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Psychological distress in students today and 20 years ago

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1. Introduction

Since the 1990's an increase of psychological disorders was observed in the German general population (Jacobi et al., 2015). Whether this development is due to an actual increase of morbidity or only a methodological artefact of modified diagnostic criteria, remains unclear until today. Concerning the situation in German university students, it is unclear, whether the extent of overall psychological distress remained stable over time which is the major issue of the present study.

Benton, Robertson, Tseng, Newton, and Benton (2003) reported an increase of anxiety, depression, suicidal ideation, and personality disorders in help-seeking students in the US as retrospectively reported by clinicians working in a campus counselling center between 1988 and 2001. However, when actual distress levels were considered no significant increases were observable. Similarly, Holm-Hadulla, Hofmann, Sperth, and Funke (2009) found that type and extent of psychological distress in German student clients at a psychotherapeutic counselling center were rather stable between 1993 and 2008. Klug, Strack, and Reich (2013) reported a slight decrease of mental health problems in help-seeking German university students (n=535) between 2006 and 2010. Berger, Franke, Hofmann, Sperth, and Holm-Hadulla (2015) compared two samples of German students from the disciplines medicine and psychology, one was investigated 1994 (n=293) and the other 2012 (n=346). They found, that self-reported mental health problems have significantly decreased and explained the result with several social changes in Germany, e.g. improvement of the general health care situation, greater utilization of today more effective counselling services, and modernized university programs with greater diversity of training schemes and forms of learning and flatter hierarchies. The present study was motivated by the deficient data situation concerning the development of mental health problems in field study populations of students in Germany. The major aim of the present study was to assess the prevalence of psychological distress by means of the Brief Symptom Inventory (BSI) (Franke, 2000, 2016) in students of different courses at different German universities. BSI assessment was conducted in a group setting in the same way as in a prior study carried out at a single university in 1994–1998 which allowed for assessing changes over time. Furthermore, reliability indices of the BSI subscales are reported for both samples, socio-demographic influences on BSI ratings are investigated, and detailed information on the academic disciplines in the new sample of 2013–2014 allowed for a statistical comparison between different groups of students.

2. Methods

2.1. Sample description

Two samples were collected in a repeated cross-sectional design. The first data collection (n=598, 292 male) took place between 1994 and 1998 at the University of Essen with a wide regional catchment area. Male students (average age 25.2 ± 5.2 yrs.) were statistically significant older than females (23.4 ± 3.8 yrs., t=4.93, $p < 0.0001$).

The second sample was collected during the years 2013 and 2014 (n=1659, 719 male).

The two gender groups did not differ in age and duration of studies. There were more men (61.2%) than women (11.2%) studying mathematics, computer sciences, natural sciences, technology or business (*MINT-Business*). More women (62.2%) than men (18.2%) studied social sciences, humanities, education or psychology (*Soc-Hum-Edu-Psy*). 20.6% of the male and 26.6% of the female students studied *medicine*.

Various subjects of study and different universities in North and East Germany were involved and ensure good representativeness for German university students (Franke, 2016). The allocation of study areas was similar in both samples: *MINT-Business*, new sample: 32.8%, old sample: 36.7%; *Soc-Hum-Edu-Psy*, new sample: 43.2%, old sample: 39.7%; *medicine*, new sample: 23.9%, old sample: 23.6%. In the new sample 1.136 (68.5%) students planned a Bachelor or Master degree and 523 (31.5%) planned a diploma or state examination (MINT, Education, Medicine).

2.2. Psychodiagnostic procedure

The Brief Symptom Inventory (BSI) (Franke, 2000, 2016) is the

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short form of the SCL-90-R, a well-validated multidimensional symptom self-report inventory. The 53-items BSI was assessed in a paper-pencil group setting for measuring the subjective perception of psychological distress over a time period of the past seven days. Psychological distress is reflected in nine primary dimensions and three global indices. Clinically relevant psychological distress was defined in case that two T-transformed BSI-scales and/ or the GSI were ≥ T=63. In German speaking countries the BSI is today known as Brief-Symptom-Checklist (BSCL) (Franke, 2016).

