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**Financial Difficulties in Bipolar Disorder Part 2:
Psychological Correlates and a Proposed Psychological
Model.**

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Financial Difficulties in Bipolar Disorder Part 2: Psychological Correlates and a Proposed Psychological Model.

Abstract

Objectives: A number of psychological variables have been shown to be prominent in Bipolar Disorder. However no research has looked at the relationship between financial difficulties and psychological factors in Bipolar Disorder.

Aims: This study aims to look at the relationship between financial difficulties and psychological factors in Bipolar Disorder.

Method: 54 participants with diagnosis of Bipolar Disorder in an adult secondary care NHS mental health service completed the questionnaire pack which included measures examining financial variables including difficulty paying bills, and perceived financial wellbeing. Questionnaires measured self-esteem, impulsivity, mindfulness and dysfunctional attitudes.

Results: Financial difficulties cross-sectionally were related to a number of psychological variables such as mindfulness and impulsivity. Over time the strongest effects were for compulsive spending which was increased over time by higher dependency and achievement cognitions, lower mindfulness and lower self-esteem. Poor perceived financial wellness lower self-esteem over time. A psychological model incorporating these and related findings is presented.

Conclusion: Psychological factors appear to be related to financial difficulties in Bipolar Disorder. Future research is needed to confirm the model presented here and develop interventions.

Declaration of Interest: MJ has no conflicts of interests. CF undertakes a programme of research, training, and intervention with financial services organisations on mental health, but this has no direct bearing on the findings reported in this paper. TR has presented some of the results of this study to a finance company, for which money has been donated to a charity. He

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2
3 also presented unpaid to charity and wrote a blog about this research. TR has been paid as a
4
5 consultant and will receive royalties from a software company for developing an intervention
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7 around financial difficulties and mental health which uses insights from his own research
8
9 including this paper, as well as findings from other published research in the area. This study
10
11 was funded via Research Capability Funding from National Institute for Health Research via
12
13 Solent NHS Trust.
14
15

16 **Keywords:** Bipolar Disorder; Finances; Debt; Compulsive Buying.
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Financial Difficulties in Bipolar Disorder Part 2: Psychological Correlates and a Proposed Psychological Model.

Introduction

Bipolar Disorder is characterised by episodes in hypomania or mania and episodes of depression. These extremes are estimated to affect 2-3% of the general population (Merikangas, 2011). The diagnostic criteria for a hypo(manic) episode includes symptoms of inflated self-esteem, increased talkativeness, goal directed behaviour, participating in risky behaviours, racing thoughts, distractibility and a decreased need for sleep (APA, 2013). In contrast, a depressive episode typically includes symptoms of depressed mood or irritability, fatigue, decreased interest or pleasure in usual activities, guilt/worthlessness, diminished ability to concentrate and suicidality (APA, 2013). Both of these mood extremes can result in significant functional impairment and can lead to psychological, social and economic problems (Cheema et al., 2015). A number of studies have demonstrated the psychological profile of those with a diagnosis of Bipolar Disorder. This paper will now review some key psychological variables and consider how they might be related to financial difficulties.

Impulsivity

Impulsivity has been shown to be high in those with a diagnosis of Bipolar Disorder (Muhtadie et al., 2014), and to impact manic symptom severity and course (Najt et al., 2007; Strakowski et al., 2009; Swann et al., 2001). During a hypo(manic) episode, individuals have been shown to have an increased likelihood of partaking in disruptive behaviours such as impulse spending, gambling, sexual indiscretions, and initiating grand schemes (Muhtadie et al., 2014). Fletcher et al. (2013) found that 70% of patients reported impulse spending when hypomanic, and those with Bipolar Disorder have more symptoms of compulsive buying (Kesebir, İşitmez, & Gündoğar, 2012).

