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ORIGINAL PAPER

The influence of social support on psychological distress in Canadian adults with bipolar disorder

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Abstract

Introduction Individuals with bipolar I disorder (BD-I) and bipolar II disorder (BD-II) are at higher risk for experiencing high levels of psychological distress and low levels of social support.

Objectives The primary objectives of this study were to examine perceived social support and psychological distress among Canadian adults with self-reported BD-I or BD-II as diagnosed by a health professional and explore the relationship between types of social support and psychological distress within this sample.

Methods Using a cross-sectional, national datafile, 563 Canadian male and female adults (20–64 years) who reported being diagnosed with BD-I or BD-II were investigated using the Social Provisions Scale (SPS), and the Kessler Psychological Distress Scale (K10).

Results It was observed that while the BD-I or BD-II sample had significantly lower SPS scores and significantly higher K10 scores than the overall Canadian sample, age and support in the form of reassurance of worth and social integration were associated with decreased psychological distress. Further, a diagnosis of BD-I and BD-II was found to moderate the effect of social support on psychological distress.

Conclusions Despite the limitations, which include self-reported diagnosis of BD-I and BD-II and potential exclusion of those who are not diagnosed but have BD-I or BD-II, these findings suggest that reassurance of worth and social integration may act as protective factors for psychological distress among individuals with BD-I or BD-II.

Keywords Bipolar disorder · Social support · Psychological distress

Introduction

Individuals with bipolar I (BD-I) and bipolar II (BD-II) experience high levels of psychological distress [1, 2], characterized as a global distress involving unpleasant emotions such as depression and anxiety [3]. High psychological distress may be used to measure the presence of mental illness [3] and can significantly impact the level of functioning of individuals. For example, Caron and Liu [4] found high psychological distress to be associated with low income [4], while Oakley Browne, Wells, Scott, and McGee [5] reported it to be associated with low income, low education, and living in areas with poor conditions [5]. Consequently, individuals with bipolar disorder stand to experience negative impacts from both the disorder itself as well as symptoms such as psychological distress.

Previous research has also documented the influence of social support on individuals with BD-I and BD-II [6–8]. For example, Stefos et al. [8] found that individuals who reported low social support from their five closest social networks were more likely to report recurring episodes of depression and mania at a 4-year follow-up after treatment compared to individuals with high social support [8]. Similarly, Cohen et al. [7] found that lower levels of social support predicted the recurrence of depressive episodes after a 1-year follow-up [7]. Moreover, they found that more perceived social support from parents, best friends, and spouses was associated with having fewer episodes and hospitalizations [7]. Furthermore, Johnson et al. [6] reported that individuals with BD-I and BD-II who had low social support, in the form of tangible assistance, appraisal, self-esteem

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support, and belonging, took longer to recover from episodes and had more symptoms during a 6-month follow-up; however, this was only true for episodes of depression and not mania [6]. Therefore, it seems that social support is related to the recurrence and severity of manic and depressive episodes among individuals with BD-I and BD-II.

Not only do individuals with BD-I and BD-II experience negative effects from low social support, it has also been found that they generally receive lower levels of social support [9, 10]. For example, individuals with bipolar disorder were less likely than individuals without bipolar disorder to have intimate relationships with others in which they felt close with and were able to be open and honest with [9]. Individuals with bipolar disorder were also more likely to have trouble with diffuse interactions such as causal conversations, and borrowing items from others [9]. Similarly, Sierra et al. found that individuals with BD-I and BD-II reported lower social functioning which contributed to lower quality of life compared to healthy individuals [10].

Possible reasons for why individuals with bipolar disorder receive less support compared to non-bipolar individuals have been investigated [11, 12]. One study, for instance, found that individuals with bipolar disorder reported low levels of contentment, happiness, love, awe, and compassion which the authors suggest may be because of the aggressive and compulsive behaviour that often accompany the disorder [11]. These behaviours can act as a barrier for family and friends, resulting in loss of contact [11]. Furthermore, it has been found that bipolar disorder is stigmatized and the stigma of the disorder can cause family and friends to cease contact [12]. Whatever the cause, it is concerning that a population that seemingly benefits from social support receives less than the general population.

