



## Social identity shapes stress appraisals in people with a history of depression



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### ABSTRACT

Ingroup perception or the views people with depression have about their group, may influence their vulnerability to social identity threat and lead to enhanced stress reactions and impaired performance. It is unclear how ingroup perception can influence stress appraisals in performance situations among people with a history of depression who are currently in remission. We investigated the impact of ingroup perception on primary stress appraisal, i.e. how threatening a test situation is perceived, as well as on secondary stress appraisal, or perceived coping resources. Sixty people with a history of depression and currently in remission underwent computerized performance tests. Ingroup perception (group identification, group value and entitativity) and stress appraisals were assessed by self-report. In multiple linear regressions higher group identification predicted stronger perception of the situation as stressful if participants perceived people with depression as a coherent group (high entitativity) and held this group in low regard (low group value). In turn, stronger group identification was related to more perceived coping resources especially if participants did not regard people with depression as a coherent group. Our findings highlight the relevance of ingroup perception for stress and coping processes in people with a history of depression.

### 1. Introduction

People with a history of mental illness such as depression may have a lifelong fear of being devalued because they belong to a stigmatized group. Belonging to the group of people with depression is part of their *social identity* - the part of an individual's self-concept derived from membership of a relevant social category or group (Tajfel and Turner, 1979). While positive and/or voluntary social identities such as being part of a sports club or a peer group positively impact mental health (Cruwys et al., 2014), being a member of the group of people with mental illness, a socially devalued and stigmatized group, increases vulnerability to *social identity threat* (Major and O'Brien, 2005). Social identity threat occurs if a person fears that he or she could be devalued on the basis of their social identity in a particular context, for example within performance situations (Steele et al., 2002). This threat may lead to enhanced stress reactions (Schmader et al., 2008) and impaired performance outcomes (Quinn et al., 2004). Individuals with depression are particularly vulnerable to daily life stressors due to a negative bias in appraising those stressors, including subsyndromal depression and remission (Krackow and Rudolph, 2008; Wichers et al., 2007).

Overall, three aspects are neglected in research on social identity threat in mental illness: a) focusing on a specific group such as people with a history of depression, b) how ingroup perception may influence stress appraisals and c) focus on performance situations.

How does ingroup perception influence stress appraisals? Generally, ingroup perception may have a negative or positive impact on group members depending on whether or not they see their group as coherent (group entitativity), how much they identify with it (group identification) and if they think positively about their group (group value) (Correll and Park, 2005). In studies focusing on stigma-related stress processes associated with gender or race, high group identification increased the appraisal of a stigmatizing incident as harmful (McCoy and Major, 2003; Sellers and Shelton, 2003) and moderated emotional reactions (McCoy and Major, 2003). On the other hand, increasing identification with one's devalued ingroup can have a protective function in the presence of perceived stigma (Branscombe et al., 1999; Latrofa et al., 2009). In people with mental illness, Rüsçh et al. found higher group identification and high group entitativity to be associated with appraisal of stigma as more harmful as well as with more perceived resources to cope with stigmatization (Rüsçh et al.,

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2009b). In people with depression the effect of perceived discrimination on poorer wellbeing was partly mediated by the centrality of depression for their identity (Cruwys and Gunaseelan, 2016). On the other hand social identification with other people with mental illness - if associated with greater social support from one's ingroup - can enhance well-being (Elliott and Doane, 2015).

Group value seems to be an important moderator: high group identification in people with mental illness was only related to poorer outcomes such as social performance if they held their ingroup in low regard (Rüsch et al., 2009a). Among individuals who identify strongly with being depressed, illness identification had a negative effect on wellbeing among those who characterized people with depression by negative attributes such as “keep thinking negative and unhelpful thoughts” (Cruwys and Gunaseelan, 2016). Group entitativity also influences the impact of group identification on stress appraisals. As it refers to similarity and interdependence in terms of benefits and failures between group members, an ingroup with high entitativity will be more meaningful to the individual and entitativity correlates with higher group identification (Correll and Park, 2005). Identifying with a stigmatized ingroup if perceived as coherent and meaningful could thus increase stress vulnerability (primary stress appraisal) on the one hand and be a source of coping resources (secondary appraisal) on the other hand (Rüsch et al., 2009b). Assigning the same stereotypical features to both the ingroup and the self (self-stereotyping) buffered the negative effect of group identification on self-esteem (Latrofa et al., 2009).