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3 Cheema et al. (2015) found that Bipolar Disorder patients have a diminished ability to
4 effectively and this appeared to be related to impulsivity. Finally, research shows that
5 compulsive buyers have higher levels of impulsivity (Williams & Grisham, 2012). Thus
6 impulsivity might be related to impulse spending and other financial difficulties in Bipolar
7 Disorder; however no studies have examined these relationships over time..
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18 *Self-Esteem*

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20 A meta-analysis conducted by Nilsson et al. (2010) found that Bipolar Disorder
21 patients in comparison to controls exhibited lower self-esteem between episodes. Studies
22 have also shown that self-esteem predicts changes in depression over time in Bipolar
23 Disorder (Johnson, Meyer, Winett, & Small, 2000). There are two potential links between
24 self-esteem and financial difficulties. Firstly, Wickrama, Surjadi, Lorenz, Conger, & O'Neal,
25 (2012) found that self-esteem mediated the relationship between financial hardships and
26 mental health, though other studies have found no such mediating relationships (Burdette,
27 Hill, & Hale, 2011). Secondly, self-esteem may be related to impulsive spending as it has
28 also been found to predict risk taking behaviours in adolescents (Auerbach & Gardiner,
29 2012). However no research has examined the link between self-esteem and financial
30 variables in Bipolar disorder specifically.
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46 *Dysfunctional Assumptions*

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48 Those with Bipolar Disorder have shown higher scores on dysfunctional attitudes than
49 healthy controls (Scott et al., 2000) with higher scores for goal attainment and anti-
50 dependency being evident (Lam et al., 2004). Lam et al. (2004) hypothesise that goal
51 attainment cognitions might be related to over spending. These might be relevant if impulse
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3 spending is goal focused: mania is characterised by an increased in goal-directed behaviour
4 (APA, 2016). Thus dysfunctional assumptions may be related to impulsive behaviours such
5 as compulsive spending in Bipolar disorder; however no research has examined this at
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7 present.
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10 11 12 13 *Mindfulness*

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15 Finally, mindfulness may be related to finances in Bipolar disorder. Preliminary
16 research has shown potential for mindfulness in Bipolar Disorder for improving quality of
17 life (Murray et al., 2015), depression symptoms (Weber et al., 2010; Williams et al., 2008)
18 and anxiety (Perich, Manicavasagar, Mitchell, Ball, & Hadzi-Pavlovic, 2013). However
19 impact on relapse rates has not yet been examined. The relationship between finances and
20 mindfulness in the context of Bipolar disorder has not yet been examined, though research
21 with has shown lower levels of mindfulness in those with compulsive spending (.Williams &
22 Grisham, 2012).
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35 To summarise, research has shown that psychological factors such as self-esteem
36 differ in those with Bipolar Disorder, and research with other populations shows a potential
37 role with financial difficulties. Paper 1 (Richardson, Jansen, & Fitch, Submitted) which used
38 the same sample as this current paper, showed relationships between mental health and a
39 number of financial variables over time. This study aimed to build on this by examining
40 whether psychological variables are related to financial difficulties in Bipolar Disorder, in
41 order to develop a psychological model to guide future research and assist clinical practice.
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52 **Method**

53 54 **Design**

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3 The present study used a longitudinal design. Ethical approach was granted by the
4 University Of Southampton School Of Psychology Ethics Committee as well as the local
5 NHS research ethics committee (NRES Committee South Central- Hampshire B, 15/SC/0436.)
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13 **Recruitment**

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15 This study is using data from a linked study on mental health and finances in Bipolar
16 Disorder (Richardson et al., Submitted) with a linked qualitative study (Richardson et al.,
17 2017). Those with Bipolar Affective Disorder (type I, type II or unspecified) participants
18 were invited to take part by their secondary care community adult mental health clinician in
19 Portsmouth. Those with a diagnosis of cyclothymia were excluded. Participants could be in
20 remission/stable, depressed or hypomanic, however they had to have capacity to give
21 informed consent to take part in the study. Participants had to be 18 years or older.
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31 An invitation pack that included a poster advertising the study, the participant
32 information sheet and an opt-in form were either handed to clients or posted to those deemed
33 suitable by their clinician. In order to opt-in to the study, participants were required to either
34 return the reply slip of the opt-in form or phone or email the research team to express their
35 interest.
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44 **Participants**