To date, very little is known regarding the effects of social support on psychological distress in Canadian adults with BD-I or BD-II. Further, even less is known about whether specific *types* of social support might be deficient in those with BP-I and II, and/or potentially health enhancing in terms of predicting lower psychological distress. Given that stigma might serve as a potential barrier to social support [12, 13], investigations into the level of social support *types* within the context of BP-I and II might provide a clue in terms of factors that could serve to dissolve stigma and hence reduce barriers to social support and associated psychological distress.

Accordingly, the aims of the current study were to examine the levels of perceived social support (overall and associated subcategories), and psychological distress among Canadian adults with self-reported BD-I and BD-II disorder aged 20–64 years, and identify the impact of social support types on psychological distress of adults with BD-I and BD-II. While it was hypothesized that people with BD-I or BD-II will have lower levels of social support (overall) and higher levels of psychological distress than the general population, the particular social support *types* that might be deficient, and/or predictive of psychological distress were rather tenuous. However, based on the previous studies that have explored depressive symptoms and social support types [14, 15], 'social integration' seems a likely influential component of social support. Finally, it was hypothesized that bipolar disorder would have a moderating effect on the relationship between social support and psychological distress. It is important to know the effects of BD-I and BD-II, as well as the level of support associated with higher functionality in those with the disorder, in order to continually develop and improve effective treatment plans and programs.

In addition to the theoretical queries of this study, it also intends to address potential generalizability issues. That is, while studies into bipolar depression are extensive, many tend to involve samples recruited from clinical treatment programs [e.g., 8–10]. However, the population sample featured in the present study includes those reporting bipolar disorder who may not have received treatment (and, therefore, were excluded from sampling frames of previous research), or have declined participation in studies publicized from clinical environments. Consequently, the current investigation addresses this by utilizing a large, nationally representative Canadian adult health survey.

Methods

Participants

Data from the Public Use Microdata File of the Canadian Community Health Survey—Mental Health (CCHS-MH) 2012 [16] were analyzed. The CCHS-MH is a national mental health survey designed to assess mental health status, functioning, and access to and utilization of formal and informal mental health services and supports in Canadians, as well as to examine links between mental health and sociodemographic variables.

The CCHS-MH interviewed individuals aged 15 years and older that were residing in private residences within the 10 provinces of Canada. Sampling was done in three stages: first, geographical areas called clusters were selected; second, households were selected within each cluster; and finally, one respondent per household was randomly selected. The national response rate for the survey was 68.9% resulting in data from 25,113 Canadians. The survey excluded: individuals living in the three Canadian territories, individuals living on reserves and other Aboriginal settlements, members of the Canadian Forces, and individuals who are institutionalized. This exclusion was estimated to represent less than 3% of the population [16]. Age was represented categorically in 5-year increments and ranged

from "15–19 years" to "80 years or older". The present study included adults aged 20–64 years. From this sample, 563 Canadians reported having lifetime BD-I or BD-II and they were compared to the entire sample who did not report having lifetime BD-I or BD-II.

Data collection

Data were collected from January 1, 2012 to December 31, 2012. The majority of interviews were done in person using the Computer-Assisted Personal Interviewing method (CAPI) that allowed for custom interviews which only asked questions that were based on the characteristics and responses of the individual. Most of the interviews (87%) were done in person while the remainder were done on the phone. Responding to the survey was voluntary and no proxy interviews were permitted. The interviews were conducted by lay people that were trained by representatives from Statistics Canada's Collection Planning and Management Division [16].

Materials

Self-report of bipolar disorder

As part of the CCHS interview, participants were asked whether they had been diagnosed by a health professional with a variety of mental health conditions that had lasted or were expected to last more than 6 months. For self-reported bipolar disorder, participants were asked, "Do you have a mood disorder such as depression, bipolar disorder, mania or dysthymia?" People who answered "yes" were then asked what disorder they were diagnosed with and more than one response was permitted.