Thus identification with a devalued social group can represent an important source of support as well as a possible threat, depending on ingroup perception and threat appraisal processes (McCoy and Major, 2003; Rüsch et al., 2009a, 2009b) (Fig. 1).

Does belonging to a devalued group such as people with mental illness also affect stress appraisals in performance situations? While the above-mentioned research is focusing on stigma-specific or identity threat appraisals and is mostly trait-based, little is known about the influence of group identification on the appraisal of performance situations and of coping resources. In our study, participants with a history of depression were exposed to a performance situation. We chose remitted individuals to minimize the influence of depressive symptoms on ingroup perception and appraisal processes. We investigated the impact of group identification on stress appraisals, including group value and group entitativity as possible moderators and controlling for depressive symptoms. Based on findings for stigma-related stress, we hypothesized that if group value is low and group entitativity

is high, high group identification would lead to increased perceived stress (primary stress appraisal) and to lower perceived coping resources (secondary stress appraisal). If group value and group entitativity is high, we expected high group identification to be associated with lower perceived stress and higher perceived resources.

## 2. Methods

### 2.1. Participants

We recruited 60 persons between 18 and 65 years with a history of at least one major depressive episode, but currently suffering from no or only minimal depressive symptoms (Beck Depression Inventory, BDI-II  $\leq 13$ ). Participants were recruited from general practitioners and using newspaper advertisements; others were recruited from our hospital data base of former inpatients. All participants gave written informed consent and the study was approved by the ethics committee of Albert-Ludwigs-University Freiburg/Germany.

Past and present depressive episodes as well as comorbid Axis I - psychiatric disorders were diagnosed with the Mini International Neuropsychiatric Interview, German Version 5.0.0 for DSM-IV (Sheehan et al., 1998) by an experienced clinician. Persons with a current depressive episode, a current episode or a history of psychosis or mania, current substance dependency and cognitive disturbances were excluded as well as individuals receiving inpatient treatment within the last 3 months. Persons with current sedative medication or a change of their psychotropic medication in the last two weeks were excluded.

The majority of participants were female, on average 42 years old and diagnosed with major depression on average 14 years ago with a total of three lifetime depressive episodes. Sociodemographic and clinical variables as well as descriptive statistics for group perception variables and stress appraisal are displayed in Table 1.

### 2.2. Study design

In this study we present a secondary analysis of data collected in a randomized controlled trial with a sample of 60 people with a history of depression. The original purpose of the study was to examine stereotype threat effects on test performance by varying the task instruction before taking a working memory and an emotion recognition task. The instruction for the experimental group (= “stereotype threat group”) included a statement about differences in test performance between people with versus without a history of depression. No such statement was given to control group participants. After the instruction we assessed stress appraisals and stress reactions, followed by a computerized working memory test (n-back-task) and an emotion recognition test. We also assessed group identification, group value and perceived group entitativity as possible moderators following test performance.