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46 Fifty-eight participants opted into the study from 149 who were invited. 54 then took
47 part at time 1 and 40 at time 2. See Richardson et al (submitted) for full details on
48 participants' characteristics. Clients were 68.5% ($n=37$) female and 77.8% ($n=42$) White
49 British with a mean age of 48 years. 61.1% ($n=33$) were unemployed, 33.3% ($n=38$) had a
50 comorbid diagnosis and 55.6% ($n=50$) were reported as in a euthymic state.
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Procedures

The researcher met with participants within the outpatient NHS hospital setting or the participant's home. Written consent was obtained. Participants completed a series of questionnaires at two time points approximately four months apart.

Measures

The following measures were given at both time points. The cronbachs alpha for the current sample at time one are given.

Finances

- **Compulsive buying measurement scale** (Valence, d'Astous, & Fortier, 1988): This a measure of compulsive buying with 13 questions such as *“When I have money I cannot help but spent part or all of it”* and *“There are times when I have a strong urge to buy.”* The original research showed good reliability in compulsive and non-compulsive shoppers $\alpha=.88$. Higher scores represent more symptoms of compulsive buying. The psychometric properties in Bipolar disorder have not yet been tested however the internal consistency was excellent in the current sample $\alpha=.95$.
- **Index of Financial Stress** (Siahpush & Carlin, 2006): A measure of 8 recent financial difficulties such as *‘I was unable to heat home’* and *‘Asked for financial help from friends and family’*. Higher scores represent greater financial difficulties. This has previously been used in longitudinal research on financial difficulties impacting eating disorder symptoms, psychotic symptoms and symptoms of depression and anxiety in a student sample (Richardson, Elliott, Roberts, & Jansen, 2017; Richardson, Elliott, & Waller, 2015; Richardson, Yeebo, Jansen, Elliott, & Roberts,

2018). The authors are not aware of this previously being used with Bipolar disorder, however the internal consistency was adequate in the current sample $\alpha=.74$.

- **InCharge Financial Distress/ Financial Wellbeing Scale** (Prawitz, Garman, Kim, & Drentea, 2006; Prawitz, Garman, Sorhaindo, et al., 2006): A measure of perceived financial wellbeing with 8 questions such as ‘How often do you worry about being able to meet normal monthly living expenses?’ and *How satisfied are you with your present financial situation?*. Higher scores represent greater satisfaction with current financial situation. This was chosen in particular as research has shown that subjective worry about debt is more important than amount of debt (Drentea & Reynolds, 2012). Previous studies have shown that scores on this predict greater overall distress in cancer patients (Meeker et al., 2016). There have been no previous studies to the authors knowledge using this measure with Bipolar Disorder but the internal consistency in the current sample was excellent $\alpha=.95$.

Psychological Correlates

- **Rosenberg Self-Esteem Scale** (Rosenberg, 1989): A 10 item self-report measure of global self-esteem with via questions such as “*On the whole I am satisfied with myself*” and “*I certainly feel useless at times*”. Higher scores suggest higher self-esteem. This measure has been used in previous research with Bipolar Disorder (Johnson et al., 2000), and the internal consistency in the current sample was excellent $\alpha=.90$.
- **Mindful Attention Awareness Scale** (Brown & Ryan, 2003): 15 item measure mindfulness skills and attention to an individual’s emotions and behaviour, via questions such as “*It seems I am “running on automatic” without much awareness of what I’m doing*” and “*I find myself preoccupied with the future or the past.*” Higher

