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Østergård, O. K., O'Toole, M. S., Svendsen, M. M., & Hougaard, E. (2020). The effect of implementing the partners for change outcome management system in a nationwide student counseling service. *Journal of Counseling Psychology*, 67(1), 90–103. <https://doi.org/10.1037/cou0000353>

Publication metadata

Title:	The effect of implementing the partners for change outcome management system in a nationwide student counseling service
Author(s):	Ole K. Østergård; Mia S. O'Toole; Majken M. Svendsen; Esben Hougaard
Journal:	Journal of Counseling Psychology
DOI/Link:	https://doi.org/10.1037/cou0000353
Document version:	Accepted manuscript (post-print)

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The Effect of Implementing the Partners for Change Outcome Management System in a

Nationwide Student Counseling Service

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The authors would like to express their thanks to the Danish Student Counseling Service and the counselors for their invaluable contributions to this study. There are no conflicts of interest to report for this article. The results presented in the paper has not been disseminated before. Some of the descriptive data from the treatment as usual group has previously been published in Østergård, Fenger and Hougaard (2017). However, there is no overlap in hypotheses.

Abstract

The aims of the present study were to investigate the effect of implementing the Partners for Change Outcome Management System (PCOMS) in the Danish Student Counseling Service and to explore both between-condition moderators and within-condition predictors of outcomes. The study was a non-randomized controlled study, comparing the outcome of individual and group student counseling for 634 PCOMS clients to that of 740 clients having started treatment as usual (TAU) two years before the PCOMS data collection began. The primary outcome measure was the Global Severity Index on the Symptom Checklist 90-Revised. Main analyses were conducted with multilevel models on the intention-to-treat sample. The results demonstrated no effect of the PCOMS compared to the TAU condition, neither for the primary outcome nor for the number of dropouts or clients experiencing deterioration. The PCOMS effect was not predicted by the counselors' adherence to the PCOMS protocol. Because the counselor level explained less than 1% of the variance in outcome, the counselor factors (i.e., attitude to feedback, reactions to negative feedback, and deliberate practice) were not analyzed as predictors. In conclusion, this study does not align with previous studies finding a positive effect of the PCOMS in counseling settings. However, all previous studies relied on the PCOMS Outcome Rating Scale as the only measure of outcome, maybe indicating a measure-specific effect.

Keywords: client feedback, Partners for Change Outcome Management System (PCOMS), Routine Outcome Monitoring (ROM), psychotherapy outcomes, therapist effects.

Public Significance Statement

This study was not able to confirm the positive effect of using the Partners for Change Outcome Management System (PCOMS) as a feedback tool in student counseling when using an outcome measure independent of the PCOMS intervention. Routine Outcome

Monitoring does not necessarily improve client outcome, even when it has been acceptably implemented.

Introduction and background

In Routine Outcome Monitoring (ROM), the client's mental health functioning or symptoms are monitored throughout treatment with feedback to the psychotherapist. The therapist can then use the information to adjust the intervention by, for example, trying to strengthen the therapeutic alliance, shift focus, or revisit goals (Castonguay, Barkham, Lutz, & McAleavy, 2013; Lutz, de Jong, & Rubel, 2015). According to feedback theories, ROM is more likely to result in an improvement when the feedback provides *new* information to the clinician, the clinician perceives the data as *valid*, is committed to improving the mental health of the client, and *believes* that he or she can do so (Sapyta, Riemer, & Bickman, 2005). Research has shown that it is difficult for therapists to get reliable information about client progress based on clinical judgment (Tracey, Wampold, Lichtenberg, & Goodyear, 2014), and therapists are generally found to be poor at predicting client deterioration during therapy (Hatfield, McCullough, Frantz, & Kriege, 2010) and at post-treatment (Hannan et al., 2005) compared to an empirically derived algorithm.

During the last decades, a variety of ROM systems have been developed (see Drapeau, 2012). Especially, the Outcome Questionnaire 45 (OQ-45; Lambert et al., 2004) and the Partners for Change Outcome Management System (PCOMS; Miller & Duncan, 2004) have been implemented in many countries and treatment settings and investigated in several Randomized Controlled Trials (RCTs). Although the ROM systems differ in many ways (Lambert, Whipple, & Kleinstäuber, 2018; Østergård, Randa, & Hougaard, 2018), they all monitor client progress in psychotherapy with the aim of notifying the therapist of the

possible need for making changes in the intervention, thereby potentially preventing client non-improvement, deterioration, or dropout.

Treatment dropout and client deterioration are major problems in student counseling. In a meta-analysis, Swift and Greenberg (2012) found that 53 university-based clinics, including student counseling centers, had an average rate of premature discontinuation of 30.4%, 10.7 percentage points higher than the average rate (19.7%) in all 669 analyzed studies. In their annual report, the *Center for Collegiate Mental Health* (2018) reported a dropout of 32.8% among 19,632 clients; the report included data from 147 student counseling centers, primarily from the United States. A previous study at the Danish Student Counseling Service (Østergård, Fenger, & Hougaard, 2017) found a relatively large proportion of clients with significant deterioration (12.5%), and dropout (31.7%). Thus, for student counseling, there is considerable potential for helping more clients by reducing client dropout and deterioration.

The Danish Student Counseling Service decided to implement the PCOMS nationwide from April 2015 onwards according to the manuals provided by Bertolino and Miller (2012). The PCOMS differs from other ROM systems in several ways. The PCOMS scales consist of the Outcome Rating Scale (ORS) measuring well-being, and the Session Rating Scale (SRS) measuring the therapeutic alliance. Both scales consist of four visual-analog scales filled out in the session. Each scale takes only about 2-3 minutes to administer, and feedback is given immediately to both therapist and client. The client is thereby engaged in providing and discussing feedback on the outcome and the alliance in each session. This engagement of the client, the apparent simplicity of the scales, and the ease of administration may make the PCOMS an attractive choice as a systematic client feedback tool in psychotherapy. The system has currently about 75,000 individual licenses and more than

1,000 group licenses worldwide (B. L. Duncan and S. D. Miller, personal communications, February 7, 2018).

The PCOMS has been evaluated in five meta-analyses (Kendrick et al., 2016; Lambert & Shimokawa, 2011; Lambert et al., 2018; Tam & Ronan, 2017; Østergård et al., 2018). Lambert et al. (2018) included nine PCOMS studies, of which eight were RCTs, and one was a non-randomized controlled trial (N-RCT). They found an overall moderate incremental effect of using the PCOMS (Hedge's $g = 0.40$), primarily based on the ORS as the outcome measure. Østergård et al. (2018) included 18 PCOMS studies in their meta-analysis, 14 RCTs and four N-RCTs, and detected a small incremental effect of using the PCOMS ($g = 0.27$). The treatment setting moderated the effect, as no significant PCOMS effect was found in 10 studies from psychiatric settings ($g = 0.10$), but a moderate effect was found in eight studies from counseling settings ($g = 0.45$). However, all eight studies in counseling settings used the ORS as the only outcome measure, and in six of these studies, the ORS was filled out in the session with the therapist present, which may have inflated the ES estimations due to expectancy or self-presentation biases. Indeed, Østergård et al. (2018) found a somewhat larger (0.11) ES for the ORS than for general symptom measures in the seven studies (all in psychiatric settings) that used both measures. Moreover, studies from psychiatric settings using a general symptom measure, which was independent of the PCOMS intervention, found no effect of the PCOMS. Østergård et al. (2018) concluded that there is a need for PCOMS studies, especially in counseling settings, using other outcome measures than the ORS. Another limitation of the prior counseling studies in Østergård et al. (2018) was that except for two studies (Anker, Duncan, & Sparks, 2009; She et al., 2018), all studies were from the United States, introducing a potential culture-specific effect.

