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The relation between social identity and test anxiety in university students

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Abstract

Social identification has been shown to be a protective resource for mental health. In this study, the relationships between social identification and emotional, as well as cognitive symptoms of test anxiety are investigated. Participants were university students diagnosed with test anxiety (N = 108). They completed questionnaires regarding a range of psychopathologic stress symptoms, and their social identification with fellow students and with their study program. Results reveal negative relations between social identification and almost all investigated emotional and cognitive symptoms of test anxiety. Based on this study, interventions could be developed that strengthen the social identity of university students.

Keywords

coping, identification, mental health, social identity, test anxiety

Tests and evaluative situations have become a high priority in today's societies and individuals' educational biographies largely determine their career paths and future success. The relevance of exams has increased in the context of the introduction of bachelor's and master's degrees at most European universities since about 2004, which also involve substantially more assessments (Holm-Hadulla et al., 2009). More frequent and more important (in terms of future career prospects) examinations, therefore, increasingly provide stimuli that can evoke test anxiety among university students.

Students who suffer from test anxiety often experience concentration difficulties in exam situations, depressive symptoms, somatic discomforts, and problems in preparing exams (Fehm and Fydrich, 2011). Test anxiety also correlates negatively with academic achievement and can, therefore, lead to an underestimation of individual performance (Cassady and Johnson, 2002). One study found that test anxiety led to lower exam performance mediated by more worry and a proneness to be distracted by irrelevant material (Keogh et al., 2004). Consequences of test anxiety thus are, for instance, prolongation of the study period, increased university drop-out rates, exam failures, and physical and psychological impairments (Köster, Rupp-Freidinger and Dieker-Müting, 2005).

In the recent years, due to these severe consequences, analyzing the nature of test anxiety has become a relevant research topic. Identifying factors that can help the individual cope with test anxiety is, therefore, highly relevant. Social identification with groups has been identified as one of such factors and has been found to be a protective resource relating to mental health in general and depression and anxiety in particular (e.g. Gleibs et al., 2011; Haslam et al., 2016; Haslam and Reicher, 2006).

This study will examine the relations between social identification and emotional and cognitive symptoms of test anxiety in a population of students diagnosed with test anxiety.

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Test anxiety

The two widely established classification systems *DSM* (*Diagnostic and Statistical Manual of Mental Disorders*, American Psychiatric Association (APA)) and ICD (International Classification of Diseases, World Health Organization) do not list test anxiety as a distinct category. This leads to different definitions mentioned in the scientific literature such as, for instance, test anxiety or performance anxiety (Fehm and Fydrich, 2011). Here, we will subsume the different concepts under the label test anxiety. Test anxiety can be defined as the reaction to stimuli that is associated with an individual's experience of test or evaluation situations (Sieber, 1980; Stangier et al., 2006) postulated that test anxiety is characterized by the fear of negative evaluation of fellow individuals, which draws a link between test anxiety and social interactions.

Regardless of the intensity of the experienced test anxiety, empirical studies show that test anxious individuals perform worse and, as far as academic performance is concerned, they often remain below their actual potential (Cassady and Johnson, 2002; Hancock, 2001). In a meta-analysis, Hembree (1988) showed that school performance remained low in children who were test anxious at the end of primary school across all other school stages. Even after leaving school and during studies or training, there still seem to be performance restrictions due to test anxiety. Chapell et al. (2005) showed a negative correlation between academic performance and the experience of test anxiety. This effect was particularly noticeable among first-year students. The long-term consequences of clinically significant test anxiety may be comparable to those of social anxiety disorder (Fehm and Fydrich, 2011). Accordingly, those affected tend to have lower professional qualifications and lower labor productivity (Bögels et al., 2010; Patel et al., 2002). In addition, their socio-economic status and quality of life can be classified as rather low and they are more likely to live alone, unmarried, or divorced (APA, 2013; Fehm and Fydrich, 2011). Furthermore, test anxiety often arises with further profound psychological symptoms. Some of those symptoms represent a comorbid disorder and significantly restrict the functionality of a person's everyday life. In sum, the results of empirical studies indicate that further, far-reaching psychological problems are to be found with existing intensive test anxiety (Beidel and Turner, 1988).