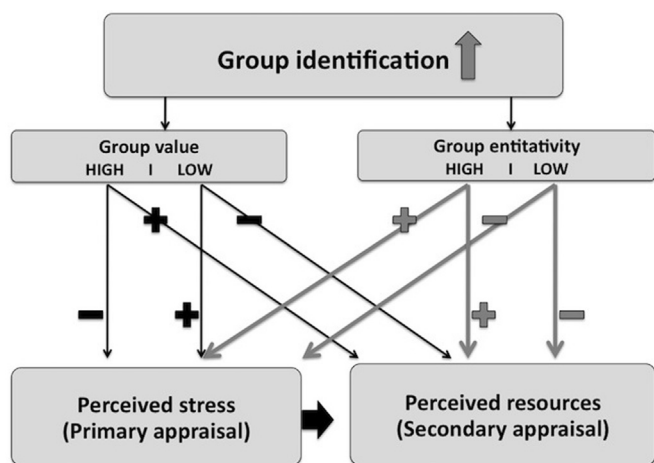


Fig. 1. Model of ingroup perception shaping primary and secondary stress appraisals. We expected if group value is low and group entitativity is high, high group identification would lead to increased perceived stress (primary appraisal) and to lower perceived coping resources (secondary appraisal). If group value is high and group entitativity is high, we expected high group identification to be associated with lower perceived stress and higher perceived resources.

Table 1  
Descriptive statistics.

	M (SD) or n (%)	Range of possible scores	Score range in this study
Age (years)	42 (12)	–	22–64
Gender	m = 19 (32%) f = 41 (68%)	–	–
Depressive symptoms (BDI)	6.0 (3.8)	0–63	0–13
Group identification	4.1 (1.6)	1–7	1–7
Group value	4.5 (1.6)	1–9	1–8
Group entitativity	4.5 (1.9)	1–9	1.5–8.3
Primary appraisal	19 (5.5)	8–48	8–33
Secondary appraisal	19 (5.4)	8–48	8–31

Since we did not detect stereotype threat effects on test performance in our primary analysis, we included all participants ( $n=60$ ) in this secondary analysis and controlled for group status in our analyses to account for any potential impact of the experimental manipulation.

### 2.3. Self-report measures

Primary and secondary stress appraisal of the performance situation was measured by the Primary Appraisal Secondary Appraisal Scale (Gaab et al., 2005) based on the transactional stress model (Lazarus and Folkman, 1984). The original scale consists of 16 items measured on a 6-point Likert scale. The subscales “Threat” and “Challenge” load on “Primary Appraisal” (in our study  $\alpha = 0.80$ ; item example: “This task is challenging me”), and the subscales “Self-concept of Own Competence” and “Control Expectancy” load on “Secondary appraisal” (in our study  $\alpha = 0.74$ ; item example: “I know what I can do in this situation”). Higher sum scores indicate higher appraisals of the situation as a stressor and more perceived resources to cope with the stressor, respectively.

Five items assessed the identification with the group of people with depression, adapted from Rüsche et al. (2009b), Jetten et al. (2001), e.g. “I identify with other people who also were suffering from depression”, with higher mean scores from 1 to 7 indicating stronger group identification (Cronbach's alpha in our study 0.88). Group value was rated with 2 items (Correll and Park, 2005; Rüsche et al., 2009b) also adapted to depression for our study: “I think the group of people with depression is...very good/very bad” and “very powerful/not powerful at all” with higher scores (mean scores range from 1 to 9) indicating a lower group value (Cronbach's alpha 0.55 in our sample). Group entitativity was measured with 4 items (Correll and Park, 2005; Rüsche et al., 2009b) adapted to depression, e.g. “People with depression represent a group”, with higher mean scores from 1 to 9 indicating higher group entitativity (Cronbach's alpha 0.69 in our sample).<sup>1</sup> The 21-item Beck Depression Inventory (BDI-II; Beck et al., 1996) was used to assess current depressive symptoms.

### 2.4. Statistical analysis

Bivariate Pearson correlations were calculated and linear regressions were conducted to predict primary and secondary stress appraisals by ingroup perception variables, controlling for experimental condition and depressive symptoms. Results were considered significant at  $p$ -values  $< 0.05$ . All analyses were done in SPSS version 21.

## 3. Results

### 3.1. Correlations between ingroup variables, stress appraisal and clinical variables

Higher group identification with people with depression was related to higher appraisal of performance tests as stressful (primary appraisal) and to the perception of higher personal coping resources (secondary appraisal; Table 2). A longer duration of mental illness was related to higher entitativity of the group of people with depression. More depressive symptoms were related to higher group identification and to more perceived resources to cope with the stressor. To rule out that group identification would only be related to stress appraisals mediated by current depressive symptoms, they were included into the regression analysis (see 3.2).