Researchers and feedback theorists have suggested several factors that may be crucial for ROM to have a positive effect, most important the organizational context and the

therapist's training, adherence to the ROM protocol, and therapist factors (e.g., the therapist's attitudes toward ROM, reactions to (negative) feedback, and deliberate practice).

Concerning the organizational context, the lack of implementation support from leaders and local ROM experts can be organizational barriers for the effective use of feedback (de Jong, 2016). Østergård et al. (2018) found that therapist training in the PCOMS (in hours) was not related to the PCOMS effect in the 14 studies where it was reported. According to the feedback intervention theory (Kluger & DeNisi, 1996), ROM practice may give rise to anxiety in the therapists if the management focuses on the therapists' relative effectiveness rather than on the task of improving the outcome of each client.

Regarding adherence, Duncan and colleagues (She et al., 2018) claimed that the absence of a PCOMS effect, found in several studies, could be explained by adherence issues. Unfortunately, only four of the 18 studies (Davidsen et al., 2017; Hansen, Howe, Sutton, & Ronan, 2015; Janse, de Jong, van Dijk, Hutschemaekers, & Verbraak, 2017; Rise, Eriksen, Grimstad, & Steinsbekk, 2016) included in the meta-analysis by Østergård et al. (2018) reported the exact frequency of using the PCOMS in the sessions, with an average of 79.7% (range 50%-100%). Moreover, only four studies (Davidsen et al., 2017; Kellybrew-Miller, 2015; Lester, 2012; van Oenen et al., 2016) used self-report checklists on how the PCOMS was used, without exploring the association between such factors and outcome.

Concerning therapist factors, negative therapist attitudes toward ROM are commonly found (e.g., Aoun, Pennebaker, & Janca, 2002). Three out of four PCOMS studies reporting therapist attitudes on the "Attitude Toward Client Feedback" scale found neutral to positive attitudes toward feedback (Anker et al., 2009; Kellybrew-Miller, 2015; van Oenen et al., 2016); whereas one study found both positive and negative attitudes (Lester, 2012). None of these studies linked therapist attitude to the outcome. Davidsen et al. (2017) found that the therapists rated the overall usefulness of the PCOMS as relatively low and speculated that

this might partly explain the lack of feedback effect in their study. Using another ROM system, Lutz, Rubel, et al. (2015) found larger feedback effects for therapists satisfied with the ROM project and who made only one modification due to feedback. De Jong and de Goede (2015) suggested that especially “prevention-focused” therapists, afraid of making mistakes, may have problems using feedback because of strong emotional reactions to negative feedback. Neither Lutz, Rubel, et al. (2015) nor de Jong and de Goede (2015) measured the therapists’ reactions to negative feedback. Miller, Hubble, and Chow (2018) argued that therapists’ deliberate practice is crucial for the PCOMS to have any incremental effect in psychotherapy. Deliberate practice is defined by three activities: (1) establishing a baseline level of effectiveness, (2) obtaining feedback regularly, and (3) spending time outside of daily work in systematic effort to improve (Miller et al., 2018).

The present study investigated the effect of implementing the PCOMS in the Danish Student Counseling Service, employing a general symptom severity scale independent of the PCOMS intervention as the primary outcome. The aims were to investigate the incremental effect of implementing the PCOMS and to explore both between-condition moderators and within-condition predictors of outcomes. It was hypothesized: (1) that the PCOMS would enhance the outcome and lower the number of dropouts and deteriorated clients compared to treatment as usual (TAU), and (2) that the effect within the PCOMS condition would be positively associated with the counselors’ adherence to the PCOMS protocol, and three counselor factors (i.e., positive attitude to feedback, ability to tolerate negative feedback, and deliberate practice).

Methods

Setting and Participants

The Danish Student Counseling Service offers counseling free of charge to students from all universities, university colleges and business academies in Denmark. There are four

counseling centers located in the main university cities (Copenhagen, Aarhus, Odense, and Aalborg) and four additional local clinics located at universities or colleges in the smaller university towns. The counselor-to-student ratio is around one to 8,000. From 2016 and on, the Student Counseling Service undertook new tasks and allocated counseling resources to “special educational support” for mentally and physically disabled students, and increased the focus on offering workshops and teaching to the higher education institutions (Danish Student Counseling Service, 2016). Consequently, about four full-time counselors were allocated from counseling to the new tasks corresponding to a 15.5% decrease in counseling resources from the TAU to the PCOMS condition (not all counselors were full-time employed). Correspondingly, in the study period, fewer clients received counseling in the PCOMS condition ($n=634$) than in the TAU condition ($n=740$).

All students who contacted the Danish Student Counseling Service during the three months from September 15 to December 15, 2014, and during the same period in 2016, were included in the study. The TAU data collection was completed in February 2016 and the PCOMS in February 2018. It was mandatory for the counselors to use the PCOMS for new clients from April 2015 and on. Counseling was offered to students with personal problems such as low self-esteem and minor to moderate mental disorder (e.g., anxiety disorders and non-severe depression), study-related problems (e.g., exam anxiety and difficulties writing a thesis), and problems concerning social security laws (in both the PCOMS and the TAU condition, only three clients included in the main analyses had social problems as their only presenting problem). The vast majority of clients was self-referred. Students were referred to another treatment facility if the counselor assessed them as not suitable for the brief counseling offered due to, for instance, more severe mental disorders, suicidal risk, or substance abuse. Formal diagnostic interviews were not carried out at the centers, but the counselors noted the clients’ primary presenting problems after the first session by marking

one or more options on a 43-item checklist that has routinely been used for more than 10 years in the Student Counseling Service; the most frequent ones in the TAU and the PCOMS condition, respectively, being stress (42.9%, 44.5%), depression (42.9%, 43.6%), concentration problems (41.2%, 43.4%), self-esteem problems (35.4%, 34.9%), and anxiety (30.3%, 34.7%).