The social identity approach

Membership in groups is a significant feature of human existence. For instance, students have relationships with several social communities, such as friends or university study groups. This membership can be supportive through personal security, intellectual stimulation, and collaborative learning. Belongingness to groups is not only an external factor that influences our behavior, but it also affects our experiences and cognition. Identification with a group can provide an individual with meaning, stability, and purpose, which supports their mental well-being (Haslam et al., 2009). This means that a person's self-concept often depends on the state of the groups that define the self (i.e. in-groups).

Social identity and social identification are closely related. While social identity refers to an individual's perception of a group as a unit that shares characteristics such as norms, relationships to out-groups, and so on, social identification focuses on the strength of the relationship a member has with this specific group (Leach et al., 2008). Researchers adopting a self-categorization perspective to group processes (Turner et al., 1987) propose that group identification relates to positive emotions and cognitions about an in-group and thus also to more supportive behavior among in-group members (see Ellemers and Haslam, 2012). Tajfel (1978) includes this positive evaluation in his definition of social identity. He states that social identity is "that part of an individual's self concept which derives from his knowledge of his membership of a social group (or groups) together with the value and emotional significance attached to that membership" (Tajfel, 1978: 63).

Haslam and Van Dick (2011; see also Van Dick and Haslam, 2012) suggested that social identification with groups helps individuals cope with stress because identification will increase the perception and positive interpretation of social support from other group members and will activate individuals' sense of collective self-efficacy. These hypotheses have been supported by empirical studies (e.g. Avanzi et al., 2015). Furthermore, a recent meta-analysis found positive relations between individuals' identification with their teams and organizations and their health and well-being (Steffens et al., 2017). Other studies have also experimentally manipulated group identity and found causal effects on reduced stress such as lower cortisol responses after performing stressful tasks (e.g. Frisch et al., 2015; Häusser et al., 2012). In a series of three studies, also involving a longitudinal and an experimental study, Greenaway et al. (2016) showed that a gain in social identity led to stronger satisfaction of basic needs (such as the need to belong or the need for control) and need satisfaction in turn was related to lower depression. In addition, studies show the relevance of social identification for coping with stress and anxiety (see, for an integrative review, Cruwys et al., 2014). For instance, Cruwys et al. (2015) conducted two studies and found that individuals with higher social identification suffered less from depressive symptoms and this relation was mediated by different patterns of attribution. More specifically, when social identity was salient, individuals attributed negative events to a lower degree to internal and stable causes. This is useful as an external and less stable attribution of failures (e.g. in an exam) reduces the individual blaming himself or herself—which is particularly relevant in the population of

test anxious students as in our study. (Miller et al., 2015) showed, in a survey study of over 1000 Scottish secondary school students aged 13–17, that stronger social identification with groups (i.e. family, school, and friendship groups) was associated with better mental health. Finally, in an intervention study, Meuret et al. (2016) showed positive effects of group-based cognitive therapy for social anxiety on feelings of closeness to others, which in turn were related to clinical outcomes. In sum, identification with social categories is a predictor of individuals' health and well-being (Haslam et al., 2018).

Based on these theoretical assumptions and previous empirical evidence, we also predict that students' social identification will be negatively related to several symptoms of test anxiety. In our study, we will look at two aspects of identification. We measured how strongly students identify with their university peers, that is, their fellow students. In addition, we measured their identification with the academic program they are enrolled in. We, therefore, tap into identification with other individuals and with a more abstract social category. Specifically, we predict,

H1: Students' identification (with their fellow students and their academic program) will relate to less worrying about exam performance.

H2: Students' identification (with their fellow students and their academic program) will relate to less depressive symptoms.

H3: Students' identification (with their fellow students and their academic program) will relate to lower insecurity in social contacts.