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3 scores show more mindfulness/greater awareness. This has previously been used in a
4 trial of mindfulness based cognitive therapy for Bipolar Disorder (Perich et al., 2013),
5 and the reliability was excellent in the current sample: $\alpha=.92$.
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9 • **Dysfunctional Attitude Scale 24 item version** (Power et al., 1994): a measure of
10 dysfunctional beliefs via questions such as. The subscales identified by (Lam et al.,
11 2004) for Bipolar Disorder specifically were used here: Goal Attainment (e.g. “If I try
12 hard enough, I should be able to excel at anything I attempt”, internal consistency
13 adequate in the current sample: $\alpha=.79$), Dependency (e.g. “What other people think
14 about me is very important”, internal consistency adequate in the current
15 sample: $\alpha=.75$) and Achievement (e.g. “If I am to be a worthwhile person, I must be
16 truly outstanding in at least one major respect”, internal consistency adequate in the
17 current sample: $\alpha=.77$). Higher scores represent greater dysfunctional attitudes.
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- 20 • **Barratt Impulsivity Scale: 15 item version** (Spinella, 2007): This is a brief version
21 of a widely used measure of impulsivity using questions such as ‘*I act on the spur of*
22 *the moment*’ and ‘*I plan for the future*’. Greater scores demonstrate greater
23 impulsivity. The full 30-item measure has been used in many studies with Bipolar
24 Disorder (e.g. (Swann et al., 2005). This scale has a similar factor structure and
25 internal consistency to the longer 30-item version (Spinella, 2007). The current
26 sample has adequate internal consistency: $\alpha=.77$, similar to the $\alpha=.79$ achieved in the
27 original validation paper with a community sample (Spinella, 2007)
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48 **Statistical Analysis**

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50 Correlations were used initially to examine cross-sectional correlations. There was
51 insufficient sample size for multiple regression therefore partial correlations were used to
52 look at longitudinal correlations. Missing data was filled in with the mode and the total scores
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3 then calculated as normal. There were low levels of missing data: a maximum of two people
4 missing an item for the Compulsive Buying Scale, 1 for the Index of Financial Stress,
5 InCharge scale, Self-Esteem Scale and Dysfunctional Attitudes Scale. One item on the
6 Mindfulness scale had 6 people not completing but 1 for the remaining items. Similarly for
7 Impulsivity there was one item with 3 participants missing but the remaining questions had
8 one participant missing.
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15 Non-normal distribution was identified via visual inspection of histograms and
16 looking at whether kurtosis and skewness were outside of $-/+2$ ranges. Variables which were
17 non-normally distributed could not be examined via partial correlation.
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24 **Results**

25 **Correlations**

26 All variables were normally distributed except for the Index of Financial Stress (IFS).
27 Table 1 displays the correlations between financial and psychological variables at time 1. All
28 correlations and partial correlations are one-tailed.
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37 *** Insert Table 1 here ***
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39 Variables which were significant at baseline were correlated with those scores at time
40 2. If this was significant than a partial correlation was performed to see whether the impact
41 held over time after controlling for baseline scores (this could not be done for the IFS which
42 was non-normally distributed).
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48 Table 2 demonstrates the correlations for the psychological variables at baseline with
49 financial variables at time two, before and after controlling for baseline financial variable
50 scores. These showed that greater compulsive spending at time two was significantly
51 predicted by lower self-esteem, lower mindfulness and higher dependency and achievement
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dysfunctional assumptions at baseline after controlling for baseline compulsive spending. There were no significant correlations over time for baseline psychological variables on time two perceived financial distress/wellness, once baseline financial distress/wellbeing was controlled for.

*** Insert Table 2 here ***

Table 1 also demonstrates the correlations for the financial variables at baseline with psychological variables at time 2, before and after controlling for baseline psychological variables. The only significant variable which held over time were that greater financial distress/wellbeing at baseline correlated with greater self-esteem at time two after controlling for baseline self-esteem. **Discussion**

This study used a longitudinal design to examine the relationship between financial and psychological variables over time in Bipolar Disorder. Previous research has examined symptoms of compulsive buying in Bipolar Disorder but not psychological mechanisms (Kesebir et al., 2012). Other studies have only examined the role of a single variable (Cheema et al., 2015).

