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Symptomatic Distress and Effectiveness of Psychological Treatments Delivered at a Nationwide Student Counseling Service

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The aim of this study is to investigate the effectiveness of student counseling in Denmark and to compare the symptomatic distress among student counseling clients with that of Danish outpatients. The pre-intervention level of self-reported symptomatic distress among 1256 students closely paralleled that of psychiatric outpatients. Participants in the intervention study were the 739 student clients with two or more counseling sessions. For the 530 (71.7%) participants with both pre- and post-measurements, the mean pre-post Cohen's *d* effect size was 0.76 on the Global Severity Index of the Symptom Check List-90-Revised (Derogatis, 1992). An intention-to-treat analysis of all 739 clients resulted in an effect size of 0.59. The number of recovered clients according to the Jacobson and Truax (1991) criteria was 295 (68.8%) of the 429 (80.9%) clients above the clinical cut-off at pre-intervention, while 66 (12.5%) of the 530 clients reliably deteriorated. The mean number of sessions was 5.0. Individual counseling, number of sessions, and ending counseling in agreement predicted better outcome. In line with results from other countries, this study may indicate that in Denmark student counseling is an effective intervention for a highly needy clientele, even though a high proportion of clients deteriorated (12.5%) or dropped-out (31.7%).

Keywords: university counseling centers, effectiveness, student counseling, student clients' mental health, psychotherapy outcome

Studies have found a high degree of distress and mental disorders among college and university students. A large ($n= 43,210$) representative survey of American undergraduate college students with annual data collection over six years found that 18.2% screened positive on self-rating scales for depression, 10.1% for anxiety, 7.8% reported serious suicidal thoughts, and 16.5% reported non-suicidal self-injury (Ketchen Lipson, Gaddis, Heinze, Beck, & Eisenberg, 2015). Overall, 34.4% of all undergraduates had at least one of the problems mentioned above, and of whom only between 33.9% and 47.0% had utilized a mental health service. In Europe, the most reliable studies from Germany, the UK, Norway, and Sweden showed mental disorder prevalence rates among students between 20% and 25% (Kreß, Sperth, Hofmann, & Holm-Hadulla, 2015). A World Mental Health Survey conducted by the World Health Organization found a prevalence rate of any DSM-IV mental disorder of 20.3% among 1,572 college students from 21 countries, only 16.4% of these students received any kind of treatment (Auerbach et al., 2016). In a review, Brunner, Wallace, Reymann, Sellers, and McCabe (2014) concluded that psychopathology has increased among students and that emotional and behavioral problems have become more complicated. Among 51,567 students seeking counseling in the USA, the most common clinician-rated presenting concerns were anxiety (61.0%), depression (49.0%), and stress (30.8%) (*Center for Collegiate Mental Health, 2017*). In addition, the students' self-reported levels of depression, generalized anxiety, and social anxiety had persistently increased from 2010 to 2016, whereas other areas of distress (academic, eating disorder, hostility, substance abuse, and family distress) remained stable or decreased slightly. Mental health problems among students are thus highly prevalent and undertreated.

Several studies have found a relationship between depression and academic underperformance (Andrews & Wilding, 2004; Auerbach et al., 2016; Eisenberg, Golberstein, &

Hunt, 2009; Hysenbegasi, Hass, & Rowland, 2005). Other studies indicate that mental health and social adjustment are more related to academic success than academic ability or prior academic achievements (Gerdes & Mallinckrodt, 1994; Rummel, Acton, Costello, & Pielow, 1999). The National College Health Assessment published by the American College Health Association surveyed 137 institutions with 95,761 students and found that the top four self-reported factors affecting academic performance within the last 12 months were stress (31.8%), anxiety (23.2%), sleep difficulties (20.7%), and depression (15.4%) (ACHA-NCHA-II, 2016). Wilson, Mason, and Ewing (1997) surveyed 562 student counseling clients and found that counseled clients had higher retention rates in their studies than non-counseled (waitlist or no-show). Turner and Berry (2000) reported that 2,365 counseling clients from a Western state university showed superior retention rates compared with peers who did not receive counseling. By helping students with their personal problems, counseling may also improve the distressed students' academic performance and prospects of completing their studies.

The need for student counseling facilities is generally recognized, and counseling centers have been established in worldwide, albeit to a varying degrees (Martin, 1996). Two-thirds of the European countries report that higher education institutions provide "psychological guidance service" (European Commission/EACEA/Eurydice, 2015). In North America, the National Survey of 275 College Counseling Centers found that the ratio of counselors to students was, on average, 1 to 2,081 and that 11% of the students sought counseling during the year (Gallagher, 2015). The International Association of Counseling Services' standards (2011) recommend a staffing ratio of one counselor for every 1,000-1,500 students.

The Danish Student Counseling Service is a public institution established in 1965, today with counseling centers or clinics in the seven main university cities in Denmark. Thirty-three

counselors offer counseling free of charge for around 5,500 students a year. The counselor-to-student ratio is around 1 to 8,000, and about 2% out of 267,796 higher education students seek help at the Counseling Service every year. Counseling is offered to students with personal problems such as low self-esteem and minor mental disorder (e.g., depression and anxiety), study-related problems (e.g., exam anxiety and difficulties writing a thesis), and problems concerning social security laws. Students having more severe mental disorders are referred to psychiatric treatment. The overall goal of the Danish Student Counseling Service (2016) is to help students become well-functioning students who complete their studies without unnecessary drop-out or prolongation.