H4: Students' identification (with their fellow students and their academic program) will relate to higher achievement motivation.

Methods

Sampling and selection of participants

The recruitment of the students took place via homepage advertisement, e-mails to students of the University of Mainz, student organizations, services at the University of Frankfurt, and other regional universities as well as the distribution of flyers between September 2013 and November 2014 in both universities. In all, 180 interested students (142 females and 38 males) sent an e-mail to the researchers and were then contacted for diagnostic screening. Inclusion criteria were either a diagnosed social or specific phobia affecting exam/test situations according to *DSM-IV* (*Diagnostic and Statistical Manual of Mental Disorders, 4th ed*, APA). Exclusion criteria were current severe/major depressive episode, moderate depressive episode with attention deficit, or current psychotic symptoms. Students with mild to moderate depressive episodes without attention deficit disorder were included if they were able to pay enough attention to the treatment components offered and other depressive symptoms did not prevent them from participating and benefiting from the treatment on an emotional and cognitive level. Of the 180 interested students, 72 were eliminated ($n = 6$ because of depressive episodes; $n = 28$ because of no social phobia; $n = 19$ missing data; $n = 19$ drop-out). The final sample consisted of $n = 87$ (80.6%) female and $n = 21$ (19.4%) male participants. Of the total sample, 91 percent were of German nationality. Mean age was 27 years (standard deviation (*SD*) = 5.6, range = 20–59).

Procedure

The study was conducted at the Center for Student Counseling at the University of Mainz and the Department of Psychology at the University of Frankfurt between 2013 and 2015.

First of all, potential participants were screened using structured clinical interview for *DSM-IV* Axis I (SCID-I; Saß et al., 2003), which was conducted by trained clinical psychologists. Participants were recruited in the context of a wider study on the effectiveness on test anxiety treatments (see Reiss et al., 2017). At the beginning of this study, they filled in several questionnaires relevant for this article.

Instruments

To measure *social identification*, we adopted the four-item scale by Doosje et al. (1995). Participants were provided with four items measuring their identification with their fellow students (e.g. "I identify with the students of my department") and four items measuring their identification with the respective academic program they were enrolled in (e.g. "I identify with my academic program (e.g. the Psychology program)"). Response options ranged from 0 = "not at all" to 3 = "completely." A factor analysis yielded the expected two factors and both scales showed sufficient internal consistencies (identification with fellow students: $\alpha = .71$; identification with the academic program: $\alpha = .73$).

To measure *worry about performance*, participants completed scales from a German test anxiety survey (PAF; Hodapp et al., 2011). *Worry* was measured with five items (e.g. "I am concerned about my performance") on a 4-point response scale (endpoints 1 = "almost never" and 4 = "almost always") and displayed a satisfactory reliability with Cronbach's α of .77.

To measure specific *psychopathologic stress*, the Brief Symptom Checklist (BSCL-53; Franke, 2017) was used. More specifically, we used two subscales, namely *insecurity in social contact and depression*. Insecurity in social contact was measured with four items (e.g. "Over the last seven days (including today) how much have you

Table 1. Pearson correlations, means, and standard deviations of study variables.

		M	*SD*	1	2	3	4	5	6	7	8	9
1	Gender	0.81	0.40	–								
2	Age	27.26	5.60	−.05	–							
3	Number of semesters	9.18	6.67	−.06	.55**	–						
4	Worry	3.13	0.66	.14	−.20*	−.26**	(.77)					
5	Depression	1.16	0.89	−.06	.15	.14	.09	(.79)				
6	Insecurity in social contact	1.30	1.01	.09	.08	−.07	.23**	.66**	(.77)			
7	Achievement motivation	4.14	0.88	.05	.14	−.02	.29**	−.16	−.17	(.92)		
8	Identification with academic program	4.65	1.23	.15	−.10	−.11	.11	−.21*	−.14	.25**	(.73)	
9	Identification with fellow students	3.60	1.53	.06	−.29**	−.25*	.31**	−.25**	−.28**	.31**	.34**	(.71)

