizes the results of the mixed model analyses of these associations. Patients with more depression related functional impairment reported less perceived social support in the subsequent

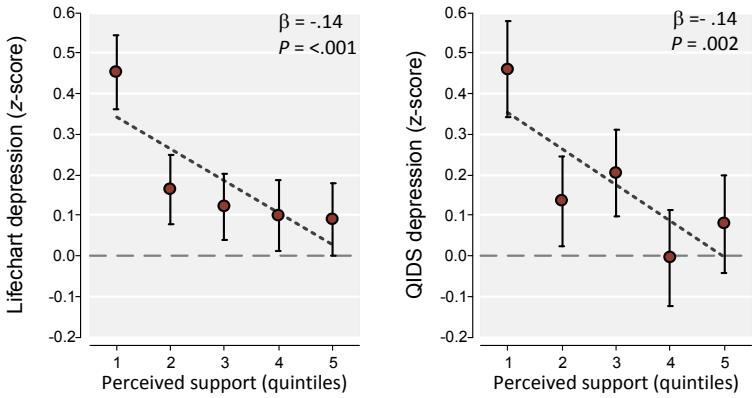

Figure 4.2 | Plots of the association between perceived social support and the standardized scores of mood severity and functional impairment (QIDS/YMRS/Life Chart). Vertical lines indicate standard errors. Data are adjusted means by linear mixed models.

three months (β=-.04, p=.002), while enacted social support was not significantly affected (β=-.04, p=.227). Finally more manic symptoms were related to less enacted social support in the subsequent months (β=-.09, p=.006).

Analyses were also performed for BD I and II groups separately, but no differences in associations were observed (data not shown).

4.4 Discussion

Our findings show that lower amounts of *perceived* support subsequently increase depressive symptoms and impairment. In turn, depression related impairment precede a decrease in the perception of social support, while manic symptoms lead to a decrease in enacted social support. These associations suggest that bipolar mood symptoms and social support reciprocally reinforce each other. Further, especially *perceived* support seems to be associated with the depressive mood course while *enacted* support appears to be of minor importance in terms of predicting subsequent mood changes. Further, in accordance with previous meta-analytic findings (157) we found that perceived and enacted support were only weakly correlated. Although described before, this is still an important finding that demonstrates that the

	Enacted SS		Perceived SS	
	Beta (SE)	P-value	Beta (SE)	P-value
Life Chart Depression				
Model 1	-.01(.02)	.806	-.04 (.01)	.002*
Model 2	-.03 (.02)	.227	-.05 (.02)	.005*
QIDS				
Model 1	-.04 (.03)	.195	-.01 (.03)	.890
Model 2	-.04 (.03)	.221	-.01 (.03)	.719
Life Chart Mania				
Model 1	-.02 (.02)	.179	-.01 (.01)	.721
Model 2	-.04 (.02)	.207	-.01 (.01)	.885
YMRS				
Model 1	-.08 (.03)	.014*	-.01 (.03)	.616
Model 2	-.09 (.03)	.006*	-.03 (.03)	.328

Model 1: adjusted for time and social support using multilevel regression analysis (i.e. mixed models).

Model 2: additionally adjusted for gender, age, level of education, and medication use (antipsychotic, antidepressants, benzodiazepines, lithium, and anticonvulsive agents) using multilevel regression analysis (i.e. mixed models).

* p-value < . 05

Table 4.3 | Association between mood symptoms/functional impairment and subsequent enacted and perceived social support.

two variables should be considered differential constructs of social support.

4.4.1 Perceived social support and the bipolar mood course

Although a specific association of perceived support with subsequent health outcome has been consistently reported within other study populations (e.g. cardiac patients, depressed patients, schizophrenia patients, first responders) (143, 158-161) the current study is the first to show that this also applies to bipolar patients. The underlying mechanisms that account for the specific role of perceived support are not entirely clear. Obviously, the subjective experience that support is sufficiently available appears to be more important than the enacted amount of supportive interactions one experiences (144, 160). The assumption that subjective experiences and beliefs are more important in psychological well-being than the objective situation is widespread in the field of cognitive behavioral therapy (162, 163). It is likely that comparable mechanisms account for the importance of perceived support over enacted support. Further, we found that low levels of perceived support not

only preceded increases in depressive symptoms and impairment, but also the opposite association was found in which increases in depressive impairment in the previous months led to reports of lower perceived support in the following months. However, these associations were less consistent (no association with depressive symptoms, only with impairment) and less strong than association of the opposite direction. Still, these findings indicate that low perceptions of support put bipolar patients at risk for subsequent depressive symptoms, but that previous depressed symptoms also erode perceptions of support. That mood state affects the way people perceive the intensity and quality of social interactions is a known phenomenon (147). Another explanation for the bidirectional associations between mood and support might be that low perceived social support and depressive symptoms share the same underlying trait, that accounts for both increases in depressive symptoms and decreases in perceived support (e.g. personality, attachment style). Altogether, the current findings underline the significant role of perceived support in the bipolar mood course, and the complexity of the association of perceived support and mood.