Like many other public institutions and organizations, student counseling centers are increasingly being requested to document outcome. Meta-analyses show that evidence-based psychological interventions for depression (Cuijpers et al., 2015), and general stress problems (Regehr, Glancy, & Pitts, 2013) are efficacious also for college and university students. Other meta-analyses indicate that students benefit from interventions directed at test anxiety (Ergene, 2003), and alcohol abuse (Carey, Scott-Sheldon, Garey, Elliott, & Carey, 2016; Samson & Tanner-Smith, 2015), and from preventions programs for students at risk of developing mental health problems (Conley, Shapiro, Kirsch, & Durlak, 2017). Furthermore, numerous studies have used the student counseling setting to investigate a broad range of clinical issues, e.g., feedback, therapist effects, dose-effect relationships, the effect of specific psychotherapy approaches, and psychometric measures (see, for examples, Minami et al. (2009)). Other studies have focused on psychotherapy outcome for specific groups, e.g. ethnic minorities (Lockard, Hayes, Graceffo, & Locke, 2013), or sexual minorities (Efrigg, Maloch, McAleavey, Locke, & Bieschke, 2014). However, only a few studies have evaluated the overall effectiveness of counseling for higher

education students in routine clinical practice and several researchers have questioned whether treatment in natural clinical settings are effective at all (Hansen, Lambert, & Forman, 2002; Stone, Vespia, & Kanz, 2000; Weisz, Ugueto, Cheron, & Herren, 2013).

In the following, only studies with pre and post-intervention symptom measures, more than one therapist and 30 clients, less than 50% trainee therapists, and information about effect size (ES) or descriptive data making it possible to calculate an ES, are included. In a systematic review from 2006, Connell, Cahill, Barkham, Gilbody, and Madill identified only one study by Vonk and Tyrer (1999) fulfilling these criteria. A literature search identified nine more recent studies: four studies from the USA (McAleavey et al., 2017; Minami et al., 2009; Nordberg, Castonguay, McAleavey, Locke, & Hayes, 2016; Talley & Clack, 2006), two from the UK (Connell, Barkham, & Mellor-Clark, 2008; Murray, McKenzie, Murray, & Richelieu, 2016), two from Italy (Monti, Tonetti, & Ricci Bitti, 2013; Strepparava & Bani, 2016), and one study from Germany (Sperth, Hofmann, & Holm-Hadulla, 2014). Eight of these studies reported a mean number of sessions between 4 and 11, while the Italian study by Monti et al. (2013) had a mean of 40 sessions. The studies showed moderate-to-high pre-post effect sizes (ESs) with Cohen *d*-values between 0.54 and 1.57 on self-reported symptoms. However, as these studies differ with regard to outcome measures, counseling approach, mean number of sessions, and sample (e.g. pre-intervention severity, number of missing data and criteria for including cases in calculation of effect size), they are difficult to synthesize. Minami et al. (2009) conducted a meticulous benchmark study comparing 2,672 clients from a large Western public university counseling center with a meta-analytically derived benchmark for psychotherapy with depressive patients (Minami, Wampold, Serlin, Kircher, & Brown, 2007). Minami and colleagues (2009) argued that it is reasonable to compare ESs from student counseling services with ESs from clinical trials,

since no reliable benchmarks of psychotherapy effectiveness in student counseling services exist, and since efficacy estimates from clinical trials are considered the “gold standard” in psychotherapy research. They concluded that the magnitude of the center’s ES of 0.98, obtained from student clients with pre-treatment levels of psychological distress above the clinical cut-off value, was equivalent to treatment efficacy observed in clinical trials for adult patients with major depressive disorder. McAleavey et al. (2017) used the benchmark method from Minami et al. (2009), included 9,895 clients from 108 university counseling centers and found that clients who enter treatment distressed undergo improvement in symptom severity equal to that of clients participating in RCTs. With the exception of Minami et al. (2009), who, because of session-by-session outcome measurement, probably had measures on all participants with two or more sessions, the studies reported completer analysis including all participants with pre and post-intervention outcome data.

Many moderators have been researched within psychotherapy and counseling, although often with inconsistent results. Treatment length has been associated with better outcome (e.g. Draper, Jennings, Baron, Erdur, & Shankar, 2002; Howard, Kopta, Krause, and Orlinsky, 1986; Orlinsky, Grawe & Parks, 1994). In a meta-analysis on psychotherapy for depression, Cuijpers, Huibers, Ebert, Koole, and Andersson (2013) found that intensifying treatment from one to two sessions per week increased the ES with 0.45. Connell et al. (2008) showed that unplanned endings of therapy predicted lower outcome among student counseling clients. Individual therapy has sometimes (Cuijpers et al., 2015), but not always (Burlingame et al., 2016), achieved better results than group therapy. Many studies have investigated the relation between therapeutic approach and outcomes; most often, however, with insignificant findings (e.g., Stiles, Barkham, Mellor-Clark, & Connell, 2008). Client demographic and personality variables are also

well researched as moderators of psychotherapy outcome, although results have been inconsistent (Bohart & Wade, 2013).

The aim of the present study is to investigate the effectiveness of counseling in the Danish Student Counseling Service and to compare the symptomatic distress among student counseling clients with that of patients from a large Danish psychiatric outpatient center. Furthermore, the following ten possible moderators of treatment outcome are explored: number of sessions, placement on a waitlist, number of days between each individual session, ending counseling in agreement between counselor and client, individual vs. group counseling, counselor's therapeutic approach, the specific clinic where counseling took place, client age, gender and personality structure.

Method

Student Counseling Participants

The Danish Student Counseling Service offers counseling free of charge to students from all universities, university colleges and business academies in Denmark. The central office of the Service is situated in Copenhagen. There are four counseling centers in the main university cities, Copenhagen, Aarhus, Odense and Aalborg, and four additional local clinics situated at specific universities or colleges in Roskilde, Esbjerg, Kolding, and Horsens. At three of the four counseling centers, a part-time psychiatrist is employed. Diagnostic interviews are not carried out at the centers, but the clients' primary presenting problems are noted by the counselors, the most frequent ones being depression (42.9%), stress (42.9%), concentration problems (41.2%), self-esteem problems (35.4%), and anxiety (30.3%). During the study period from 15th September to 15th December, 2014, 1,427 students self-referred to the service, and 1,256 filled

out measures at pre-intervention. The profiles of these 1,256 students, based on the Symptom Checklist 90-Revised (SCL-90-R), were compared to those of psychiatric outpatients.