Counseling

The counseling characteristics of the TAU and the PCOMS condition are shown in Table 1, both for individual and group counseling. The counseling in both conditions was short-term, focusing on the current problems of the client (see also Østergård et al., 2017). The counselor-reported theoretical approach was eclectic in 539 courses of counseling (39.5%), cognitive-behavioral (CBT) in 426 courses (31.2%), psychodynamic in 204 courses (14.9%), systemic/narrative in 135 courses (10.0%), and humanistic in 61 courses (4.5%). Both in the TAU and the PCOMS condition, the vast majority of clients received individual counseling, 679 (91.8%) and 585 (92.3%), respectively. The mean number of sessions was 4.09 for individual and 7.00 for group counseling in the TAU condition, and 3.84 for individual and 5.57 for group counseling in the PCOMS condition (these differences were not significant). Several significant differences were found between the two conditions. Most importantly, in the PCOMS condition, the clients in individual counseling more often changed counselor, were placed on a waiting list more frequently and for a more extended period (see Table 1).

insert Table 1 about here

Forty-five counselors provided counseling in the study, 33 in the TAU condition and 35 in the PCOMS condition (23 in both conditions). Thirty-one counselors held a master's degree in psychology and 14 a bachelor's degree in social work. The counselors had between 1 and 35 years of experience in counseling or psychotherapy with a mean of 15.6 ($SD = 10.3$)

years. In both conditions, the counselors received group supervision for 2 hours each month, and they had 1.5-hour weekly case conferences focusing on client assessment and challenging cases.

The PCOMS Intervention and Training

In April 2015, 1.5 years before the start of collecting the PCOMS data, it became mandatory for all counselors to use the PCOMS. The counselors administered the ORS at the beginning of each session, and the (Group) (G)SRS toward the end of each session, using a tablet with a web-based outcome management system (FIT-outcomes, 2018). FIT-outcomes gives instant feedback to the counselor and client by producing a graph, illustrating changes on the ORS and the (G)SRS. On the ORS, the expected treatment response was calculated based on the client's pre-counseling score being compared to about 100,000 clients previously using the system (FIT-outcomes, 2018). This comparison made it possible to classify each client in every session as on-track (OT) or not-on-track (NOT) of a good treatment outcome (Bertolino & Miller, 2012). NOT clients were termed "signal cases." The statistical model used to calculate NOT in FIT-outcomes is currently protected by private copyrights and has not been published (Bargmann, 2018). In the previous PCOMS studies (Østergård et al., 2018), NOT has typically been defined as a 5-point reduction on the ORS at session 3 (Miller & Duncan, 2004). On the (G)SRS, the client was termed a "signal case" if the total score was below the established cut-off point of 36 corresponding to the lowest 24th percentile, or had dropped with at least 1 point from the previous session (Bertolino & Miller, 2012). The counselors were encouraged to discuss the feedback with the client in each session with special attention given to "signal cases." Moreover, the counselors were advised to seek supervision if the client was NOT at session three or later.

The counselors had trained in a 2-day workshop and a 3-hour session by an external certificated PCOMS trainer before the implementation in April 2015, and again in two 2-day

workshops in early September 2015 and 2016, just before the PCOMS study period began. From April 2015 and onward, the counselors received PCOMS case consultation 30 minutes each week according to the supervision model developed by S. D. Miller and colleagues (Measchalck, Bargmann, Miller, & Bertolino, 2012), and implementation issues were addressed at monthly 1.5 hours workshops; for instance, exercises in how to present the ORS for the client and receive feedback on the (G)SRS. These PCOMS consultations and workshops were carried out separately at each center (Copenhagen, Aarhus, Aalborg, and Odense) by two local key persons, who had started to use the PCOMS in early 2014 and who had attended courses and received training in the PCOMS by certified trainers. All counselors hired after the initial PCOMS training participated in a 5-hour group-training program and joined the weekly case consultations. The implementation process was monitored and adjusted each month at meetings with the participation of the director, local leaders and PCOMS key persons from all centers.

Measures

Primary outcome. The Global Severity Index (GSI) of the Symptom Check List-90-Revised (SCL-90-R; Derogatis, 1992) measures symptomatic distress. The SCL-90-R has 90 self-report items; each rated on a Likert scale from 0 = *not at all* to 4 = *extremely*. The measure has a total mean score, the GSI, which served as the primary outcome measure, and nine subscales not reported in this study. The SCL-90-R has been standardized in a representative Danish community sample (Olsen, Mortensen, & Beck, 2004). The internal reliability for GSI in the Danish version of the SCL-90-R was excellent (Cronbach's $\alpha = .97$; Olsen, Mortensen, & Bech, 2007). The GSI correlated highly with all subscales (.71-.98), except hostility, although a Mokken analysis found higher homogeneity after exclusion of psychoticism, paranoid ideation, and hostility (Olsen et al., 2004). The GSI scores in the Danish sample were higher than the original U.S. norms (Derogatis, 1992) but similar to data

from other Nordic countries (Olsen, Mortensen, & Bech, 2006). In the present study, the internal reliability for GSI at pre-counseling was high (Cronbach's $\alpha = .96$). The SCL-90-R was administered at pre- and post-counseling.

Outcome within the PCOMS condition. The Outcome Rating Scale (ORS; Miller, Duncan, Brown, Sparks, & Claud, 2003) measures well-being on four dimensions: (1) individually, (2) interpersonally, (3) socially, and (4) overall. The ORS consist of four visual analog scales with 10 cm long horizontal lines. The client rates her or his well-being by placing a mark on the lines; the better, the more to the right (higher score). The scales are summed up to a total score, ranging from 0 to 40. The ORS was not administered in the TAU condition. The ORS has shown acceptable psychometric properties with Cronbach's alphas between .81 (Seidel, Andrews, Owen, Miller, & Buccino, 2017) and .93 (Miller et al., 2003), test-retest correlations in non-clinical samples ranging from .66 (Miller et al., 2003) to .80 (Bringhurst, Watson, Miller, & Duncan, 2006), and some support for convergent validity with correlations between the ORS total score, and the OQ-45 and SCL-90-R total score ranging from .50 (Janse, Boezen-Hilberdink, van Dijk, Verbraak, & Hutschemaekers, 2014; SCL-90-R) to .76 (Campbell & Hemsley, 2009; OQ-45). In the present study, the ORS total score at pre-counseling had acceptable internal consistency (Cronbach's $\alpha = .78$) and moderate concurrent validity with the SCL-90-R ($r = .435$). The ORS total scores obtained at the first and the last session were used to calculate outcome within the PCOMS condition.

Predictors within the PCOMS condition.

Adherence to the PCOMS. Data from FIT-outcomes (2018) were used to measure the percentage of sessions in which the ORS and the SRS were administered in each course of counseling in the PCOMS condition.