<sup>1</sup> All items for group identification, group entitativity and group value are provided online in the supplementary material.

### 3.2. Group perception and primary stress appraisal

We conducted a linear regression analysis to test whether ingroup perception – group identification, group value and group entitativity – predicts primary stress appraisal (Table 3). When accounting for depressive symptoms (BDI), this revealed a statistically significant model ( $R^2 = 0.25$ ,  $p=0.02$ ) with group identification as the only significant positive predictor. Accounting for the moderating influence of group value and group entitativity on group identification, the explained variance of primary stress appraisal increased from 25% to 46% in the regression model ( $p < 0.0001$ ). Within this model group value and group entitativity were significant predictors.

To interpret the significant interaction of group identification with group value and of group identification with group entitativity, we split the sample in subgroups along the median of group value and group entitativity, respectively. We found that strong group identification was related to higher primary appraisal if subjects perceived people with depression as a coherent group (= high group entitativity) or if they held this group in low regard (see Figs. 2 and 3). The correlation between group identification and primary appraisal was  $r = 0.67$  ( $p < 0.001$ ) in the low group value subgroup (compared to  $r = 0.16$  in the high group value subgroup) and  $r = 0.71$  ( $p < 0.001$ ) in the high entitativity subgroup (compared to  $r = 0.03$  in the low entitativity subgroup), respectively.<sup>2</sup>

### 3.3. Group identification and secondary stress appraisal

We ran a second regression to predict secondary stress appraisal by ingroup perception, accounting for depressive symptoms (Table 4). The model was statistically significant ( $R^2 = 0.28$ ,  $p=0.009$ ) with stronger group identification being related to the perception of higher perceived coping resources, again being the only significant predictor. Group entitativity, but not group value, also moderated the impact of group identification on secondary stress appraisal, with the percentage of explained variance in our regression model increasing from 28% to 35% when entering the interaction terms ( $p=0.006$ ).

To interpret the interaction between group identification and group entitativity we split the sample in subgroups along the median of group entitativity. Only in the subgroup with low group entitativity strong group identification was associated with higher perceived resources (secondary appraisal;  $r = 0.57$ ,  $p < 0.001$ ; compared to  $r = 0.33$ ,  $p=0.076$  in high entitativity subgroup).<sup>3</sup> As reported earlier (see 3.1), group entitativity was positively correlated with illness duration. Consistent with this finding, a comparison of clinical variables between high and low entitativity subgroups revealed that in the low entitativity group duration of mental illness was significantly shorter with 6 vs. 14 years in the high entitativity subgroup ( $t(55) = -3.0$ ;  $p=0.004$ ), while no difference was found in the level of current depressive symptoms ( $t(53) = 0.79$ ;  $p=0.43$ ). Adjusting the regression model for a possible influence of duration of mental illness and its interaction with group entitativity in a third step resulted in an increased explained variance ( $R^2 = 0.41$ ,  $p=0.008$ , Table 5). Furthermore, consequently the group identification  $\times$  group entitativity interaction lost significance ( $\beta = 1.2$ ;  $T = 1.8$ ;  $p=0.08$ ).

## 4. Discussion

In performance situations individuals with a history of depression seem to be especially vulnerable to stress when identifying with the

<sup>2</sup> To address possible statistical concerns of moderation analysis by median splits, we additionally carried out a simple slope analysis for primary stress appraisal which confirmed the results obtained by the median splits.

<sup>3</sup> To address possible statistical concerns of moderation analysis by median splits, we additionally carried out a simple slope analysis for secondary stress appraisal which confirmed the results obtained by the median splits.