A number of variables were significant at one time point with financial difficulties being correlated with greater impulsivity and reduced mindful awareness. It could be that impulsivity leads to financial difficulties due to poor financial management, however due to the non-normal distribution it is not possible to examine longitudinal relationships for this variable. Goal attainment cognitions were also correlated with compulsive spending, however this did not hold over time. This is perhaps surprising given impulse spending is given as a potential goal-focused behaviour which causes difficulties in the diagnostic criteria for a manic episode (APA, 2013). It is also unexpected that the effect of impulsivity on compulsive

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3 spending did not hold over time given that this has previously been related to poor financial
4 management in Bipolar Disorder (Cheema et al., 2015), and compulsive spending outside of
5 Bipolar Disorder (Williams & Grisham, 2012). It is possible that for some variables
6 longitudinal results may not be statistically significant due to a reduced sample size and
7 resulting lower statistical power at time 2.
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13 A number of psychological variables remained significantly related to financial
14 variables over time with the strongest effects for compulsive spending. Dysfunctional
15 assumptions around dependency and achievement increase compulsive spending over time.
16 For dependency and compulsive spending the relationship appeared to work both ways:
17 compulsive spending predicted greater later dependency and vice versa. It has previously only
18 been hypothesised that dysfunctional assumptions might fuel impulse spending (Lam et al.,
19 2004): this study represents the first time such a potential link has been suggested
20 empirically.
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34 Compulsive spending also appeared to be increased over time by lower self-esteem
35 Previous studies have shown that self-esteem is an important psychological variable in the
36 relationship between financial difficulties and depression (Wickrama et al., 2012), however
37 this is the first time that a relationship has been shown for Bipolar disorder. The current
38 findings are in line with studies showing that compulsive buying is associated with low self-
39 esteem (Müller, Mitchell & de Zwaan, 2015). Poorer perceived financial wellness also
40 appeared to lowered self-esteem over time. Study 1 (Richardson et al., submitted) found that
41 poorer perceived financial wellness increased anxiety and stress over time. It is possible that
42 self-esteem is a mediating factor between this relationship however this cannot be examined
43 in the current sample.
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3 For all variables relationships were examined over time in order to try and determine
4 whether psychological variables predicted later financial variables or vice versa. Broadly
5 speaking the results appear to suggest that psychological variables appear to predict later
6 financial variables over time rather than the other way around. However this study only had a
7 four month follow-up period and a longer study may have shown different patterns over time.
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14 Finally, poorer mindfulness awareness appeared to increase compulsive spending
15 symptoms over time. Previous research has shown a relationship between mindfulness and
16 compulsive spending (Williams & Grisham, 2012), this is the first time to the author
17 knowledge that such a relationship has been shown in Bipolar disorder specifically.
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23 ***Proposed Psychological Model***