PCOMS Adherence Checklist (PAC), therapist (PAC-T) and client (PAC-C) versions. The PAC was developed for this study to measure participant experiences of how the

PCOMS was used. The PAC-T has four questions to the counselor: (1) In which percentage of the sessions was the feedback on the ORS/SRS discussed with the client, and (2) How was the ORS/SRS used in the sessions, with the possibility of marking one or more of seven options: (a) I did not actively use the ORS/SRS in the sessions, (b) I used the ORS/SRS for screening or evaluation of the sessions, (c) I tried to improve the therapeutic relationship, (d) I have discussed the therapeutic goals with the client, (e) I have changed my way of working with the client, (f) I have changed the time interval between the sessions, (g) other. Item b to f were summed to quantify how many modifications the counselors made due to the feedback. Finally, the counselor was asked (3) If she or he was surprised by the feedback (yes, or no), and (4) Found the feedback on the ORS/SRS helpful (from 0 = *not helpful at all* to 4 = *very helpful*). The counselor completed the PAC-T immediately after ending each counseling course. The PAC-C had four items, each rated from 0 = *totally disagree* to 4 = *totally agree*: (1) I think it was a good idea to use the ORS/SRS in the sessions, (2) The counselor and I discussed my feedback on the ORS/SRS, (3) It is my impression that my feedback was used actively in the sessions, and (4) The use of the ORS/SRS was helpful to me. The PAC-C was filled out by all clients in the PCOMS condition after their course of counseling had ended.

Counselor factors. The Therapist Attitude to the PCOMS (TAP) was developed for this study and aimed at measuring the counselor's attitude to feedback, use of feedback, and reactions to negative feedback. The TAP asked the counselors seven questions; each rated on a Likert scale from 0 = *totally agree* to 4 = *totally disagree*: (1) Generally, I think it is important to monitor the clients' benefit from psychotherapeutic treatment continuously, (2) I think that the implementation of the PCOMS in the Student Counseling is positive, (3) The feedback I receive from clients is useful, (4) The feedback I receive from clients generally affects the course of future sessions, (5) It is my experience that negative client feedback is positive for my development, (6) Negative client feedback makes me work harder to try to

help the client, and (7) Frankly, I am being hurt by negative feedback from my clients. The TAP left space at the end for qualitative comments. The counselors completed the TAP anonymously at the beginning of the PCOMS study-period and six months later. An average of the two measurement times was used in the prediction analysis (no differences were found between time 1 and 2).

The Deliberate Practice Checklist (DPC) was developed for this study to measure aspects of the counselor's deliberate practice in each course of counseling. The checklist had nine questions: (1) I have not prepared for the counseling between sessions, (2) I have looked at the feedback from the ORS/SRS on my tablet or computer, (3) I have read the client's record, (4) I have mentally reviewed and reflected on previous sessions, (5) I have mentally reviewed and reflected on what to do in future sessions, (6) I had supervision regarding the client, (7) I have discussed the client with a colleague of mine, (8) I have consulted theories or literature on the matter, and (9) Other forms of preparation. The counselor completed the DPC immediately after ending each course of counseling in the PCOMS condition.

Other measures. The Study Questionnaire (SQ). The SQ was developed in the Student Counseling Service (Østergård et al., 2017) and measured the clients' self-reported academic and social functioning. The full SQ has eight questions, but only the first four were used in this study. Two questions asked the clients how they were doing academically and socially, respectively, rated on five-point Likert scales from 0 = *very poor* to 4 = *very good*. Two questions asked about study delay and consideration of study dropout (yes, or no).¹

Counselor characteristics data (i.e., mean year of counselor experience, theoretical approach, and education) were obtained from a short self-report questionnaire developed for this study. Data on counseling characteristics (i.e., change of counselor, mean number of

¹ The SRS, the Operationalized Psychodynamic Diagnosis, Structure Questionnaire, Short version (Ehrenthal, Dinger, & Schauenburg, 2015), and the Working Alliance Inventory, Short Form (Tracey & Kokotovic, 1989) were administered, but not reported in this study

sessions, waiting list, mean days in counseling and between sessions, psychiatric counseling, and the reason for ending counseling) were extracted from the clients' electronic records routinely used by the counselors in the Student Counseling Service.

Procedure for Data Collection

All measures were administered electronically by an online data collection platform. At pre-counseling, the questionnaires were e-mailed to the clients to fill out before their arrival at the counseling center. A secretary checked if pre-counseling measures were completed when the client arrived at the center, and, if not, the clients were asked to do so using a tablet. At post-counseling, the counselor handed out the measures on a tablet immediately after the final session. The client completed the questionnaire at the secretariat outside the counseling session. If post-counseling measures were not filled out at the center, they were e-mailed to the clients with up to four reminders by e-mail.

All participants gave informed consent to participate in the study. The Regional Ethical Committee was consulted, and the study was approved by the Danish Data Protection Agency.

Statistical Analyses

The incremental effect of the PCOMS intervention was analyzed using multilevel modeling (MLM) on the intention-to-treat (ITT) sample, defined as participants receiving at least two sessions (first assessment session, plus at least one session) in alignment with Østergård et al. (2017). A PCOMS intervention effect was indicated by a statistically significant two-way interaction between condition and time. The equation was: $GSI_{ij} = (\beta_{0j} + U_{0j}) + \beta_{1j}(\text{Time}_{ij}) + \beta_{2j}(\text{Condition}_{ij}) + \beta_{3j}(\text{Time}_{ij} \times \text{Condition}_{ij}) + R_{ij}$, where i = time, j = client, R_{ij} = error, U_{0j} specifies the intercept as random. With only two observation points (i.e., pre- and post-counseling), the slopes were specified as fixed (i.e., β_{1j} , β_{2j} , and β_{3j}). Separate analyses of the main effect were conducted for individual and group counseling because they

were considered substantially different and because Østergård et al. (2017) found a larger effect of individual counseling compared to group counseling.

Initially, a 3-level model was estimated for individual counseling, where time at level 1 was nested within clients at level 2, which again were nested within counselor at level 3. When the client changed their counselor, the client (level 2) was allocated to the counselor (level 3 in the ICC calculation) responsible for and ending the course of counseling. Most of the 256 clients (20.5%) who changed counselor (cf. Table 1) did so after one (86.8%) or two sessions (10.9%), and 97.1% of the counselors analyzed had two or more session with the client. The intraclass correlation coefficients (ICC) were calculated from the between and within variance to estimate the variance explained by the client and counselor level. The counselor level explained less than 1% of the variance in the outcome of individual counseling in a 3-level model when including both counseling conditions ($ICC = 0.006$), and the TAU condition only ($ICC = 0.008$), and the model did not even converge within the PCOMS condition. Furthermore, including level 3 did not improve the overall model fit as evaluated by a change in the -2LL fit statistics (4111.884 vs. 4111.897). When excluding all courses of counseling where the clients changed counselor, the counselor level explained 1.0% of the variance across conditions, 1.0% within the TAU condition, and the model did not converge within the PCOMS condition. Accordingly, the analyses were based on a 2-level model².