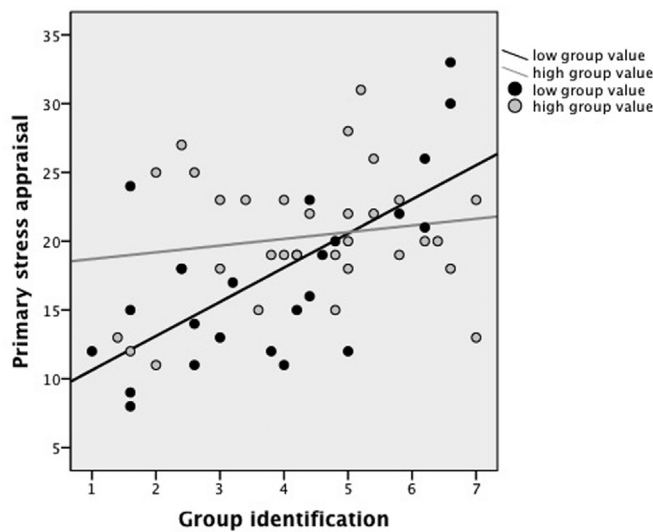
**Table 2**  
Pearson-correlations of primary and secondary stress appraisal with variables of ingroup perception and depressive symptoms.

	Primary appraisal	Secondary appraisal	Group identification	Group value	Group entitativity	Depressive symptoms (BDI)	Duration of mental illness
Primary appraisal	1	0.14	0.44**	0.17	0.35**	0.19	−0.03
Secondary appraisal	0.14	1	0.41**	0.18	0.03	0.37**	0.16
Group identification	0.44**	0.41**	1	0.18	0.44**	0.39**	0.11
Group value	0.17	0.18	0.18	1	0.01	−0.10	−0.14
Group entitativity	0.35**	0.03	0.44**	0.01	1	0.05	0.28*
Depressive symptoms (BDI)	0.19	0.37**	0.39**	−0.10	0.05	1	0.00
Duration of mental illness	−0.03	0.16	0.11	−0.14	0.28*	0.00	1

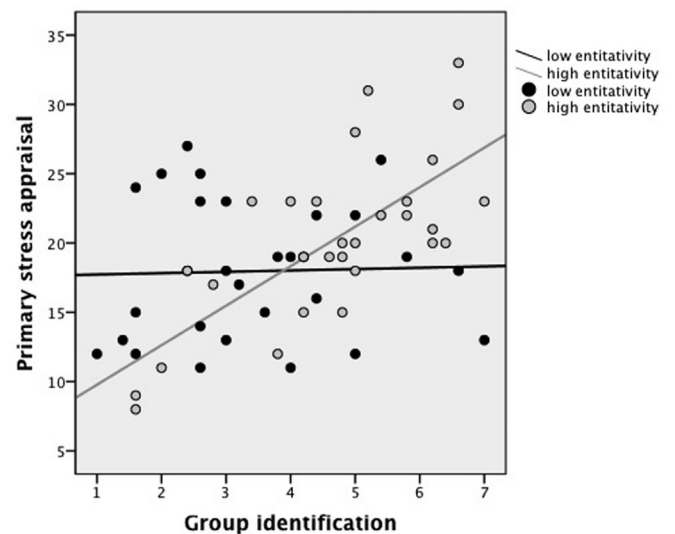
\* p < 0.05;  
\*\* p < 0.01 (two-tailed).

**Table 3**  
Regression of ingroup perception variables on primary appraisal (dependent variable).

Regression 1st step				Regression 2nd step					
Independent Variables	$\beta$	T	p	R <sup>2</sup>	$\beta$	T	p	R <sup>2</sup>	
Experimental condition	0.05	0.39	0.70	0.25	0.11	0.92	0.36	0.46	
Group identification	0.38	2.17	0.036		0.45	0.95	0.35		
Group value	0.05	0.39	0.70		0.91	2.94	0.005		
Group entitativity	0.18	1.19	0.24		−0.90	−2.43	0.02		
Depressive symptoms (BDI)	0.02	0.13	0.90		−0.11	−0.83	0.41		
Group identification * group value					−1.42	−2.87	0.006		
Group identification * group entitativity					1.72	2.99	0.005		



**Fig. 2.** Primary stress appraisal and group identification with the group of people with depression, split into high and low group value subgroups. Only in the low group value subgroup higher group identification is significantly associated with higher primary stress appraisal.