Participants in the intervention study were the 739 clients having had two or more counseling sessions. The primary data analyses were conducted on 530 (71.7%) clients with both pre and post-intervention measurements (see Figure 1). Clients were referred to another treatment if the counselor assessed them not suitable for the brief counseling offered due to, for instance, more severe mental disorders, suicidal risk, or substance abuse.

Outpatients

The outpatient comparison group was all 3,253 patients who in 2014 completed a treatment at the outpatient Psychotherapeutic Centre, Stolpegaard, Copenhagen. Stolpegaard offers publicly funded psychotherapy to patients with non-psychotic mental disorders in the Danish Capital Region. The mean age of the outpatients was 32.2 years (SD = 10.9) and 2,799 (86.0%) were women. Initial clinician-administered diagnostic interviews at the Center classified 492 (15.2%) with depression, 1,454 (44.8%) with anxiety disorders, 972 (30.0%) with eating disorders, and 327 (10.1%) with personality disorders (data provided by the second author).

Intervention

The interventions were short-term individual or group counseling focusing on the current problems of the clients. Group counseling was offered for problems to which group processes were judged to facilitate solutions, for example, exam anxiety, difficulties writing thesis, difficulties speaking in public and difficulties in close relationships.

The mean number of counseling sessions was 5.0 ($n = 530$, $SD = 3.2$, mode 2, range 2-23). Two-thirds of the participants had less than six sessions and 95.0% had less than eleven sessions. A large majority of 483 participants (91.1%) received individual counseling with a mean number of 4.5 sessions ($SD = 2.4$, mode 2, range 2-17), while 47 (8.9%) received group counseling with a mean number of 7.5 group sessions ($SD = 3.8$, mode 7, range 2-17) and a mean number of 2.5 ($SD = 1.7$) prior individual sessions. After the intake assessment in the first session, 179 (33.8%) were placed on a waiting list for an average of 59.8 ($SD = 34.2$) days. The average number of days between the first and the last counseling session (minus the waitlist period) was 94.0 ($SD = 74.1$) for all 530 participants with an average of 26.2 ($SD = 15.2$) days between each session (calculated for the 518 participants with at least 2 sessions after the waitlist period). One hundred and twenty-five participants (23.6%) changed counselor during their intervention, most often after the first session. Twenty-three (4.4%) participants were given a supplementary psychiatric assessment.

Twenty-one of the 33 counselors hold an MSc in psychology and 12 a BA in social work. The counselors had between 1.5 and 35 years of experience in counseling or psychotherapy with a mean of 17.2 ($SD = 9.9$) years. The counselors received group supervision two hours a month and they had 1.5 hour weekly case conferences focusing on client assessment and difficult cases. According to the counselors' self-reported therapeutic orientation, eight worked within a cognitive-behavioral approach, seven within a psychodynamic approach, one within a narrative approach, while 17 described their approach as eclectic.

Measures

Symptom Check List-90-Revised (SCL-90-R; (Derogatis, 1992)). The SCL-90-R is a widely

used 90-item symptom scale with each item rated from 0-4. The scale has nine subscales focusing on common mental symptoms: somatization, interpersonal sensitivity, depression, anxiety, phobic anxiety, obsession-compulsion, hostility, paranoid ideation and psychoticism, as well as a general distress score, the Global Severity Index (GSI), which served as the primary outcome measure in this study. The SCL-90-R has acceptable psychometric properties (Derogatis, 1992) with some support for its nine dimensions in confirmatory factor analyses (Arrindell, Barelds, Janssen, Buwalda, & van der Ende, 2006; Meijer et al., 2011). The SCL-90-R has been translated and psychometrically evaluated in a representative Danish community sample (Olsen, Mortensen, & Bech, 2004). A Mokken analysis of homogeneity found acceptable unidimensionality for all subscales (Loevinger's coefficient $H = .40-.52$), except psychoticism ($H = .31$) (Olsen et al., 2004). In the present study, internal reliability pre-intervention was high for GSI (Cronbach's $\alpha = .96$) and acceptable for all subscales ($\alpha = .75-.88$), except psychoticism ($\alpha = .69$).

Operationalized Psychodynamic Diagnosis, Structure Questionnaire Short version (OPD-SQS; Ehrental, Dinger, & Schauenburg, 2015). The OPD-SQS measures the availability of mental functions for the regulation of the self and its relationship to internal and external objects on a 12-item self-report scale with each item rated from 0-4 (Tann, 2008, p. 225). The OPD-SQS has a total mean score called "structure" and three subscales; only the structure scale was used in this study. The OPD-SQS has been used as a screening instrument to support clinical decisions about type and length of psychotherapy (Ehrental et al., 2015). Its psychometric qualities have been investigated in a non-clinical German sample and three German patient samples with good internal reliability for the structure scale ($\alpha = .87-.89$) (Ehrental et al., 2015). In the present study internal reliability for the structure scale was also found to be high ($\alpha = .85$).

Study questionnaire (SQ). The SQ with eight questions was developed for this study to get information about the clients' academic and social functioning. The first two questions asked the clients how they were doing academically and socially, respectively, in their study, rated on five-point Likert scales from 0 = very poor to 4 = very good. Two further questions with yes/no answers inquired whether the clients were delayed in their study and whether they considered study drop-out. The next two questions asked about the reasons for study delay and considerations about dropping out; four fixed answer categories were provided: (1) personal difficulties, (2) academic difficulties, (3) social or economic difficulties, and (4) personal choice. In the post-intervention edition of the questionnaire, two further questions asked clients with delay or considering drop-out to which degree the counseling had prevented further study delay and helped them stay enrolled in the study, rated on a five-point Likert scale from a "very small degree" to a "very large degree".