Gender (male = 1, female = 2), semester = number of academic terms completed (in the German system correspond two semesters to one academic year). *N* varied among the Pearson's Correlations from *N* = 104 to *N* = 108. Internal consistencies (Cronbach's αs) are in the diagonal in parentheses.
*$p < .05$, **$p < .01$.

experienced the following feeling that people are unfriendly or dislike you") and *depression* with six items (e.g. "Over the last seven days (including today) how much have you felt that you have no interest in things") on a 5-point response scale (endpoints 0 = "not at all" and 4 = "very much"). Both showed satisfactory consistencies with αs of .77, and .79, respectively.

Finally, students' *achievement motivation* was measured by the achievement motivation inventory (LMI-K; Schuler and Prochaska, 2001) comprising of 30 items (e.g. "My ambition is easy to challenge" and "Difficult tasks stimulate me more than easy tasks"). Participants indicated how often each item applied to them on a 7-point scale (1 = does not apply at all, 7 = fully applies; $\alpha = .92$).

The data are available in the Open Science Framework repository at https://osf.io/vu9j8/.

Results

Statistics Package SPSS version 12 was used to analyze the data.

We conducted descriptive and correlation analyses. Pearson correlations between the identification with fellow students, as well as the academic program, and the applied scales, were conducted to test the hypotheses. Table 1 provides descriptive statistics and scale inter-correlations.

In contrast to Hypothesis 1, we found a significant positive relationship between identification with fellow students and worry ($r = .31$; $p < .001$).

Hypothesis 2 was supported with negative relations between depression and both identification with the academic program ($r = -.21$; $p = .034$) and with fellow students ($r = -.25$; $p = .009$). Hypothesis 3 was also supported with a correlation of $r = -.28$ ($p = .004$) between identification with fellow students and social contact insecurity.

Finally, Hypothesis 4 was supported with positive relations between achievement motivation and both identification with the academic program ($r = .25$; $p = .010$) and with fellow students ($r = .31$; $p < .001$).

When applying Bonferroni corrections because of the multiple testing, the adjusted significance level of $p = .009$ was met in all but two cases, that is, the correlations between identification with fellow students and both depression and achievement motivation only reached marginal significance after adjustment.

Discussion

The social identity approach (Haslam, 2004) has been used before to predict individuals' coping with stress, and empirical research has found correlations between social identity and mental health (e.g. Steffens et al., 2017). Most existing studies on specific populations at risk, however, focused on depression (Gleibs et al., 2011) or studies in laboratory environments (e.g. Haslam and Reicher, 2006). To the best of our knowledge, this is the first study that has looked at the relations between symptoms of test anxiety and students' identification in a sample of students clinically diagnosed with anxiety.

Our results are generally in line with the hypotheses, that is, identification with both the fellow students and the university study program relates negatively to psychopathological symptoms, such as depressiveness and social contact insecurity, and relates positively to achievement motivation. However, and in contrast to our hypothesis, we found a positive correlation between identification with fellow students and participants' *worry*. A possible explanation of this result could be associated with social pressure, which may impact group members. This is particularly true when a threat to one's self-esteem origins from rejection by one's in-group (see Branscombe et al., 1999). This finding may render an alternate explanation of our results; students who suffer from test anxiety might fear negative evaluations from their fellow students because of insufficient grades. This may be particularly true when several

academic exams are arranged as oral examinations in groups of three to four candidates. Consequently, the requirement of the group to perform well in an exam can increase the worries.

The fact that most of our hypotheses were confirmed supports that social identification can be used as a protective resource to enhance mental health. This is perfectly in line with the meta-analysis of Steffens et al. (2017) who also found a positive correlation between group identification and mental health in normal populations of working samples but contributes to the literature by demonstrating that social identification has largely positive effects even in this specific context of clinically diagnosed anxiety sufferers.