Assessment of bipolar I and II disorder: lifetime prevalence

Participants filled out a section with screener questions that proceeded the survey modules for depression and mania. Therefore, if the participants responded with a "no" to the screening questions, then they were not asked to fill out questions from the module associated with that disorder and, therefore, did not meet the criteria for that disorder. The questions used for the CCHS-MH modules on BD-I and BD-II disorders are based on a recognized World Health Organization version of the Composite International Diagnostic Interview (WHO-CIDI) modified for the needs of CCHS-MH [23]. The WHO-CIDI is a standardized instrument for the assessment of mental disorders and conditions based on the definitions and criteria of Diagnostic and Statistical Manual of Mental Disorders [17] and International Classification of Diseases and Related Health Problems [18]. Computer-based algorithms were used to calculate lifetime criteria for each disorder based on participants' responses. Furthermore, the disorders had to interfere with impairment in occupational and social functioning.

CIDI classification of BD-I and BD-II

McDonald et al. [19] listed the criteria for a diagnosis of BD-I and BD-II disorder [19]. Participants were classified as having BD-I if they had ever experienced: at least six symptoms of mania; and at least two super-symptoms which include being exceedingly friendly, acting erroneously, getting involved with things that lack good judgement, managing money poorly, and thinking they are a different person or connected to a famous person. Participants were classified as having BD-II if they had ever experienced: elevated mood lasting a week or longer, at least three symptoms of mania, euphoria, or racing thoughts, and marked impairment in social or occupational functioning; at least one lifetime major depressive episode; and did not meet the criteria for lifetime manic episode.

The Kessler psychological distress scale (K10)

The K10 was used to measure psychological distress in the participants [11]. The questions on this scale assess mood and anxiety in the past month. It includes 10 questions. For example, one of the questions on the K10 is as follows: "During the past month, how often did you feel worthless?" On the K10, participants rate each question on a scale of 0 (to indicate "none of the time") to 4 (to indicate "all of the time"). The scores from the 10 questions are summed to create a total score. Final scores can range from 0 to 40. Low scores indicate low levels of psychological distress and high scores indicate high levels of psychological distress. Cronbach's alpha for the K10 is 0.93, indicating high internal consistency [20].

The Social provisions scale (SPS)

The SPS was used to measure social support in the participants [21]. The SPS assesses current relationships with friends, family members, co-workers, community members, etc. The scale consists of ten questions that ask about the closeness of individuals' relationships with others, such as if they have one close bond, or if they have someone they can count on in an emergency. On the SPS, participants rate each question on a scale of 1 (to indicate that they strongly agree) to 4 (to indicate that they strongly disagree). The scores from the questions are summed to create an overall score of social support as well as a score for five types of social support. The types of support that are measured include: guidance, which measures the degree to which participants have connections to people that can give them advice or information;

reliable alliance, which measures the degree to which participants feel they could rely on others during stressful times; reassurance of worth, which measures the degree to which participants feel that their competence is recognized by others; attachment, which measures the degree to which participants feel emotional closeness with others; and social integration, which measures the degree to which participants feel a sense of belonging to a group. Scales were reversed coded so that higher scores indicate higher social support whereas lower scores indicate lower social support [16].

Statistical analysis

One-sample *t* tests were used to compare the SPS score means and the subtypes of SPS score means between participants with self-reported BD-I or BD-II and the overall CCHS sample. Similar, a one-sample *t* test was used to compare the K10 score means between participants with BD-I or BD-II and the overall CCHS sample. Furthermore, a backwards stepwise-linear regression was conducted to examine the influence of social support and age on psychological distress in adults who self-report a diagnosis of BD-I or BD-II. Finally, it was determined if a diagnosis of bipolar disorder moderated the effect of social support on psychological distress.