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25 The above findings from this study were combined with previous findings from this
26 sample which are summarised in table 3. It is important to note the limitations of the
27 quantitative data given a small sample size and short-follow up period. It is also important to
28 note that for some themes in the qualitative study, relatively small numbers of participants
29 responded in ways which fitted into the themes. It is therefore important to say that this
30 model is not attempting to apply to everybody with Bipolar disorder and financial difficulties,
31 but rather is trying to demonstrate a number of potential relationships, which will likely not
32 apply to all individuals. It is also important to note that the terms impulsive
33 spending/compulsive spending are used interchangeably as the qualitative study identified
34 impulsive spending as a theme: some individuals may meet criteria for impulse spending here
35 but the term here is not necessarily meant in the clinical sense of the word but rather to
36 denote emotion-drive impulsive spending.
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51 Figure 1 shows the proposed psychological model of the relationship between mental
52 health and financial difficulties in Bipolar Disorder which takes into account all of these
53 findings.
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5 ***Insert figure 1 and table 3 here***
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9 Financial stress (being unable to pay the bills) leads to poorer perceived financial
10 wellness and needing to go without items such as new clothes or socialising. These then lead
11 to negative affect via self-esteem. This negative affect then leads to compulsive spending via
12 comfort spending: Previous research has suggested a role for negative affect in impulsive
13 spending (Silvera, Lavack, & Kropp, 2008) The negative affect can also lead to poor
14 mindfulness (improvements in mindfulness have been linked with improvements in
15 depression in Bipolar Disorder, Weber et al., 2010), which then makes individuals more
16 susceptible to impulse spending: Impulsive spending then worsens financial difficulties.
17 Unstable employment (identified as a theme and demonstrated by 61% unemployment in the
18 sample) due to mental health problems can exacerbate financial difficulties and also lower
19 self-esteem due to relying on benefits.
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33 Financial difficulties lead to poor perceived financial wellness which leads to anxiety
34 and stress. This anxiety and stress leads to avoidance of finances and poor financial planning
35 which further exacerbates financial difficulties.
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39 Impulsive spending might lead to regret and guilt about such purchases, which then
40 increases dependency cognitions on others, for example feeling like you need the approval of
41 others. Previous research has shown that guilt is commonly reported consequence of high risk
42 behaviours when manic such as impulse spending (Fletcher et al., 2013). A coping
43 mechanism for this might be increased generosity to others, which then fuels further impulse
44 spending.
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52 Finally there is a hypomanic cycle whereby financial difficulties lead to cognitions in
53 particular around a need for achievement perhaps to solve financial difficulties: Previous
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3 research has shown that those with Bipolar Disorder have greater ambitions for personal
4 wealth and that these increase manic symptoms over time (Johnson & Carver, 2006; Johnson
5 & Carver, 2012). This leads to a plan to make money for example a risky business venture
6 which increases hypomanic symptoms and leads to compulsive spending. Essentially this
7 cycle is that those with Bipolar Disorder are struggling financially and they then 'spend
8 money to make money' to try and get themselves out of this situation but it might actually
9 make things worse. This links here to the concept of 'Ascent Behaviours' in the integrative
10 cognitive model of mood swings (Mansell et al., 2007), whereby dysfunctional assumptions
11 impact appraisals of early warning signs and coping strategies. For example somebody with a
12 belief about the important to work hard may notice they are becoming manic and try to 'use'
13 this energy to set up a business which might end up losing them money. It is important to
14 note that study 1 did not find a relationship between current manic symptoms and compulsive
15 spending, however it might have been that the follow-up was no longer enough to detect a
16 relationship for current manic symptoms As study 1 found a correlation with past hypomanic
17 symptoms this has been tentatively included in the model.
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Clinical Implications

41 The findings from this study and the linked model suggest that a number of
42 psychological mechanisms might be beneficial. For example mindfulness has been shown to
43 be beneficial in Bipolar Disorder quantitatively (Miklowitz et al., 2009; Weber et al., 2010;
44 Williams et al., 2008) and qualitatively (Chadwick et al., 2011). The current findings suggest
45 that increased mindfulness might reduce compulsive spending in Bipolar Disorder. Strategies
46 from Dialectical Behaviour Therapy which has been adapted for Bipolar Disorder (Van Dijk,
47 Jeffrey & Katz, (2013), might provide alternative self-soothing strategies to comfort
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3 spending. Group CBT with a focus on self-esteem has previously been used to tackle
4 compulsive buying (Mitchell et al., 2006; Mueller et al., 2008), and the current results
5 suggests that this might also be helpful for Bipolar Disorder specifically. Interventions to
6 increased feeling of independence and find alternative ways to show affection rather than
7 excessive generosity might help. Cognitive Behaviour Therapy may help tackle beliefs
8 around achievement may reduce compulsive spending. Finally, relapse prevention work may
9 help notice early warning signs of compulsive spending, for example plans to make money
10 and develop practical coping strategies such as giving credit cards to a friend when unwell.
11 However further research is needed to confirm the model in order to better identify
12 mechanisms which might be targeted in interventions.
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26 ***Limitations and Future Research***