We predicted and found that social identification with fellow students was negatively correlated with social contact insecurity. The experienced inferiority and self-depreciation are influenced by the social identification. Moreover, Robins et al. (2001) have shown that increased self-esteem leads to extroverted and conscientious, friendly, emotionally stable behavior, and that the individuals are more open to new experiences. These changes might have a positive effect on individuals suffering from test anxiety; more specifically, it can help with increasing these individuals' confidence level when dealing with social contacts.

The relationship between achievement motivation and social identification has been empirically supported in this specific context and can also be explained in accordance with the social identity approach (Haslam, 2004). Due to adopted objectives and interests of the group, an individual strives to align his or her behavior in that context (Dutton et al., 1994; Van Knippenberg and Van Schie, 2000). In line with these studies, we also found a positive link between identification with the study program and achievement motivation. This relationship turned out to be stronger when identifying with fellow students than the study program.

Limitations

Our study suffers from some limitations, most notably from its cross-sectional and self-report design. However, we used standardized and commonly used scales to assess the various concepts and we are confident that they provide validity. In order to establish causality, future research should look at the relation between the concepts over time. Our study provides first evidence that predictions of social identity theory are also relevant in the contexts of students' test anxiety. Our sample probably resembles the clinical reality in psychotherapeutic counseling centers in the university context. Furthermore, the study included students from different study programs. External validity was ensured through specific selection of participants by the *DSM-IV* based on the structured clinical interview SCID-I; therefore, all participants suffered from manifest test anxiety. Nevertheless, this sample can be described as selective since the results cannot be transferred to other college students or trainees.

Practical implications and future directions

According to the results of this study, to address text anxiety, it might be useful to develop preventive approaches that could enhance programs that already exist in universities. For example, specific group programs may be offered at the beginning of a study program to promote social identity. This could be realized in the context of introductory courses to allow individuals to establish closer contacts with their fellow students. The developed social identity could be used as a resource to alleviate symptoms of test anxiety. Haslam et al. (2016), for instance, have recently provided a useful tool, which can be used to unleash the potential of groups among students to help them to cope with stress. They suggested and tested an intervention comprising of five group sessions in which participants were informed of the benefits of social identity in groups and guided in the creation and utilization of such groups. Haslam et al. (2016) found a significantly improved mental health, well-being, and social connectedness due to the intervention. Furthermore, the improvements in depression, anxiety, stress, loneliness, and life satisfaction were in line with an increase in identification with both their intervention group and multiple groups. One possible way in which identification with groups can reduce anxiety is by changing students' interpretation of exam stress. This would be in line with a recent study by Strack and Esteves (2015) who found that when students interpreted anxiety as facilitative they showed a higher tendency to make challenge stress appraisals. Furthermore, they showed a lower tendency to appraising the stressor as a threat, which in turn was positively related to academic performance.

We have to point out though, that the unexpected positive relation between identification and worry presents a caveat to the generally positive results. Interventions that increase students identification with their groups have thus to pay particular attention to supportive environments in which group members can openly discuss their worries and should feel a degree of psychological safety that does not lead to any feelings of threat.

Future research may also tap into the mechanisms between test anxiety and the outcomes we have studied in this article. It would be interesting—also for practical reasons—to identify whether mechanisms such as concentration difficulties, somatic discomforts, problems preparing for exams, distraction, or other factors serve as mediating processes. Moreover, it would be interesting to explore whether social identification serves as a moderator on the first (i.e. test anxiety on mediators) or second (mediators on outcomes) stage moderator.

In general, we believe that our findings can be fruitful for future research, as well as help practitioners reducing the negative effects of test anxiety. Although the relation between social identification and (more) worrying should be taken serious and explored in further research, the generally positive relations between identification and outcomes measured in this study and in this specific sample are in line with the bulk of research demonstrating positive effects of social identification on people's health and well-being (Haslam et al., 2018). Therefore, increasing students' identification with both their programs and fellow students generally appears to be a promising tool in helping them achieve their objectives.

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