Moderation and prediction analyses were conducted for individual counseling only (because they made up more than 90% of the cases). Moderators of between-condition effects included baseline severity score (GSI), and counseling characteristics where a significant difference between the PCOMS and the TAU condition was found. Predictors of within-

² Two moderators (i.e., "counselor years of experience" and "theoretical approach") were tested in a 3-level model because they belonged to the counselor level and because it was a priori decided to test for the potential confounding effect of all counseling differences found between the PCOMS and the TAU condition.

condition effects (i.e., the PCOMS condition) included adherence to the PCOMS protocol (measured in each course of counseling). The between-condition moderators were tested one by one with the equation: $GSI_{ij} = (\beta_{0j} + U_{0j}) + \beta_{1j}(\text{Time}_{ij}) + \beta_{2j}(\text{Condition}_{ij}) + \beta_{3j}(\text{Moderator}_{ij}) + \beta_{4j}(\text{Time}_{ij} \times \text{Condition}_{ij}) + \beta_{5j}(\text{Time}_{ij} \times \text{Moderator}_{ij}) + \beta_{6j}(\text{Condition}_{ij} \times \text{Moderator}_{ij}) + \beta_{7j}(\text{Condition}_{ij} \times \text{Time}_{ij} \times \text{Moderator}_{ij}) + R_{ij}$. The equation for testing the within-condition predictors was: $GSI_{ij} = (\beta_{0j} + U_{0j}) + \beta_{1j}(\text{Time}_{ij}) + \beta_{2j}(\text{Predictor}_{ij}) + \beta_{3j}(\text{Time}_{ij} \times \text{Predictor}_{ij}) + R_{ij}$. The planned analyses exploring counselor factors (i.e., attitude to feedback, reactions to negative feedback, and deliberate practice) were discarded due to the finding that a 3-level model was a poor fit (or did not converge).

For all the moderation and prediction analyses, the statistical significance level was lowered to $\alpha = .01$ because of the high number of analyses. Simple slope analyses were performed to explore differences in the incremental PCOMS effect for clients below and above the GSI median at baseline and to explore significant interaction effects by splitting the moderators/predictors by the median or the response categories (i.e., agree vs. disagree or neither agree nor disagree). The maximum likelihood method was used to estimate the parameters, assuming that data are missing at random. This assumption was tested by analyzing differences in baseline GSI between participants with complete pre- and post-counseling measures and participants with missing post-counseling measures ($p = .521$).

ESs were calculated as Cohen's d . The within-condition ES, expressing client change within both conditions, was calculated as the standardized mean difference between pre- and post-counseling GSI (and the pre-post ORS for the PCOMS condition) based on the SD difference score. This method was chosen to facilitate comparison with previous outcome studies. The between-group ES, expressing the incremental effect of the PCOMS intervention, was derived from the F -test (time $\times$ condition interaction) and calculated as $d =$

$2 \times (\sqrt{\frac{F}{df}})$). This formula was also used to calculate the ESs in the simple slope analyses. An effect of the PCOMS was indicated for all the analyses by a positive Cohen's *d*.

The number of clients with reliable and clinically significant change on the GSI was calculated according to Jacobson and Truax's (1991) criteria. 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 at the Psychiatric Center Stolpegaard (Østergård et al., 2017). The reliable change index (RCI) and the clinical cut-off point demarcating clinical from the non-clinical population were calculated to be 0.21 and 0.83, respectively. Based on the calculations, clients were classified as recovered (clinical and reliable change), improved (only reliable change), not reliably changed, or reliably deteriorated. Within the PCOMS condition, the PCOMS manual (Miller & Duncan, 2004) was followed to classify clients as recovered, improved, not changed, or deteriorated on the ORS based on an RCI of 5 ORS total points and a clinical cut-off ORS total score at 25.

IBM SPSS, version 24, was used for all the analyses.

Results

Participant Flow

The participant flow is shown in Figure 1. Out of the 2,734 students who contacted the Student Counseling Service during the study periods, 740 and 634 received the ITT counseling in the TAU and the PCOMS condition, respectively. In the TAU condition, 531 (71.8%) had completed the GSI at pre- and post-counseling, whereas 532 (83.9%) had completed the GSI at pre- and post-counseling in the PCOMS condition.

insert Figure 1 about here

Characteristics of the Participants

Pre-counseling participant characteristics are shown in Table 2. About 80% of the ITT clients in both the PCOMS and the TAU condition had a GSI score above the clinical cut-off

based on the Jacobson and Truax (1991) criteria. Thus, at pre-counseling four out of five clients' level of symptomatic distress was more similar to that of psychiatric outpatients than to that of the general Danish population.

No significant differences between the PCOMS and the TAU condition were found for any of the sociodemographic variables, or symptomatic distress (GSI) ($p > .05$). Clients in the PCOMS condition were more likely to report that they were doing poorly socially ($p = .023$) and academically in their studies ($p = .002$), and considered study dropout to a larger extent ($p = .022$), although experiencing less delay in their studies ($p = .006$).

insert Table 2 about here

The ITT sample did not differ significantly on symptomatic distress (GSI) from clients ending or dropping out of counseling before the second session ($p > .05$; see Table 2). However, clients ending or dropping out before session two were more likely to be men ($p = .049$), had studied for less time ($p = .001$), and were more likely to consider dropping out of their studies ($p < .001$).

Because most differences between the PCOMS and the TAU condition were found between session 1 and 2 (cf. Table 1), we tested for selective dropout between session 1 and 2. In the PCOMS condition 167 clients (39.2%) dropped out between session 1 and 2 compared to 132 (30.6%) in the TAU condition ($p = .005$). Moreover, the symptomatic distress at pre-counseling (GSI) was significantly larger in the PCOMS condition ($M = 1.42$) than in the TAU condition ($M = 1.29$) for clients dropping out between session 1 and 2 ($p = .007$).

Outcome

Primary outcome. Table 3 shows the outcome of individual and group counseling. The MLM analyses found no incremental effect on symptomatic distress (GSI) of using the PCOMS as the interaction time x condition was not significant. This was true both for

individual counseling, $F(1,1072.74) = 0.025$, $p = .874$, $d = 0.01$, and group counseling, $F(1,94.24) = 1.020$, $p = .315$, $d = 0.21$.

insert Table 3 about here

The MLM analysis showed no significant difference between the incremental effect of the PCOMS in individual and group counseling which was revealed by a non-significant time x condition x counselor format (group vs. individual) interaction, $F(1,1147.68) = 0.720$, $p = .396$.

Sensitivity analyses found no incremental PCOMS effect for individual counseling, $F(1,848.19) = 0.144$, $p = .705$, and group counseling, $F(1,23.15) = 2.583$, $p = .122$, when re-running the primary outcome analyses excluding all courses of counseling where the clients changed counselor. Moreover, re-running the primary outcome analyses including all clients with 1 or more sessions did not change the results, neither for individual, $F(1,1273.86) = 0.436$, $p = .509$, nor for group counseling, $F(1,94.24) = 1.020$, $p = .315$. Finally, including only clients above the GSI clinical cut-off at baseline and clients with personal problems as one of their presenting problems (not only study- or social problems) did not change the results for neither individual nor group counseling ($ps > .05$).