Results

A one-sample *t* tests showed that the difference in overall SPS score between the sample of adults with BD-I or BD-II ($n = 552$, $M = 33.37$, SD = 5.846) and the overall sample ($n = 15{,}962$, $M = 36.12$, SD = 4.330) was statistically significant, $t(551) = -11.069$, $p < 0.001$. The effect size ($d = 0.535$) indicates a moderate effect. These results are shown in Table 1. Furthermore, a series of one sample *t* tests revealed that the difference in each type of support between the sample of adults with BD-I or BD-II and the overall sample was statistically significant, with the sample being significantly lower in each case. Specifically, adults with BD-I or BD-II were significantly lower in attachment ($n = 559$, $M = 6.77$, SD = 1.332 vs. $n = 16{,}226$, $M = 7.27$, SD = 0.995), $t(558) = -8.922$, $p < 0.001$; guidance ($n = 563$, $M = 6.84$, SD = 1.383 vs. $n = 16{,}239$, $M = 7.33$, SD = 1.0), $t(560) = -8.397$, $p < 0.001$; reliable alliance ($n = 561$, $M = 6.90$, SD = 1.271 vs. $n = 16{,}254$, $M = 7.38$, SD = 0.919), $t(560) = -8.943$, $p < 0.001$; social integration ($n = 557$, $M = 6.32$, SD = 1.418 vs. $n = 16{,}180$, $M = 7.02$, SD = 1.089), $t(556) = -11.630$, $p < 0.001$; and reassurance of worth ($n = 556$, $M = 6.52$, SD = 1.333 vs. $n = 16{,}065$, $M = 7.04$, SD = 1.011), $t(555) = -9.263$, $p < 0.001$. The effect sizes for the subtypes of support ranged from small/moderate ($d = 0.406$) to moderate ($d = 0.554$). Results for the subtypes of support can also be seen in Table 1.

Table 1 Means for social support, subtypes of support, and psychological distress for bipolar and non-bipolar individuals

Variable	BD-I/BD-II ($n = 563$)		CCHS sample ($n = 16{,}238$)		Sig.
	M	SD	*M*	SD	
Social support	33.37	5.85	36.12	4.33	***
Attachment	6.77	1.33	7.27	1.00	***
Guidance	6.84	1.38	7.33	1.00	***
Reliable alliance	6.90	1.27	7.38	0.92	***
Social integration	6.32	1.42	7.02	1.09	***
Reassurance of worth	6.52	1.33	7.04	1.01	***
Psychological distress	13.97	7.99	5.47	5.47	***

***$p < 0.001$

In terms of distress, a one-sample *t* test revealed that K10 scores associated with the sample of adults with BD-I or BD-II ($n = 561$, $M = 13.97$, SD = 7.985) were significantly lower than the overall sample ($n = 16{,}238$, $M = 5.47$, SD = 5.467), $t(560) = 25.222$, $p < 0.001$; a large effect size ($d = 1.242$). These results can also be seen in Table 1.

Linear regression was used to determine whether social support and its specific types (i.e., guidance, reliable alliance, reassurance of worth, attachment, and social integration) significantly predicted psychological distress among individuals with BD-I or BD-II, along with respondent age. The results indicated that social integration, age, and reassurance of worth were significant predictors ($R^2 = 0.230$, $F(3,546) = 54.324$, $p < 0.001$). In particular, it was observed that the higher levels of social integration ($\beta = 1.778$, $p < 0.001$) and reassurance of worth ($\beta = 1.246$, $p < 0.005$) significantly predicted *lower* psychological distress, and younger respondents were more likely to report higher distress ($\beta = 0.438$, $p < 0.005$). These results are shown in Table 2.

Finally, BD-I and BD-II were examined as a moderator of the relationship between social support and psychological distress, and the result was significant ($R^2 = 0.139$, $F(3, 24027) = 1297.13$, $p < 0.001$), with a large effect size ($d = 1.59$). These results can be seen in Fig. 1.