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28 The strengths of this study include the longitudinal design and use of a number of
29 different standardised measures of psychological and financial variables: most research in the
30 area of financial and health is cross-sectional (Richardson et al., 2013).
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34 A brief measure of gambling was used in this study but only two individuals reported yes to
35 either of the two screening questions so the data could not be used here. Limitations include
36 that the sample size was small, from one city and with a largely white sample. A major
37 limitation of the sample size is that more sophisticated statistics such as mediation and
38 multiple regression cannot be used, as such due to the number of statistics computed here
39 there is an increased risk of a type I error. Future research should use a larger sample size and
40 examine relationships over a longer period of time: the current follow-up time was only four
41 months and stronger relationships might have been found over a longer period of time More
42 recent measures have been developed for spending disorders (see Müller, Mitchell, Vogel,
43 and de Zwaan,2017 for a review), however the measures used here was used due to a small
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3 number of questions for participants, and the alpha was excellent in the current sample.
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5 There was a low opt-in rate to the study. It is possible that a confound in this study is
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7 that as participants were not paid to take part those who were struggling most financially
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9 might have been less likely to take part. It could also be that some potential participants were
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11 too mentally unwell to take part. The measures used here are for self-reported compulsive
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13 spending and thus it is not possible to say whether urges to spend actually translated into
14
15 actual spending. Finally there are a number of other psychological factors which might be
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17 relevant but were not measured here for example Dittmar (2005) found that materialistic
18
19 values were related to compulsive spending.
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24 ***Conclusions***

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26 This study provides preliminary evidence that psychological factors are related to
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28 financial difficulties in Bipolar Disorder. The strongest effects are for compulsive spending
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30 which is fuelled by dysfunctional attitudes, poor mindful awareness and low self-esteem.
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32 Low self-esteem also appears to be exacerbated by financial worries in Bipolar disorder.
33
34 Psychological variables such as self-esteem which have shown to be important factors in
35
36 Bipolar Disorder also appear to be related to the financial difficulties. Future research should
37
38 confirm these links and the proposed model in order to develop interventions specifically
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40 tailored to this problem in this population.
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Table 1:

Parametric and Parametric Correlations between Mental Health and Financial Variables at Baseline (one-tailed)

	Self-Esteem	Mindful Awareness	Goal Attainment	Dependency	Achievement	Impulsivity
Compulsive Buying Measurement Scale	$r = -.41^{***}$	$p = .58^{***}$	$r = .37^{**}$	$r = .36^{**}$	$r = .31^*$	$r = .69^{***}$
Index of Financial Stress	$\rho = -.22$	$\rho = -.40^{**}$	$\rho = -.17$	$\rho = .19$	$\rho = -.13$	$\rho = .41^{**}$
Financial Distress/Wellbeing Scale	$r = -.43^{**}$	$r = .49^{***}$	$r = -.15$	$r = -.55^{***}$	$r = -.39^{**}$	$r = -.58^{***}$

* $p < .05$ ** $p < .01$

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**** $p < .001$**

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Table 2:

Parametric and Parametric Correlations between Mental Health and Financial Variables at Baseline (one-tailed)

<u>Time 2 scores</u>	<u>Baseline Scores</u>					
	Self-Esteem (Rosenberg Self-Esteem Scale) Baseline (<i>r</i>)	Mindfulness (Mindful Attention Awareness Scale) Baseline (<i>r</i>)	Dysfunction al Attitudes Scale: Goal Attainment Baseline (<i>r</i>)	Dysfunction al Attitudes Scale: Dependency Baseline (<i>r</i>)	Dysfunction al Attitudes Scale: Achievemen t Baseline (<i>r</i>)	Impulsivity (Barratt Impulsivity Scale) Baseline (<i>r</i>)
Compulsive Buying (Compulsive Buying Measurement Scale)						
Time 2	-.54***	-.68***	.35*	.45**	.47**	.58***
Time 2 (controlling baseline score)	-.39**	-.46**	.10	.42**	.48**	.1
Financial Distress/WellBeing Scale						
Time 2	.29*	.18	<i>NS at</i>	.12	-.17	-.34*

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			<i>baseline</i>			
Time 2 (controlling baseline score)	.04	-	-	-	-	.06
	<u>Baseline Scores</u>					
<u>Time 2 scores</u>	Compulsive Buying (Compulsive Buying Scale) Baseline (r)	Financial Distress/WellBeing (Personal Financial Wellness Scale) Baseline (r)				
Self-Esteem (Rosenberg Self- Esteem Scale)						
Time 2	-.27*	.44**				
Time 2 (controlling baseline score)	.04	.31*				
Mindfulness (Mindful Attention Awareness Scale)						
Time 2	-.54***	.36*				
Time 2 (controlling baseline score)	-.16	.10				