Restricting the between-group analysis to the 83.6% of cases where the ORS was used in all sessions, the overall effect in the PCOMS condition was still not larger than the effect in the TAU condition, $F(1,985.32) = 0.797$, $p = .372$.

Dropouts and number of clients changed. The number of dropouts in individual counseling was not different in the TAU and the PCOMS condition; 155 (22.8%) and 120 (20.5%), respectively; $X^2(1, n = 1263) = 0.99$, $p = .320$. In group counseling, significantly more clients dropped out in the PCOMS condition (16 (32.7%)) than in the TAU condition (9 (14.8%)); $X^2(1, n = 110) = 4.96$, $p = .026$.

Numbers of clients reliably changed, recovered, and deteriorated on the GSI are reported in Table 4. There were no significant differences between the TAU and the PCOMS condition, neither for individual counseling nor for group counseling ($ps > .05$).

insert Table 4 about here

Moderation of the PCOMS Effect

Baseline symptomatic distress (GSI, median split) did not moderate the incremental effect of the PCOMS, $F(1,1174.63) = 0.274$, $p = .601$. Simple slope analyses showed that neither clients with baseline GSI scores below the median, $F(1,596.26) = 0.306$, $p < .580$, $d = 0.05$, nor clients with baseline GSI scores above the median, $F(1,582.29) = 0.061$, $p < .806$, $d = 0.02$, had an incremental PCOMS effect. Moreover, none of the significant counseling differences between the TAU and the PCOMS condition moderated the PCOMS effect: counseling center, $F(1,1063.18) = 0.072$, $p = .931$; change of counselor, $F(1,1075.20) = 0.222$, $p = .638$; being placed on a waiting list, $F(1,1071.44) = 0.752$, $p = .386$; mean days on waiting list, $F(1,1094.87) = 1.000$, $p = .317$; mean days in counseling, $F(1,1078.23) = 0.262$, $p = .609$; or mean days between sessions, $F(1,1159.48) = 2.559$, $p = .110$. Finally, neither counselor years of experience nor theoretical approach moderated the effect of the PCOMS in a 3-level model ($ps > .05$), which should be expected because the counselor level explained less than 1% of the variance.

Prediction within the PCOMS Condition

Adherence to the PCOMS. The ORS and the SRS were administered in 92.9% and 89.1% of all individual sessions, respectively. According to the counselors' reports, they actively used the ORS/SRS in 84.1% of all courses of counseling (i.e., yes, or no). When the scales were actively used (yes) they were used to evaluating the sessions in 402 cases (71.9%), improving the therapeutic relationship in 170 cases (30.4%), discussing therapeutic

goals with the client in 228 cases (40.8%), changing the way of working with the client in 117 cases (20.9%), and to changing the interval between sessions in 18 cases (3.2%).

The effect within the PCOMS condition was tendentially, but not significantly, associated with the percentage administration of the ORS, $F(1,570.64) = 6.395, p = .012$, or the SRS, $F(1,554.94) = 2.111, p = .147$. Neither the counselor- nor the client-reported percentage of sessions, in which the feedback on the ORS/SRS were discussed, predicted the effect within the PCOMS condition, $F(1,515.12) = 0.057, p = .811$; $F(1,473.00) = 1.533, p = .216$, respectively. Finally, the effect within the PCOMS condition was not predicted by counselor-reported information about how the ORS/SRS were used; regardless of whether operationalized as active use of the ORS/SRS (i.e., yes, or no), $F(1,525.81) = 0.745, p = .388$; any of the specific questions about how the ORS/SRS were used ($ps > .05$); or the number of modifications made due to feedback $F(1,521.61) = 0.715, p = .398$. However, the effect within the PCOMS condition was larger, if the client reported that the feedback was used actively in the sessions, $F(1,473.00) = 8.993, p = .003$, or that using the ORS/SRS was helpful, $F(1,472.00) = 14.148, p < .001$. Simple slope analyses exploring these two significant interaction effects showed that the effect within the PCOMS condition was larger when the clients agreed that using the ORS/SRS was helpful, $F(1,213) = 171.023, p < .001, d = 1.80$, compared to when they disagreed or neither agreed nor disagreed, $F(1,259) = 128.413, p < .001, d = 1.41$. Moreover, the within PCOMS condition effect was larger when the clients agreed that the ORS/SRS were actively used, $F(1,311) = 223.312, p < .001, d = 1.69$, compared to when they disagreed or neither agreed nor disagreed, $F(1,162) = 75.468, p < .001, d = 1.37$.

Counselor factors. Thirty out of 31 (96.8%) of the counselors agreed that ROM, in general, is important. However, considerably less, namely 17 (54.8%), agreed that implementation of the PCOMS in the Student Counseling was positive, while eight (25.8%)

neither agreed nor disagreed, and six (19.4%) disagreed. Twenty-nine of the counselors (93.5%) generally agreed that the PCOMS feedback was useful, 29 (93.5%) that it affected the course of future sessions, 28 (90.3%) that negative feedback was positive for their professional development, and 19 (61.3%) that negative feedback made them work harder. Seven counselors (22.7%) reported that they felt hurt by negative feedback. Regarding deliberate practice, 526 of the counselors (98.3%) reported that they prepared for the counseling between sessions; of which 298 (55.6%) looked at the feedback on their tablet or computer, 517 (96.5%) read the client's record, 297 (55.4%) mentally reviewed and reflected on previous sessions, 288 (53.7%) mentally reviewed and reflected on what to do in future sessions, 72 (13.4%) discussed the client with a colleague, 62 (11.6%) had supervision regarding the client, and 18 (3.4%) consulted theories or literature.

The planned analyses, exploring the counselor factors as predictors, were discarded because the 3-level model including the counselor level was a poor fit.

GSI vs. ORS

Within the PCOMS condition, the ORS total score yielded a numerically higher pre-post ES than the GSI corresponding to a difference of 0.27 and 0.40 for individual and group counseling, respectively (see Table 3). On the GSI, 58 (11.8%) clients deteriorated post-counseling in individual and seven (17.5%) in group counseling, whereas only 28 (5.2%) and one (2.7%), respectively, deteriorated on the ORS when using the 5-point criterion on the ORS total score (cf. Miller & Duncan, 2004) (see Table 4).

Out of 58 deteriorated clients on the GSI within the PCOMS condition, only eight (13.8%) were also deteriorated on the ORS at post-counseling using the 5-point criterion (missing ORS data on seven clients deteriorated on the GSI).

The deteriorated clients on the GSI were significantly more NOT (73.9%) on the ORS at session three or later according to FIT-outcomes (2018) criterion compared to the non-

deteriorated clients (49.5%), $X^2(1, n = 355) = 9.56, p = .002$. The odds of receiving a NOT signal was 2.9 times higher for clients deteriorated on the GSI compared to the non-deteriorated clients.