Discussion

One of the goals of this study was to identify whether Canadian adults with BD-I or BD-II differ in terms of their social support and psychological distress compared to adults without BD-I or BD-II. It was found that adults with BD-I or BD-II perceive significantly lower levels of overall social support and subtypes of support than adults

Table 2 Summary of stepwise regression analysis for variables predicting psychological distress

	Coefficients/standard error		
	Block 1	Block 2	Block 3
Constant	30.227/1.426***	32.816/1.626***	35.622/1.806***
Social integration	− 2.582/.222***	− 2.639/.221***	− 1.778/.333***
Age		− 0.412/0.128**	− 0.438/0.127**
Reassurance of worth			− 1.246/.363

**$p < 0.005$

***$p < 0.001$

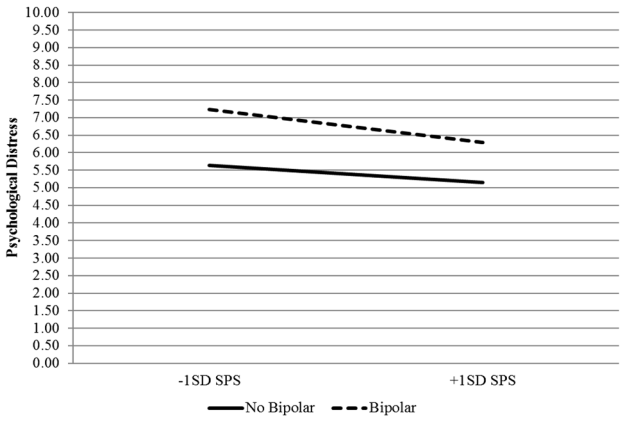

Fig. 1 Moderation effect of social support on psychological distress among bipolar and non-bipolar individuals

without BD-I or BD-II. This finding supported the original hypothesis that Canadian adults with BD-I or BD-II perceive lower levels of social support than adults without BD-I or BD-II. This is also in line with previous research regarding support for individuals with BD-I and BD-II [9, 10]. For example, Romans and McPherson observed that individuals with bipolar disorder had significant problems with both intimate relationships and social integration. Specifically, individuals with bipolar disorder had difficulty confiding in others, discussing uncomfortable experiences, and socializing at work and casual conversations [9]. Similarly, Sierra et al. also found that individuals with bipolar disorder do not function well socially, suggesting that individuals with bipolar disorder have trouble connecting to others, which can be problematic for a disorder that has many deleterious symptoms and consequences [10].

Indeed, similar to other mental health challenges such as depression, support in the form of intimate relationships and social integration may act as a buffer for individuals with the disorder and may serve to combat the severity of the illness [e.g., 14, 15]. Consistent with these findings, Gruber et al. [11] found that individuals with bipolar disorder experience less happiness, compassion for others, awe, love, and satisfaction than healthy individuals. The absence of these emotions, especially compassion and love, may contribute to individuals' inability to establish relationships with others, resulting in lower support [11]. Furthermore, Suto et al. [22] conducted a qualitative study and found that individuals with bipolar disorder experienced self-stigma, in that they felt ashamed of their disorder and judged themselves which prevented them from reaching out to others [22]. Stigma is also felt by family members of individuals with bipolar disorder [12] which could act to deter family members from being involved. Therefore, the findings from the present study (that individuals with BD-I or BD-II perceive less social support than individuals without BD-I or BD-II) are not surprising.

Coupled with lower levels of social support, and consistent with our hypothesis, this study also observed significantly higher levels of psychological distress among adults with BD-I or BD-II compared to those without the diagnosis. This result was expected since it has been found that high psychological distress is also evident in people with mood and anxiety disorders [e.g., 3]. Furthermore, higher scores on the psychological distress scale, used in the present study, have been shown to identify individuals who have mood disorders, such as bipolar disorder [3]. Therefore, individuals from the present study are likely to experience negative impacts from high psychological distress, such as low income, low education, and low living standards [4, 5].