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Dysfunctional Attitudes Scale:		
Goal Attainment		
Time 2	.22	<i>NS at baseline</i>
Time 2 (controlling baseline score)	-	
Dysfunctional Attitudes Scale:		
Dependency		
Time 2	.36*	-.20
Time 2 (controlling baseline score)	.28*	
Dysfunctional Attitudes Scale: Achievement		
Time 2	.22	-.13
Time 2 (controlling baseline score)	-	-
Impulsivity (Barratt Impulsivity Scale)		
Time 2	.5**	-.42*
Time 2 (controlling baseline score)	-.12	-.1

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* $p < .05$
** $p < .01$
*** $p < .001$

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Table 3:

Summary of other findings from current sample to be incorporated into Model

<p>Part 1 study:</p> <p>Quantitative Analysis: Mental Health and Financial Difficulties in Bipolar Disorder</p>	<p>Richardson et al (2017):</p> <p>Qualitative Analysis of Relationship Between Mental Health Finances in Bipolar Disorder</p>
<ul style="list-style-type: none"> • Sample: Same sample as current study: 54 participants with Bipolar disorder at time 1: 40 at follow-up. • Measures: Same as current sample for finances: Index of Financial Stress, InCharge Financial Distress/ Financial Wellbeing Scale, Compulsive buying measurement scale. • Measures of mental health: Hypomania Checklist 16 item version (one time point), multiple time-points: Alcohol Use Disorders Identification Test Perceived Stress Scale, Altman Self-rating Mania Scale, 7-Item Generalized Anxiety Disorder Scale, Suicidal Ideation Items, Centre for Epidemiological Studies Depression 	<ul style="list-style-type: none"> • Sample: Same sample as current study. 44 participants who reported that their finances impacted their mental health or vice versa given free text to write why this was the case. • Sub-sample of 6 invited to a focus group using structured open-ended initial questions. • Results from interview and questions

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Scale. All had acceptable to current internal consistency in current sample.	pooled and analysed with thematic analysis.
<p>Cross-sectional findings:</p> <ul style="list-style-type: none"> • Going without items such as clothes due to financial difficulties linked to more symptoms depression, anxiety, stress and past hypomanic symptoms. • Those currently on benefits had more symptoms of depression. • Greater past hypomanic symptoms correlated with higher current scores on compulsive buying, lower current perceived financial wellness and greater current financial difficulties. • No correlation between suicidality and financial variables. • No impact on mental health of being unemployed, having a mortgage, income level, using less utilities, having a current loan or current credit card. <p>Longitudinal findings (partial correlations with initial scores controlled for):</p> <ul style="list-style-type: none"> • Poorer perceived financial wellness increased anxiety and stress over time, after controlling for baseline symptoms. No impact of any mental health measure on later perceived financial wellness. 	<p>Following themes emerged (number out of 44 whose answers fitted into this theme):</p> <ul style="list-style-type: none"> • Overspending including impulsive shopping (<i>n</i>=44) and excessive generosity (<i>n</i>=6),. • Anxiety/Depression,(<i>n</i>=29), including Suicidality (<i>n</i>=7). • Regret/Guilt (<i>n</i>=10). • Poor planning/Avoidant Coping ,(=<i>n</i>=27). • Vicious Cycle (<i>n</i>=8). • Comfort spending (<i>n</i>=6). • Impact on Employment ,(=<i>n</i>=24).

- More symptoms of stress, depression and anxiety increased scores buying scores after accounting for baseline compulsive spending. No impact of current manic symptoms.
- Compulsive shopping also increased anxiety over time suggesting a vicious cycle.
- Poorer perceived financial wellness increased anxiety and stress over time after controlling for initial symptoms. No impact on depression or manic symptoms.
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Figure 1:
Proposed Psychological Model of Relationships between Financial Difficulties and Mental Health in Bipolar Disorder