Procedure

Data were collected pre and post-intervention. All measures were administered electronically by an online data collection platform. Pre-intervention, the scales were e-mailed to the clients who were asked to fill out the measures prior to their arrival at the Counseling Center. When the client arrived at the Center, a secretary would check if measures had been completed and, if not, the clients were asked to do so using a tablet. At post-intervention the counselor handed out the measures to be filled out on a tablet immediately after the final session. If post-intervention measures were not filled out at the Center, they were e-mailed to the clients. Up to four reminders were e-mailed to non-responders.

The participants gave informed consent to participation in the study. The study was conducted in accordance with the standards from the regional ethical committee and approved by the Danish Data Protection Agency.

Statistical analysis

Differences between included and excluded participants were analyzed by using independent sample t-tests for continuous variables and chi-square tests for categorical variables.

Missing item-level data on SCL-90-R and OPD-SQS were handled by mean substitution according to the recommended strategy for SCL-90-R (Derogatis, 1992). Mean substitution is generally acceptable in the case of few missing items (Schafer & Graham, 2002). Only 16 items in total were missing on the SCL-90-R and none on the OPD-SQS and the SQ in the sample for the primary outcome analyses.

Psychometric values from the Danish community sample (Olsen et al., 2004) were used to calculate T-scores on the SCL-90-R for comparison between the students at the Counseling Service and the outpatient sample from Stolpegaard. The independent sample t-test was used to test for differences in mean GSI between the students and the outpatients. The primary outcome analyses were conducted on the 530 participants with two or more sessions and post-intervention outcome data (“completer analysis”). A supplementary intention to treat (ITT) analysis was conducted on the GSI for the whole group of 739 participants, with two or more sessions, carrying pre-intervention data forward to post-intervention (corresponding to zero change).

Outcomes were analyzed with paired t-tests. ESs were calculated as the standardized mean difference between pre- and post-intervention measures based on the SD difference score

(a variant of Cohen's d ; Borenstein, Hedges, Higgins, & Rothstein, 2009). Cohen (1988) suggests that small, medium and large ESs are constituted by d -values of 0.2, 0.5, and 0.8, respectively.

The number of clients with statistically (or reliably) and clinically significant change on the GSI was calculated according to Jacobson and Truax's (1991) criteria: (1) The pre-post change has to be statistically significant in surpassing the reliable change index (RCI), and (2) the client's score must change from above to below the cut-line between clinical and non-clinical norms. In the calculations, psychometric values and non-clinical norms were taken from the Danish community sample (Olsen et al., 2004) and clinical norms from the outpatient sample from Stolpegaard. The RCI and the clinical cut-off line were calculated to be 0.21 and 0.83, respectively. Based on the calculations, participants may be classified as recovered (clinical and reliable change), improved (only reliable change), not reliably changed, or reliably deteriorated.

Moderation analyses were conducted by use of ANCOVAs and regression analyses with post-intervention GSI scores (corrected for pre-intervention values) as criterion variables. Post hoc analysis with simple contrast and Bonferroni correction was used to test for difference between pairs of groups. ESs were calculated as partial eta squared (partial η^2) in the ANCOVAs and as change in R^2 (ΔR^2) in the hierarchical regressions. Partial η^2 and ΔR^2 is the proportion of variance that a variable explains that is not explained by the other variables. A small, medium and large ES is constituted by Partial η^2 and ΔR^2 values of .01, .06, and 0.14, respectively (Cohen, 1988).

Results

Participant flow

A total of 1,427 students self-referred to the Student Counseling Service in the study period;

1,256 (88.0%) filled out the pre-intervention measures (see Figure 1). 453 (31.7%) did not show up for the first session or ended counseling by cancellation or failing to appear. Of the 739 clients who received two or more sessions, 530 (71.7%) filled out both pre and post-intervention measures and they were included in the primary data analyses. Out of these 530 clients, 372 (70.2%) ended counseling in agreement between counselor and client, 94 (17.7%) were further referred to or had started in another treatment, and 64 (12.1%) ended counseling by cancellation or failing to appear.

*** Insert Figure 1 about here***

Characteristics of the participants

Participant characteristics are seen in Table 1. For the whole group of 1,256 student counseling clients with pre-intervention measures the mean age was 25.4 (SD = 4.7) and 922 (73.2%) were women. Ninety-nine (18.7%) clients had previously received counseling at the Student Counseling Service. According to Jacobson and Truax's (1991) definition of clinical caseness, 1,003 (79.9%) of the clients had a GSI score above the clinical cut-off, hence at pre-intervention four out of five student clients resembled outpatients more closely than the general Danish population. Three hundred and sixty-eight (37.2%) reported that they were delayed in their studies and 261 (24.9%) considered dropping out of their studies. A majority of 235 of these clients (63.9%) reported personal problems as a reason for their study delay and 215 (82.4%) reported that they considered dropping out due to personal problems (e.g., anxiety, stress, depression, or interpersonal difficulties).

*** Insert Table 1 about here***

Independent sample t-tests revealed that there was no difference in age $t(1,254) = 1.81$, $p = 0.071$, baseline symptom severity $t(1,254) = 0.07$, $p = 0.947$, number of clinical cases $\chi^2(1) = 0.673$, $p = 0.412$, or personality structure $t(1,253) = 0.43$, $p = 0.664$ between the 530 clients included and the 726 clients excluded from the analysis. Clients excluded from the primary analysis were significantly more likely to be men $\chi^2(1) = 10.23$, $p = 0.001$; those reporting that they were delayed in their study $\chi^2(1) = 4.993$, $p = 0.025$; and those who had considered to drop out of their study $\chi^2(1) = 18.306$, $p < 0.001$ (see Table 1).