Results from this study indicated that adults with BD-I and BD-II who perceived higher social support experienced lower levels of psychological distress compared to those who perceived lower levels of social support. This was expected since prior research has found benefits of social support among the bipolar population [6–8]. For example, social support has been associated with less frequent and severe symptoms of bipolar disorder [6–8]. Support may provide comfort and stability to individuals with bipolar disorder during difficult times which may result in less psychological distress.

In particular, the present study found that support in the form of reassurance of worth and social integration was significant in predicting psychological distress among individuals with BD-I or BD-II. Therefore, individuals experienced less psychological distress if they felt that their competence was recognized by others (reassurance of worth) and if they felt that they belonged to a group (social integration). Since

individuals with bipolar disorder experience self-stigma [12], this may have an impact on their self-worth. In fact, stigma related to mental illness has been shown to reduce self-esteem [23]. Therefore, the finding that support in the form of reassurance of worth decreases psychological distress makes sense: individuals with bipolar disorder may experience stigma, resulting in a lack of self-esteem which leads to higher psychological distress that can be reduced when they have support that reassures them of their worth. Furthermore, the finding that social integration related to less psychological distress is in line with previous research. For example, Sani, Herrera, Wakefield, Boroch and Gulyas [24] found that the well-being of individuals with mental illness was positively affected by identifying with groups (such as family or the army) and not just contact with groups [24]. Therefore, it seems that individuals with BD-I and BD-II benefit from feeling worthy and identifying with a group.

Interestingly, a moderating effect of bipolar disorder on the relationship between social support and psychological distress was found. Therefore, it seems that both adults with BD-I or BD-II and the overall CCHSD sample experienced less psychological distress with greater social support; however, those with BD-I or BD-II experienced a *greater decrease* in psychological distress with more support.

To our knowledge, previous research has not investigated the relationship between social support (overall and by sub category) and psychological distress among individuals with and without bipolar disorder; however, a relationship between social support and psychological distress was found when comparing low-income and high-income groups [4]. Congruent with the present study, social support accounted for greater variance in psychological distress among the low-income group compared to the high-income group. This suggests that social support means more to the, presumably more vulnerable, low-income group than the high-income group. The present findings show that the more vulnerable population of individuals with BD-I and BD-II experienced less psychological distress with greater support compared to individuals without BD-I or BD-II. Therefore, it seems that social support may act as a protective factor for vulnerable populations, such as those who receive low incomes and those who have BD-I or BD-II.

Limitations

There are a few limitations to this study. Most importantly, this is a correlational study; therefore, causation cannot be inferred. Also, the CCHS excluded a small percentage of the population that included: individuals living in the three territories, individuals living on Aboriginal settlements, members of the Canadian forces, and individuals that are institutionalized. It is possible that these individuals may differ in some way and results may not be generalizable to them. Furthermore, we did not have access to medical records and relied on self-report of a diagnosis of bipolar disorder, which may not be accurate. Further, the survey asked if individuals had been diagnosed with bipolar disorder, which may exclude individuals who have BD-I or BD-II but have not been diagnosed. Finally, it was not asked if individuals were taking medication, which could have impacted the level of psychological distress.

Conclusion

Canadian adults with BD-I or BD-II are at an increased risk for lack of social support and higher psychological distress. Adults with BD-I or BD-II who have low social support are at an even greater risk of developing psychological distress. It appears that high perceived social support serves as a protective factor for psychological distress among adults with BD-I or BD-II; particularly in the forms of reassurance of worth and social integration. This knowledge is important when developing treatment/intervention programs for individuals with bipolar disorder. Treatment may be more beneficial if individuals receive support that can act to reassure their worth and connect them to a group. Future research can explore why only certain types of social support were associated with psychological distress. Also, research can be done to determine why an increase in age was associated with less psychological distress.

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Compliance with ethical standards

Conflict of interest On behalf of all authors, the corresponding author declares that there are no conflicts of interest.

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