4.4.2 Specific association for mania and depression

Results show that there is a bidirectional association between perceived support and depressed symptoms, but no association with manic symptoms. The polarity specific association between perceived support and depression in BD has been found in previous studies (33, 164, 165). An explanation for the bidirectional associations between perceived support and depressed symptomatology specifically might be found in the fact that low perceived support is linked to negative early life experiences, dysfunctional personality traits and low self-esteem (145). All these factors are especially associated with an increased risk of depression (166, 167). Besides, depressive mood states may also result in polarized thinking, catastrophizing, blaming and mislabelling, which may alter support perception. In line with this, Johnson et al. (168) demonstrated that self-esteem is an important moderating variable between low support and subsequent depressive symptoms in BD patients.

Further, we found that manic symptoms (but not manic impairment) in the

previous months were specifically associated with decreases in enacted support in the subsequent months. The previously mentioned study by Eidelman (148) already revealed that manic symptomatology is associated with more subsequent interpersonal strain. It is plausible that the often disturbing manic behaviour leads to more interpersonal conflict and therefore to a decrease in enacted support of significant others. Furthermore, manic symptomatology and impairment were not at all associated with perceptions of support in the current study, implying that low perceptions of support are exclusively related to depressive symptomatology.

4.4.3 Clinical implications

The currently revealed role of perceived support implicates that it might be an important target for psychosocial interventions in BD. This is supported by a recent study among unipolar depressed and anxious patients (169), that found that perceived support had a mediating role in symptom change after treatment interventions. In the current psychotherapeutic interventions that focus on the social network of patients, perceptions of support are not a central theme. Both the Interpersonal Social Rhythm Therapy (IPSRT) and Family Focussed Therapy (FFT) attempt to diminish interpersonal problems and increase support. However, improving perceived support is not accomplished by increasing the amount of enacted support (144). The perception of social support heavily depends on psychological factors such as personality, attachment styles, and the perceptions of others (170-172). In this light, interventions that aim to correct cognitive biases or dysfunctional schemata may be effective in altering support perceptions (173, 174). This means that (techniques from) psychotherapies such as cognitive behavioural therapy or schema therapy might be useful to change support perceptions and possibly decrease depressive symptomatology. Future interventions studies should shed more light on the exact importance of perceived support as a target for psychotherapeutic interventions in BD.

Furthermore, the reduction of enacted support after the occurrence of manic symptoms might very well be a result of the often detrimental effects that manic behavior can have on the environment. Psychoeducation programmes that inform significant others about the manic state might increase under-

standing and lead to the realization that the manic person cannot be (fully) blamed for the displayed behavior. Further, when severely disturbed, FFT might be useful to restore these relationships.

4.4.4 Strengths and limitations

Some strengths and limitations of the current study are worthy of note. This study is one of the first to repeatedly measure social support in a large sample of BD patients. This study was also novel in investigating both temporal directions between social support and mood symptoms in the same sample, and in distinguishing between perceived and enacted support. The large sample size and repeated measurements led to a higher precision of the effects estimates. Further, current findings rely on rather rigorous statistical analyses, in which we consistently adjusted the outcome variable for the predictor time-point in order to accurately measure changes within the time frames of 3 to 6 months.

There are also several limitations that need to be discussed. First, although the use of self-report inventories in social support research is appropriate for the assessment of perceived support, for the assessment of enacted social support a method that more objectively assesses enacted support (e.g. prospective scoring of supportive interactions) might be more appropriate. Second, the results can only be generalized to relatively stable patients or patients with subclinical symptoms, as the number of time points that patients were severely depressed or manic was very low. As a result, the strength of the presented associations may underestimate those for patients with more severe psychopathology, especially for those with more severe manic symptomatology. Third, although 3-months measurements are rather frequent in prospective bipolar studies, this frequency does not allow for the detection of subtle mood changes or of every minor episode. Fourth, personality traits and/or disorders were not assessed in the current study, whereas these are important factors in both the recurrence of depressive symptoms (175) and in the perceptions of support (176). Finally, no data was collected on psychosocial interventions during the course of the study, while this is likely to be a factor that accounts for changes over time in both mood and social support.

4.4.5 Conclusions

The current findings reveal that low perceived quality of support might have stronger negative effects on the bipolar mood course than lower amounts of *enacted* support. Further, perceived support is especially related to depressive symptoms in a bidirectional way, while mania is specifically associated with a subsequent loss of enacted support. This indicate that social support variables and bipolar mood are strongly intertwined, indicating a vicious circle in which cause and effect are difficult to disentangle. Still, the current findings suggest that perceived support might be an additional target within the existing psychosocial and psychotherapeutic interventions for patients with a bipolar disorder.