Figure 2 shows the mean T-scores on the SCL-90-R for the 1,256 student counseling clients compared to those of the 3,253 psychiatric outpatients from Psychotherapeutic Centre Stolpegaard. Student clients' symptomatic distress was quite similar to that of the outpatients. The student clients' mean GSI T-score was 70.2, that is 2 SD above the Danish community norms, and only marginally lower than the T-score of 71.4 for outpatients, $p = 0.003$, $d = 0.09$.

*** Insert Figure 2 about here***

Outcome

Table 2 presents the outcomes and ESs for the 530 student counseling clients. The pre- and post-intervention GSI mean was 1.32 (SD = 0.55) and 0.91 (SD = 0.60), respectively, with an *ES* of 0.76 (SE = 0.02). The 429 (80.9%) clients with pre-counseling GSI scores above clinical cut-off according to Jacobson and Truax's criteria had an *ES* of 0.89 (SE = 0.03) on GSI. For the nine SCL-90-R subscales, ESs were between 0.32 and 0.82, lowest for paranoid ideation and highest for depression. ITT analysis, including all 739 clients receiving at least 2 sessions, resulted in an *ES* of 0.59 on GSI (SE = 0.02).

*** Insert Table 2 about here***

Number of participants experiencing changes

The number of reliably improved participants was 341 (64.3%), 66 (12.5%) reliably deteriorated, and 123 (23.2%) did not change. Of the 429 participants with pre-intervention GSI scores above the clinical cut-off, 295 (68.8%) had recovered after the intervention.

Self-reported functioning

Generally, there were small changes from pre to post-intervention on the SQ. *Academically*, 137 participants (25.8%) reported some improvement after the intervention (with a mean change of 1.1 scale points), 323 (60.9%) reported no change while 70 (13.2%) reported a decline. *Socially*, 130 (24.5%) reported some improvement after the intervention (with a mean change of 1.2 scale points), 315 (59.4%) reported no change while 85 (16.0%) reported a decline. However, of the 155 who pre-interventional reported a delay in their study, 72 (46.5%) stated after counseling that this had to a “large degree” or “very large degree” prevented further study delay. Of the 167 who reported that they considered study drop out, 106 (63.5%) reported that counseling had helped them stay enrolled in their study to a “large degree” or a “very large degree”.

Moderators

Three of the ten investigated moderators predicted outcome on the GSI after controlling for pre-intervention value. Individual counseling resulted in better outcome than group counseling, $F(1, 527) = 9.153, p = 0.003, \text{partial } \eta^2 = .017$. The number of sessions attended was associated with

better outcome, both for individual, $b = -0.018$, $SE = 0.009$, $p = 0.049$, $\Delta R^2 = 0.005$, and group counseling, $b = -0.053$, $SE = 0.020$, $p = 0.010$, $\Delta R^2 = 0.115$. Ways of ending counseling moderated outcome, $F(2, 526) = 13.278$, $p < 0.001$, partial $\eta^2 = .048$. Post hoc analyses revealed that ending counseling by agreement between counselor and client ($n = 372$, $M_{gsi} = 0.83$) predicted better outcome than ending counseling by client cancellation or failing to appear ($n = 64$, $M_{gsi} = 1.04$, $p < 0.001$), and referred to or started in another treatment ($n = 94$, $M_{gsi} = 1.15$, $p < 0.001$).

None of the other moderator variables significantly predicted outcome: gender, $F(1,527) = 1.585$, $p = 0.209$, partial $\eta^2 = 0.003$; age, $b = 0.002$, $SE = 0.005$, $p = 0.692$, $\Delta R^2 = 0.001$; being placed on a waitlist (yes [$n = 138$] and no [$n = 345$]), $F(1,480) = 1.296$, $p = 0.256$, partial $\eta^2 = 0.003$; number of days between each individual counseling session, $b = 0.000$, $SE = 0.001$, $p = 0.634$, $\Delta R^2 < 0.001$; personality structure measured by OPD-SQS, $b = 0.058$, $SE = 0.035$, $p = 0.095$, $\Delta R^2 = 0.004$; counselors' self-reported therapeutic approach (cognitive-behavioral [$n = 166$] psychodynamic [$n = 119$] and eclectic [$n = 220$]), $F(2, 501) = 1.050$, $p = 0.351$, partial $\eta^2 = 0.004$; or Center where the counseling took place (Copenhagen/Roskilde [$n = 245$], Aarhus/Aalborg [$n = 174$] and Odense [$n = 111$]), $F(2, 526) = 0.860$, $p = 0.424$, partial $\eta^2 = 0.003$.

Discussion

This study found that the Danish Student Counseling Service was effective in relieving symptomatic distress in highly distressed student clients. The students' symptomatic distress was quite similar to that of the Danish outpatient sample and around 2 SD above the Danish

community norms, with 79.9% of the students scoring above clinical cut-off at pre-intervention. This is in line with international findings of a high level of self-reported symptoms among student counseling clients being either equivalent to or slightly less symptomatic than adult outpatients (Johnson, Ellison, & Heikkinen, 1989; Michel & Drapeau, 2003; Todd, Deane, & McKenna, 1997) and young people presenting in National Health Services (NHS) primary care (Connell et al., 2007).

We found a moderate to large pre to post-intervention ES of 0.76 on GSI in the completer analysis and a moderate ES of 0.59 in the ITT analysis. As stated in the introduction, ESs were based on completer analyses in eight of the nine previously reported naturalistic student counseling outcome studies and ranged from 0.54 to 1.57. The ES found in this study is in the middle range of those prior findings. The previous studies are, however, difficult to compare. The most meticulous study by Minami and colleagues (2009) had outcome measures on all clients receiving two or more sessions and obtained an ES of 0.98 from the 70.3% of the clients with pre-intervention level of psychological distress above clinical cut-off; an ES comparable to that found in clinical trials of psychotherapy for adult patients with major depression. The average number of sessions in the study was 6.84. The benchmark study by McAleavey et al. (2017) included 9,895 clients and found that clients who enter treatment distressed undergo improvement in symptom severity equal to that of clients participating in RCTs. In the present study, the ES for the 429 (80.9%) clients above clinical cut-off at pre-intervention was 0.89 with an average of 5.0 sessions. Even the ITT ES of 0.59 is about four times as large as the waitlist control benchmark ES of 0.149 obtained from depressive patients in Posternak and Miller (2001) used by Minami et al. (2009). Thus, the ES found in this study is well beyond natural remission

and quite in line with that found in the benchmark studies by Minami et al. (2009) and McAleavey et al. (2017).