2.3. Statistical methods

Data analysis was conducted by PASW SPSS 20. Mean and standard deviation (± SD) were calculated for continuous data. The Kolmogorov-Smirnov-test of normal distribution reported a left skewed distribution which was to be expected in non-clinical samples. Provided the Levene-test resulted in homogeneity of variance, *t*-tests for independent samples and analyses of variance were applied for assessing between group differences.

The present study has been carried out with the approval of the ethics committee of the Faculty of Applied Human Sciences at the University of Applied Sciences Magdeburg-Stendal (AZ 4973-16). There has been no funding of the study and no conflict of interest.

3. Results

Regarding raw scores (Table 1) in the new sample female students reported higher psychological distress in *Anxiety*, *Somatization*, *Interpersonal Sensitivity*, *Obsessive-Compulsiveness*, GSI and PST (η^2 =0.09). There were no age effects in the new sample. Similar gender differences were found in the old sample (η^2 =0.05) with higher distress in females in *Anger-Hostility*, *Anxiety*, *Somatization*, *Interpersonal Sensitivity*, *Obsessive-Compulsiveness*, GSI and PSDI. Younger students (18 – 24 years) reported higher distress (η^2 =0.03) in *Anxiety*, *Somatization*, *Interpersonal Sensitivity*, and *Obsessive-Compulsiveness,* GSI and PSDI.

Average T-Scores in non-distressed and distressed students of both samples are shown in Table 2. According to BSI criteria, 18.4% of students in the new sample and 34.8% of students in the old sample, presented with clinically relevant psychological distress. The amount of psychological distress was significantly higher in the old sample, X^2=66.24, $p < 0.0001$. Regarding the severity of clinically relevant psychological distress in the new sample, there was no difference between students who planned a new degree like Bachelor and Master (n=1.136) or an old degree like diploma or state examination (n=523): 18% (n=94) of the students who planned an old degree and 18.7% (n=212) of the students who planned a new degree reported remarkable psychological distress (X^2=0.11, $p < 0.74$).

Group comparisons between the main study subjects in the new sample (Table 3) revealed that medical and partly education students suffered the most from *Anxiety, Phobic Anxiety, Anger-Hostility, Somatization*, and global distress (η^2 =0.01).

The reliability of the nine scales and the GSI was sufficient to good in the new sample, and better than in the old sample (Table 2).

4. Discussion

While few European studies have shown consistent rates of psychological distress over time (Benton et al., 2003; Holm-Hadulla et al., 2009), psychological distress of today's students in Germany seems to be lower than it was 20 years ago, which is in line with previous findings (Berger et al., 2015; Klug et al., 2013). Possible explanations include improvement of health care and better economic as well as study conditions (Berger et al., 2015). After signing the "Bologna Declaration" an unparalleled reform process of study conditions started in Germany, described by the German University Rectors' Conference and the Standing Conference of the Ministers of Education and Cultural Affairs in the Federal Republic of Germany (German Rectors' Conference, 2016). Several improvements comprise the feasibility of completing a degree program, quality of teaching, as well as increased mobility of students. In fact, the number of German students spending summer schools, whole study periods or internships abroad has considerably increased. This certainly provides unique individual study experiences – implications on student's mental health still need to be investigated. Several modifications of the new study systems were done, tuition fees were often abolished, duration of education to achieve a general matriculation standard was shortened and conscription was abolished, too; general study funding as well as the duration of funding were raised. Ultimately, frequency of changing study programs and early termination both declined (Middendorf, Apolinarski, Poskowsky, Kandulla, & Netz, 2013). The quality of psychotherapy and student-specific counselling programs also improved in the last 20 years (Holm-Hadulla et al., 2009; Klug et al., 2013; Gumz and Erices, 2011).