**Fig. 3.** Primary stress appraisal and group identification with the group of people with depression split into high and low entitativity subgroups. Only in the high entitativity subgroup higher group identification is significantly associated with higher primary stress appraisal.

group of people with depression, irrespective of current depressive symptoms. Our study is the first to show a significant influence of social identity on the appraisal of performance stress, not only of stigma-related stress. Especially if they recognize people with depression as a group and hold it in low regard, individuals with a history of depression experience high performance stress. These findings are consistent with previous research on negative consequences of high group identification for stigma-related stress appraisals among stigmatized individuals (McCoy and Major, 2003; Rüscher et al., 2009b; Sellers and Shelton, 2003).

Nevertheless, other studies found a buffering impact of group identification on identity relevant stress (Shnabel et al., 2013), thus moderators of group identification effects on stress need to be defined. First, we confirmed that group entitativity moderates the impact of group identification: The more people with depression are perceived as

a coherent group, the stronger group identification and primary stress appraisal are related to each other. The more the ingroup is perceived as a meaningful entity (Correll and Park, 2005) the more vulnerable a group member will be to possible threats (Thoits, 2013). Second, we found group value to be an important moderator: Only if the group of people with depression was held in low regard, high group identification was significantly related to higher stress appraisal. This is in line with former studies, showing that lower ingroup value was related to the appraisal of stigma as stressful (Rüscher et al., 2009b) and stronger psychophysiological stress responses in a performance task (Scheepers and Ellemers, 2005; Scheepers et al., 2009).

Importantly, we also showed that higher identification with the group of people with depression was associated with more perceived resources to cope with the stressful situation in terms of perceived own competence and expected control, in line with previous findings by



**Table 4**  
Regression of ingroup perception variables on secondary appraisal (dependent variable).

Regression 1st step				Regression 2nd step				
Independent Variables	$\beta$	$T$	$p$	$R^2$	$\beta$	$T$	$p$	$R^2$
Experimental group	0.15	1.13	0.27	0.28	0.12	0.88	0.38	0.35
Group identification	0.41	2.43	0.019		0.79	1.53	0.13	
Group value	0.07	0.48	0.63		-0.21	-0.62	0.54	
Group entitativity	-0.22	-1.43	0.16		0.57	1.41	0.17	
Depressive symptoms (BDI)	0.20	1.41	0.17		0.29	1.99	0.052	
Group identification * group value					-0.43	-0.79	0.43	
Group identification * group entitativity					1.29	2.04	0.048	

**Table 5**  
Regression of ingroup perception variables on secondary stress appraisal (dependent variable).

Regression 3rd step				
Independent Variables	$\beta$	$T$	$p$	$R^2$
Experimental condition	-0.08	-0.62	0.54	0.41
Group identification	-0.54	-0.99	0.33	
Group value	0.46	1.25	0.22	
Group entitativity	-0.57	-1.3	0.20	
Depressive symptoms (BDI)	-0.26	-1.83	0.08	
Group identification * group value	-0.78	-1.35	0.19	
Group identification * group entitativity	1.18	1.8	0.08	
Duration of mental illness	0.19	0.44	0.67	
Duration of mental illness * group entitativity	0.10	0.20	0.84	

Rüsch et al. (2009b), (2009c). Although not directly targeting secondary stress appraisal, other studies show a positive and buffering effect of stronger group identification, e.g. of “writing about social belonging” buffering the stereotype threat effect in an academic performance test in female as well as black students (Shnabel et al., 2013) and ethnic identification reducing chronic stress through discrimination (Mossakowski, 2003).