Among the 429 clients above the clinical cut-off, 295 (68.8%) recovered with both statistically and clinically significant GSI pre-post change. Two of the eight naturalistic student counseling studies also reported the number of clinically significant changed clients in accordance with Jacobson and Truax's (1991) criteria. Connell et al. (2008) found that 69.2% of the clients above clinical cut-off recovered, whereas Murray, McKenzie, Murray, and Richelieu (2016) reported that 49% recovered. In contrast, Hansen, Lambert, and Forman (2002) found that, on average, only 14.1% (range 8.6–20%) recovered in routine clinical practice including six clinics and more than 6,000 clients. Thus, the percentage of recovered clients in the present study was in the high end of the heterogeneous findings in previous studies.

The number of reliably deteriorated clients was 66 (12.5%) in the present study. Connell et al. (2008) found that only 3 clients (1.2%) deteriorated reliably, whereas Murray, McKenzie, Murray, and Richelieu (2016) reported that 5 (2%) deteriorated reliably. Hansen, Lambert, and Forman (2002) found an average of 8 % (range 3-14%) deteriorated cases in routine clinical practice. They argue that, on average, patients in routine practice do not get adequate exposure to psychotherapy. The average number of 4.3 sessions in Hansen, Lambert, and Forman's (2002) study is quite in line with the average number of 5.0 sessions in the present study where only 5% received more than 10 sessions. Even compared to routine clinical practice, the number of deteriorated cases in the Danish Student Counseling Service was high.

Three of the ten moderation analyses revealed significant results. Firstly, the outcome of individual counseling was better than the outcome of group counseling. This result is consistent with Cuijpers et al.'s (2015) meta-analytic finding that individual therapy was more effective

than group therapy in alleviating depressive symptoms in students. However, our results should be considered with caution, since only 47 clients received group counseling. Secondly, the number of sessions was positively related to outcome, with moderate ES for group counseling ($\Delta R^2 = 0.115$) and very small ES for individual counseling ($\Delta R^2 = 0.005$). Although other studies have found a positive dose-effect relationship between number of sessions attended and outcome of counseling, e.g., Draper et al. (2002), most naturalistic studies have supported the Good Enough Level (GEL) model (Barkham et al., 2006), with doses of therapy adjusted to client needs. Thus, in a large sample of 13,664 clients, primarily from counseling centers, Owen Adelson, Budge, Kopta, and Reese (2016) showed that the slightly positive dose-effect relationship was better explained by the GEL model. Thirdly, the moderation analysis revealed that counseling ended by client's cancellation or failing to appear resulted in a lower outcome than those ending in agreement between counselor and client. Connell et al. (2008) also found a lower outcome for counseling with an unplanned ending. Almost 30% of the participants in our study, 40% in the study by Connell et al. (2008), and about 32% of 10,469 clients in the 2016 annual report from the *Center for Collegiate Mental Health* (2017) ended counseling unplanned. Thus, the drop-out rate in student counseling services is higher than the about 20% found in the psychotherapy literature (Swift & Greenberg, 2012).

None of the seven other analyses of moderators (placement on a waitlist, number of days between each individual session, therapist's therapeutic approach, the specific clinic where counseling took place, client age, gender, and personality structure) revealed significant results. Generally, moderator studies with client demographic or personality variables have given very few consistent results (Bohart & Wade, 2013). The finding that counselor's therapeutic approach

was not related to outcome is also in line with that of other naturalistic outcome studies (e.g. Stiles et al. 2008).

The Student Counseling Service in Denmark may face a number of challenges. The counselor-to-student ratio of around 1 to 8,000 in the Danish Student Counseling Service is low compared to that of other comparable countries and much lower than the standards of the International Association of Counseling Services (2011) which recommend a ratio of 1 to 1,000-1,500. The Service has experienced a 25% decrease in resources per enrolled student from 2009 to 2014, mainly as a consequence of an extension of the target group to cover all students at higher educations in Denmark but also as a consequence of the increased intake of students at the higher educational institutions. This increase in the target group has, however, not affected the number of counseled students: in 2014 a total of 5,440 students received counseling at the Service compared to 5,376 in 2009. Thus, the percentage of potential untreated students in the target-group has grown. Other matters of concern for the Student Counseling Service may be that almost one third of the clients ended counseling by cancellation or failing to appear and that a rather high proportion of clients deteriorated (12.5%). Furthermore, 33.8% of the student clients were placed on a waitlist and the time-period between each sessions was rather long ($M = 26.2$ days). Erekson, Lambert, and Eggett (2015) found that higher session frequency resulted in faster recovery in an investigation of 21,488 student clients. It is generally recognized that early access to treatment for psychological problems is advantageous both for the individual and for society. This was the major reason for the NHS' initiative in the UK for "Improving Access to Psychological Therapies" (IAPT).

The severity of the students' symptomatology found in this and other studies creates a dilemma for the counseling services, which were originally chartered to offer counseling or brief

psychotherapy to help students deal with situational and developmental problems. Even though student counseling has been established in many countries, mental health problems among students are undertreated, even in the USA where the service is rather well-founded. The present study adds to growing international evidence of routine student counseling being effective for students receiving help. Student counseling may be an available and affordable first-line treatment facility for students, probably preferred by most over private practice or outpatient psychiatric treatment. Furthermore, student counseling services may be especially tuned in to help students due to the services' unique experiences with dealing with common-life and academic problems among university students. Thus, the present study may contribute to the growing knowledge base about benefits of and challenges facing student counseling all over the world.