Counselor reactions to NOT signals

In total, 182 (49.5%) of the clients in the PCOMS condition with at least three sessions in individual counseling were NOT according to the FIT-outcomes (2018) at session three or later (counselors reactions to NOT signals were restricted to signals given at session three or later because they were asked to pay special attention to these, e.g., seek supervision).

According to the counselors' report, they did not more often use the ORS/SRS actively in the sessions in NOT cases ($p > .05$). Moreover, when the ORS/SRS were reported actively used, no differences were found between the OT and NOT clients on any of the specific questions about how the ORS/SRS were used, or how many modifications were made due to feedback ($ps > .05$).

The counselor had supervision in 20.2% of all NOT cases compared to 9.5% in the OT cases, $X^2(1, n = 352) = 8.68, p = .005$. Moreover, for clients with at least three sessions, the average number of sessions was higher for the NOT cases (5.7) than for the OT cases (4.0), $t(363) = -7.85, p < .001$. No difference was found between the OT and NOT cases on any of the other questions on deliberate practice (DPC; $ps > .01$)

The counselor-reported reasons for clients ending counseling were significantly different ($X^2(2, n = 537) = 65.32, p < .001$) for clients NOT and OT at the last session: In agreement between counselor and client 46 (30.1%) vs. 261 (68.0%); further referral, or started in another treatment 55 (35.9%) vs. 71 (18.5%); or dropout 52 (34.0%) vs. 52 (13.5%).

Discussion

The aims of the study were to investigate the incremental effect of implementing the PCOMS and to explore moderators and predictors of outcomes. No incremental effect of implementing the PCOMS in the Danish Student Counseling Service was found, neither for individual nor for group counseling. Furthermore, the PCOMS did not lower the number of dropouts or deteriorated clients on the GSI. The number of deteriorated clients was as high as 11.0% (TAU) and 11.8% (PCOMS) in individual counseling, and 25.5% (TAU) and 17.5% (PCOMS) in group counseling. Only 13.8% of the deteriorated clients on the GSI were also deteriorated on the ORS at post-counseling. Within the PCOMS condition, the pre-post effect was tendentially, but not significantly, associated with the percentage administration of the ORS. However, in a post-hoc analysis, restricting the between-group analysis to the 83.6% of cases where the ORS was used in all sessions, there was no incremental effect of the PCOMS. The counselor-reported adherence to the PCOMS protocol in each course of counseling did not predict the effect within the PCOMS condition. The effect within the PCOMS condition was larger if the client reported that feedback was used actively in the sessions ($p = .003$) and was helpful ($p < .001$). The counselor level explained less than 1% of the variance in outcome, which made it unfeasible to test for the planned predictors at the counselor level (i.e., attitude to feedback, reactions to negative feedback, deliberate practice).

The lack of a positive effect of the PCOMS intervention was found even though the PCOMS was implemented according to the manual (Bertolino & Miller, 2012), and the ORS and the SRS were administered in about 90% of all sessions. The null finding is in contrast to the finding in Østergård et al. (2018) who included eight studies from counseling settings (four of these student counseling) in their meta-analysis and found a moderate effect of the PCOMS ($g = 0.45$). However, all eight studies used the ORS as the only outcome measure, and in six of these studies, the ORS was filled out in the session with the counselor present, which may have biased the ES estimation due to expectancy or the so-called “Hello-Goodbye

Effect” (Choi & Pak, 2007). According to the Hello-Goodbye-Effect, the client may be signaling a need for help with a low score on the outcome measure in the first session and (in accordance with social desirability effects) try to please the therapist, or portray themselves in a more positive light with a higher score in the last session. The Hello-Goodbye-Effect is more likely to be present when the clients know that their therapists are informed about the scores. Indeed, within the PCOMS condition, the present study found that the pre-post ES was 0.27 larger for individual and 0.40 larger for group counseling on the ORS than on the SCL-90-R. This finding aligns with Seidel et al. (2017) where clients at session 1 reported more distress on the ORS than on the OQ-45, which, they argue, may explain their larger pre-post ES on the ORS (0.83 vs. 0.44). Moreover, in a direct comparison of seven studies where the ORS was used together with a general symptom outcome measure, Østergård et al. (2018) found that the incremental effect of the PCOMS was increased with 0.11 when the ORS was used, indicating a measure-specific effect. Østergård et al. (2018) found no incremental effect of the PCOMS in the studies (all from psychiatric settings) using a general symptom measure as outcome. Taken together, the higher effect detected when employing the ORS as the outcome measure may question the previously positive findings on the PCOMS in counseling settings.

Even though the PCOMS addresses clients at high risk of deterioration by giving NOT signals to the counselor, the PCOMS intervention did not lower the number of deteriorated clients in our study. Østergård et al.’s (2018) meta-analysis also revealed no influence of the PCOMS on the number of deteriorated clients ($OR = 0.91, p = .537$) in 13 studies where deterioration was reported. The PCOMS has been developed with the primary aim to increase the overall effect for all clients (and not only for NOT clients; Bertolino & Miller, 2012) by improving the therapeutic alliance and the engagement of the client in the treatment, whereas the OQ-45 primarily aims at enhancing the effects for NOT clients. The

PCOMS offers general guidelines for NOT cases encouraging the therapist to discuss problems with the client, seek supervision, or change strategy, but does not offer specific advice. In contrast, the OQ-45 system's Clinical Support Tools (CSTs) have been specifically designed to offer guidelines for NOT clients. In a meta-analysis, Lambert et al. (2018) found that the odds ratio of deterioration for NOT clients was lower when the therapists used these CSTs than when they used feedback without the CSTs (0.37 vs. 0.61 compared to TAU). Both the feedback and the feedback plus CSTs condition had a significant effect on the number of deteriorated clients for NOT cases, corresponding to ESs of 0.33 and 0.49, respectively (Lambert et al., 2018). Kendrick et al. (2016) included 10 studies in their meta-analysis with information about NOT clients and found that the pre-post ES for the NOT group was larger (0.22) in the feedback group compared to the no-feedback group. The CSTs of the OQ-45 system distinguishes between four different areas of reasons for clients being NOT: social support, motivation, therapeutic alliance, and negative life events (White et al., 2015), while the PCOMS only indicates problems in the therapeutic alliance. Furthermore, the PCOMS produces a relatively high rate of NOT signals (25.7%-81.3%; Østergård et al., 2018), which might diminish the likelihood that the therapists focus on NOT clients, or, which might even demoralize the client and therapist, potentially making them ignore the signal. Finally, the PCOMS's NOT-signal may have low sensitivity (i.e., true positive rate) and specificity (i.e., true negative rate) for client deterioration: Specifically within the present study, the counselors received a NOT-signal for 71.8% of all clients who were deteriorated at post-counseling on the GSI compared to 46.7% of the non-deteriorated clients. The accuracy of the PCOMS in the identification of NOT and client deterioration has not been cross-validated by comparison to other scales (cf. Seidel et al., 2017). In accordance with prior research, the present study found no evidence for an effect of the PCOMS on the reduction of the number of deteriorated clients.