In the present study, gender differences were observed in both samples with higher psychological distress in female students. In the new group of students, neither age-specific effects nor differences regarding the planned degree (Bachelor, Master and "old" degrees) were found. After establishing the new Bachelor- and Master-system in Germany, an increase in help-seeking students was reported; but study

Table 1
Average BSI mean scores in the new and old samples of students with gender- and age-specific differences.

	NEW SAMPLE 2013–2014 n =1.659				OLD SAMPLE 1994–1998 n =589			
	18–24 y.		25–59 y.		18–24 y.		25–59 y.	
	Male n=514	Female n=742	Male n=205	Female n=198	Male n=169	Female n=200	Male n=123	Female n=97
Anger- Hostility	0.35 ± 0.49	0.39 ± 0.48	0.42 ± 0.59	0.41 ± 0.52	0.51 ± 0.45	0.65 ± 0.58	0.45 ± 0.45	0.57 ± 0.53
Anxiety	0.35 ± 0.50	0.43 ± 0.49	0.34 ± 0.53	0.41 ± 0.51	0.56 ± 0.49	0.65 ± 0.54	0.45 ± 0.57	0.60 ± 0.60
Depression	0.41 ± 0.60	0.41 ± 0.56	0.40 ± 0.60	0.40 ± 0.57	0.56 ± 0.62	0.60 ± 0.65	0.54 ± 0.70	0.51 ± 0.62
Paranoid Ideation	0.37 ± 0.54	0.35 ± 0.50	0.39 ± 0.59	0.29 ± 0.44	0.65 ± 0.61	0.68 ± 0.56	0.58 ± 0.59	0.59 ± 0.59
Phobic Anxiety	0.18 ± 0.42	0.18 ± 0.35	0.23 ± 0.55	0.17 ± 0.38	0.24 ± 0.41	0.24 ± 0.36	0.24 ± 0.54	0.20 ± 0.32
Psycho- ticism	0.28 ± 0.50	0.26 ± 0.41	0.29 ± 0.58	0.25 ± 0.43	0.42 ± 0.51	0.41 ± 0.53	0.33 ± 0.62	0.33 ± 0.50
Soma- tization	0.28 ± 0.48	0.32 ± 0.45	0.27 ± 0.45	0.33 ± 0.47	0.30 ± 0.39	0.37 ± 0.50	0.24 ± 0.34	0.29 ± 0.41
Interpersonal Sensitivity	0.42 ± 0.61	0.62 ± 0.66	0.41 ± 0.55	0.60 ± 0.64	0.86 ± 0.77	1.01 ± 0.85	0.66 ± 0.71	0.85 ± 0.73
Obsessive-Com- pulsiveness	0.61 ± 0.65	0.73 ± 0.65	0.61 ± 0.62	0.70 ± 0.63	0.89 ± 0.64	0.96 ± 0.70	0.70 ± 0.58	0.84 ± 0.67
GSI	0.36 ± 0.44	0.41 ± 0.40	0.37 ± 0.48	0.40 ± 0.40	0.54 ± 0.41	0.61 ± 0.41	0.46 ± 0.46	0.52 ± 0.41
PSDI	1.30 ± 0.61	1.33 ± 0.49	1.29 ± 0.55	1.36 ± 0.47	1.48 ± 0.47	1.57 ± 0.46	1.42 ± 0.54	1.56 ± 0.61
PST	12.22 ± 10.93	14.33 ± 10.15	12.65 ± 11.68	13.48 ± 9.70	17.94 ± 10.19	19.04 ± 9.73	15.98 ± 10.61	16.96 ± 9.70

The Global Severity Index (GSI) refers to the total level of recent self-reported psychological distress (mean value of all item responses). The Positive Symptom Distress Index (PSDI) corresponds to the overall intensity of symptoms, which is the average score of all items scored above zero. The Positive Symptom Total (PST) is the number of items scored above zero.