The present study has several limitations. The absence of a passive control group hinders stringent conclusions about whether change can be attributed to the intervention. However, pre-post ESs were in line with those found in the large benchmark study by Minami et al. (2009), and well above those achieved by waitlist controls in psychotherapy research with depressive patients (Posternak & Miller, 2001). This suggests that the counseling per se may have improved clients' symptomatic distress beyond natural symptom remission. All the measures were based on self-report and thus no information was available regarding students' psychiatric diagnoses or actual study functioning. There was also a high degree of non-completion of outcome questionnaires, especially among clients ending counseling by cancellation or failing to appear. This study is, however, one of the first student counseling studies that fully reports participant flow and adds an ITT analysis to the completer analysis.

Conclusion

The study showed that, at pre-intervention, the Danish Student Counseling clients had a high level of symptomatic distress quite similar to that of a Danish psychiatric outpatient sample. Four out of five clients were within clinical range. The ES (Cohen's *d*) of the, on average, five-session intervention was 0.76 on the Global Severity Index of the Symptom Check List-90-Revised (Derogatis, 1992) for the 530 participants with at least two sessions and pre- and post-intervention measures, 0.89 for the 429 clients above the clinical cut-off at pre-intervention, and 0.59 in an ITT analysis for all 739 participants with two or more sessions. These results are in the middle range of those achieved in the nine previous pre- post-intervention studies on student counseling outcome, including two large US benchmark studies by Minami et al. (2009) and McAleavey et al. (2017). Consequently, the present study adds to the growing evidence of counseling being effective in natural clinical settings. Better outcome was predicted by counseling ending in agreement between counselor and client, individual counseling, and a higher number of sessions. The rather high proportion of clients deteriorated (12.5%), a drop-out rate of almost one-third, waitlist placement for one-third of the clients, and the high number of days between each session ($M = 26.2$) may be matters of concern for the Danish Student Counseling Service. We hope, that this study can stimulate more research on moderating and mediating variables in student counseling.

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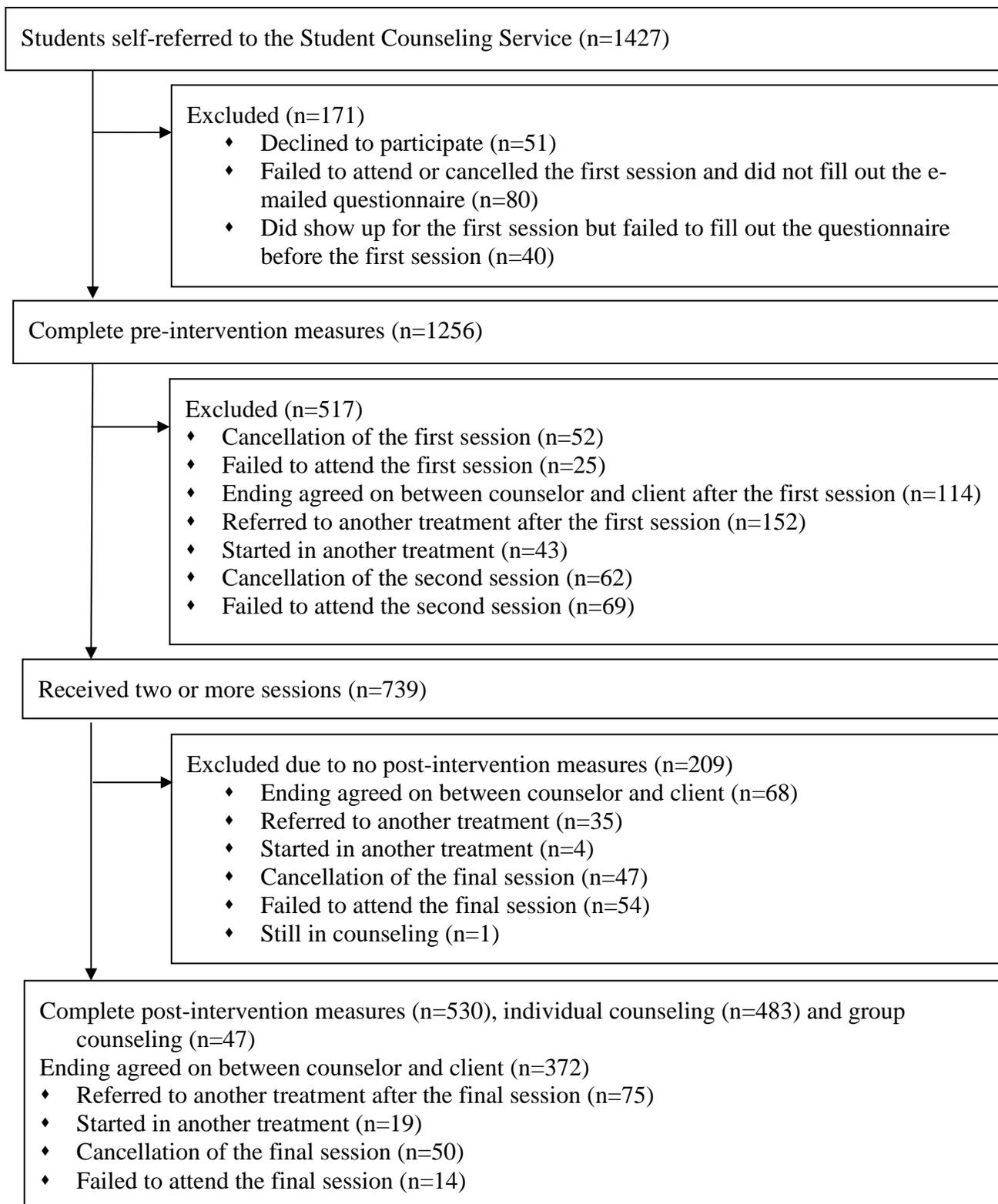


Figure 1. Participant flow. The figure includes the reason for ending counseling at each step of exclusion. Post-intervention measures were e-mailed to all participants, if the questionnaire was not filled out at the Center.