Different from our expectations, this effect was independent from group value. Maybe due to a very global measure of group value we most probably did not capture some relevant aspects: the personal value of the ingroup in terms of psychological utility (Correll and Park, 2005), the association of the ingroup with social support (Elliott and Doane, 2015) or more specific attributes of the ingroup that moderate the impact of group identification (Tegan Cruwys and Gunaseelan, 2016). These may be attributes of a “recovery identity” e.g. better self-knowledge and a better capacity to cope with emotions (Fullagar and O'Brien, 2012) which have a positive effect on health outcomes such as a lower relapse rate in addictions (Buckingham et al., 2013). Finally, a protective effect of ingroup comparisons within the performance situation (Crocker and Major, 1989) might account for the positive association between group identification and perceived resources.

Further, we found a significant moderation by group entitativity - identifying with the ingroup was associated with higher perceived resources, especially if the group was *not* perceived as a coherent entity. This contradicts our expectations based on previous findings that showed a positive association of entitativity and perceived resources (Rüsch et al., 2009b). Importantly, in our sample, participants perceiving a low entitativity of their ingroup were those with a shorter duration of mental illness. Possibly, perceiving people with depression as a coherent group becomes more likely with longer duration of mental illness and this in turn relates to lower perceived resources. However, adjusting the model by duration of mental illness and its interaction with group entitativity increased the overall explained variance but did not significantly predict secondary stress appraisal. Another possible explanation is that group entitativity may have changed as a reaction to the experimental situation - members of low status groups tend to emphasize group heterogeneity when faced with identity threat (Doosje et al., 1995). Longitudinal studies are needed to further determine a

possible influence of mental illness duration on group perception processes and stress appraisals. Last, we did not include perceived social support as a moderating factor, although it attenuates the negative impact of social identification on stress (Haslam et al., 2005) and buffered the negative effect of social identification on self-esteem (Crabtree et al., 2010).

The most important limitation of our study is its cross-sectional nature. We cannot draw firm conclusions about causality, e.g. whether group perception influences stress perception or whether group perception is a coping effort to reduce identity threat or both. Also, our study was underpowered for testing moderation effects. We also did not control for the fact that depression identity may have been made salient as participants were recruited on the basis of their depression history. Future studies should thus measure ingroup perception before and after an experimental manipulation.

What are the implications for people with depression and for health care providers? First of all, our study should raise awareness of the fact that identifying with a group of people with mental illness such as depression may have negative consequences in performance situations in terms of stress appraisals and may be a source of support in terms of enhanced perceived personal competence. Second, illness identity should be addressed in treatment settings. In the case of performance related stress, restructuring negative attitudes about one's own social identity of being mentally ill may change the appraisal of a stressor and attenuate threat and suffering (Yanos et al., 2010). Challenging the categorical diagnostic approach and thus preventing high identification with mental disorders is an alternative approach. This can be achieved by introducing continuum beliefs about mental illness - reducing perceived difference and increasing social acceptance (Schomerus et al., 2016) or, on an individual basis, talking about current symptoms without referring to identity or a diagnosis (“normalizing talk”) (Estroff, 1991; Goffman, 1963). A similar approach to minimize negative effects of a depression label is to emphasize the malleability of depressive symptoms by environmental factors and individual experience in contrast to biological determination (Lebowitz and Ahn, 2015). On the other hand, taking advantage of group identification by activating a positive social identity within the threatening situation (Kuppens and Yzerbyt, 2012) or helping to build up a “recovery identity” (Buckingham et al., 2013) as well as joining and identifying with mutual help groups can result in better health outcomes (Crabtree et al., 2010).

In summary, how people with a history of depression perceive their ingroup - whether they identify with it, hold it in high or low regard and whether they perceive it as a coherent group - substantially influences their perceptions of stress, competence and control in challenging situations. Future research on depression vulnerability and risk factors should thus incorporate the assessment of social identity and target important open questions: how social identity of being mentally ill develops in the course of mental illness and how it is related to health outcomes as well as relapse risk.

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## Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at <http://dx.doi.org/10.1016/j.psychres.2017.04.021>.

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