Table 1. Pre-treatment Sample Characteristics

	All participants (n = 1256)	Analyzed participants (n = 530)	P
Characteristics	M (SD) or n (%)	M (SD) or n (%)	
Age (years)	25.4 (4.7)	25.09 (4.43)	0.071
Gender (women)	922 (73.41%)	413 (77.92%)	0.001
Study duration (years)	2.3 (1.6)	2.54 (2.26)	0.226
Delayed in their study ^a	368 (37.21%)	145 (33.33%)	0.025
Considering dropping out of their study ^b	261 (24.88%)	78 (18.06%)	< 0.001
GSI	1.32 (0.57)	1.32 (0.55)	0.947
Clinical cases on GSI	1003 (79.9%)	429 (80.94%)	0.412
OPD-SQS	1.84 (0.86)	1.83 (0.87)	0.664

Note. p = probability independent sample t-test and chi-square test of difference between the analyzed and the excluded participants. GSI = global severity index. Clinical cases are based on Jacobson and Truax's (1991) criteria. OPD-SQS = operationalized psychodynamic diagnosis, structure questionnaire short version

^an = 989 for all participants and n = 435 for analyzed participants. ^bn = 1049 for all participants and n = 432 for analyzed participants. The lower n in a. and b. is due to exclusion of "do not know" answers.

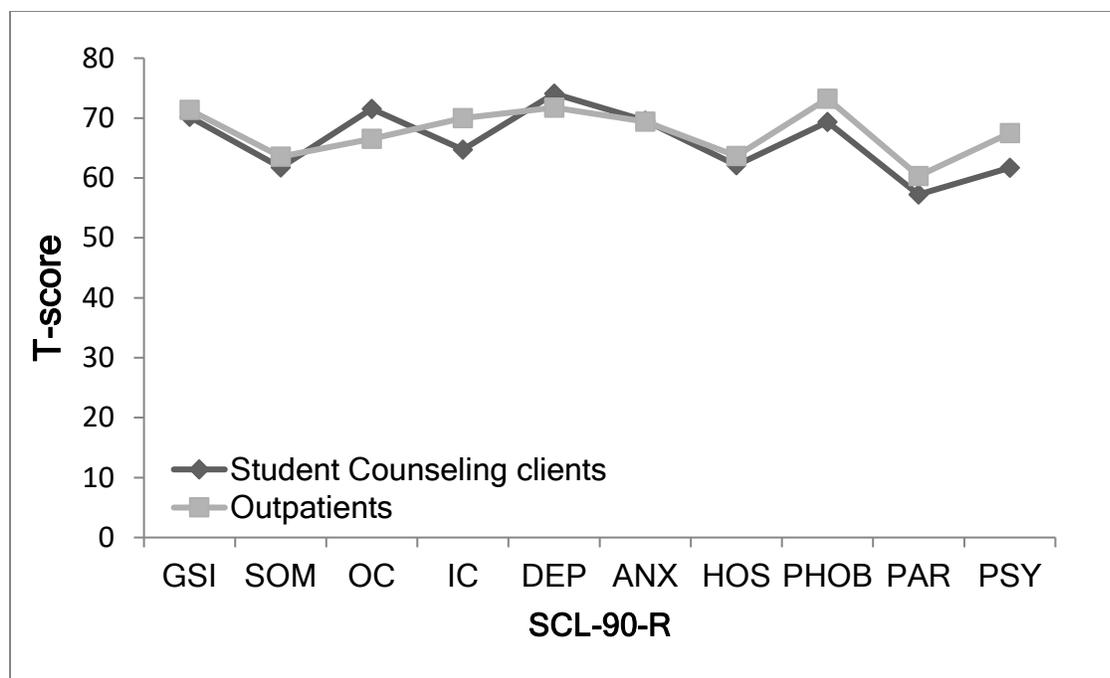


Figure 2. Symptomatic distress in the Student Counseling clients (n = 1256) and outpatients from Stolpegaard (n = 3253). T-score based on Olsen and Bech's (2004) Danish community sample (n=1153). SCL-90-R= Symptom Check List-90-Revised; GSI= global severity index; SOM=somatization; OC=obsession/compulsion; IS=interpersonal sensitivity; DEP=depression; ANX=anxiety; HOS=hostility; PHOB=phobic anxiety; PAR=paranoid ideation; PSY=psychoticism.

Table 2. Outcome and Effect Size

	Pre	Post	Pre-post
	(n = 530)	(n = 530)	(n = 530)
Variable	M (SD)	M (SD)	Cohens's d
GSI	1.32 (0.55)	0.91 (0.60)	0.76***
SOM	1.09 (0.75)	0.72 (0.64)	0.55***
OC	1.97 (0.77)	1.41 (0.84)	0.71***
IC	1.38 (0.81)	1.02 (0.80)	0.50***

DEP	2.12 (0.80)	1.39 (0.90)	0.82***
ANX	1.45 (0.76)	0.97 (0.74)	0.62***
HOS	0.83 (0.66)	0.58 (0.61)	0.45***
PHOB	0.77 (0.67)	0.51 (0.62)	0.43**
PAR	0.85 (0.72)	0.66 (0.68)	0.32***
PSY	0.58 (0.48)	0.38 (0.42)	0.46***
OPD-SQS	1.82 (0.87)	1.51(0.90)	0.42***

Note. GSI= global severity index; SOM=somatization; OC=obsession/compulsion; IS=interpersonal sensitivity; DEP=depression; ANX=anxiety; HOS=hostility; PHOB=phobic anxiety; PAR=paranoid ideation; PSY=psychoticism. OPD-SQS = operationalized psychodynamic diagnosis, structure questionnaire short version

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