The effect within the PCOMS condition was only tendentially predicted by adherence to the PCOMS. Moreover, that the counselor level explained less than 1% of the variance in outcome does not align with meta-analyses finding the therapist level to account for about 5% of the variance (e.g., Baldwin & Imel, 2013; Johns, Barkham, Kellett, & Saxon, 2018). However, Johns et al. (2018) also found that the therapist effect explained only 2.4% of the variance in the student counseling subsample, and Saxon, Firth, and Barkham (2017) showed that the therapist effect increased with more therapy sessions. Thus, the lack of counselor effect in the present study may be explained by the relatively low number of sessions provided in a student counseling setting. The finding that the effect within the PCOMS condition was larger if clients reported that the feedback was helpful and used actively must be interpreted with caution because clients with a good outcome may, in general, have positive attitudes toward their treatment, which makes the direction of causality uncertain. However, the finding aligns with the PCOMS change theory, highlighting that the client's subjective experience and engagement are critical for the feedback effect. As mentioned in the introduction, several PCOMS studies have discussed the importance of adherence to the PCOMS protocol and therapist factors (Brattland et al., 2018; Davidsen et al., 2017; She et al., 2018). However, none of the previous PCOMS studies has tested for the impact of these variables on the feedback effect.

The organizational context may have affected the implementation of the PCOMS negatively. Thirty out of 31 (96.8%) counselors agreed that ROM, in general, is important; however, only 17 (54.8%) agreed that implementation of the PCOMS in the Student Counseling Service was positive, and six (19.4%) had a negative evaluation. Negative qualitative counselor comments (on the TAP) included that the ORS did not adequately reflect client mental health functioning ($n = 5$), that restriction on the length of treatment made it difficult to utilize the feedback ($n = 2$), or that results would be used by the managers

to evaluate the counselors' competency ($n = 2$). It might be counterproductive to focus on the effectiveness of therapists because it, according to the feedback intervention theory (Kluger & DeNisi, 1996), moves focus away from the task toward self-evaluation, which in turn might create therapist anxiety. Thus, the counselors' comments might indicate some organizational strain on the counselors' use of the PCOMS.

As already mentioned, some organizational changes coincided with the implementation of the PCOMS, thus questioning if the two conditions can truly be compared in this non-randomized design. The organizational changes may explain some of the differences in counseling characteristics found between the PCOMS and the TAU condition (i.e., number and mean days on a waiting list, change of counselor, counselors' year of experience). These differences may have caused the selective dropout detected between session 1 and 2, that is, more clients dropped out in the PCOMS condition, and these dropouts had higher baseline distress (GSI). The effect of this selective dropout is uncertain. Clients with more distress may experience some regression towards the mean but may also be more challenging to help. However, for the ITT sample, no difference in baseline GSI was found between the PCOMS and the TAU condition. Moreover, none of the differences in counseling characteristics (e.g., waiting list) moderated the effect of the PCOMS intervention, maybe because the differences were found *before* the counseling started, which according to the definition of the ITT sample was in session 2.

The average number of 3.9 sessions in the PCOMS condition was smaller than the mean number of sessions of 7.8 in the 18 studies included in the meta-analysis (Østergård et al., 2018). It is also less than the mean of 5.5 (range 3.7 to 7.3) in the four previous student counseling studies (Murphy, Rashleigh, & Timulak, 2012; Reese, Norsworthy, & Rowlands, 2009; She et al., 2018; Slone, Reese, Mathews-Duvall, & Kodet, 2015). The low number of sessions in the Student Counseling Service could have been a hindrance for making

therapeutic changes due to PCOMS feedback and for helping NOT clients. It is notable that 35.9% of the clients, who were NOT when ending counseling, had started or were referred to further treatment outside the Counseling Service. However, the meta-analysis (Østergård et al., 2018) found no association between the number of sessions and the incremental effect of the PCOMS.

The present finding of no incremental effect of the PCOMS differs from prior studies in counseling settings (Østergård et al., 2018). However, all eight previous counseling studies used the ORS as the only outcome measure, and no PCOMS effect was found in the nine studies using independent outcome measures. Recent meta-analyses have found small overall effects of ROM; for instance an insignificant ES of 0.07 in Kendrick et al. (2016) and 0.14 specifically for the OQ-45 system in Lambert et al. (2018). The use of ROM may not in itself be sufficient for producing a better overall outcome. One of the founders of the PCOMS, S. D. Miller, has recently stated that more than ROM is required to achieve an improved therapeutic outcome; concretely, he points to deliberate practice where the therapist set therapeutic goals and uses feedback to benchmark and practice therapeutic skills (Miller et al., 2018). However, the validity of the feedback information of the ROM system has to be established.

Limitations

The major limitation of the study was that clients were not randomized to the TAU and the PCOMS conditions. Although the differences in counseling found between the two conditions did not moderate the PCOMS effect, more subtle differences related to administrative changes in the study period might have played a role in disadvantaging the PCOMS condition. Most of the moderators and predictors were tested with single-item variables or non-validated scales. Adherence to the PCOMS protocol was self-report measured and not judged by independent raters. The ORS was not administered in the TAU

condition, which made it impossible both to identify NOT clients in the TAU condition and to estimate the measure-specific effect between conditions. Moreover, since two sessions were required for inclusion, the analyses were not strictly ITT analyses. However, changing the inclusion criteria to all clients with 1 or more sessions did not change the results of the primary outcome analyses. Finally, the results may be restricted to counseling conditions like those of the Danish Student Counseling Service, although the null result of the present study is in line with findings in other studies of no incremental effect of the PCOMS when assessed with independent outcome measures (Østergård et al., 2018).

Conclusion

The study found no incremental effect of using the PCOMS in a Danish student counseling setting on a general self-report symptom measure (the GSI of the SCL-90-R). The PCOMS seems to have been acceptably implemented, and none of the variables related to adherence to the PCOMS protocol were associated with the effect. Previous studies have found a moderate incremental effect when using the PCOMS in counseling settings, but all these studies used the ORS, most often filled out in the session with the therapist present, as the only outcome measure. In alignment with a previous meta-analysis (Østergård et al., 2018), no effect of the PCOMS was found on the number of clients experiencing deterioration. The PCOMS may not be well-suited for prevention of client deterioration, and a more conclusive evaluation of its incremental therapeutic effects awaits further research with independent outcome measures.

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Table 1. Counseling characteristics ITT sample (at least two sessions)

Characteristics	Individual counseling			Group counseling		
	TAU	PCOMS	<i>p</i>	TAU	PCOMS	<i>p</i>
	(<i>n</i> = 679)	(<i>n</i> = 585)		(<i>n</i> = 61)	(<i>n</i> = 49)	
	<i>M</i> (<i>SD</i>), <i>n</i> (%)	<i>M</i> (<i>SD</i>), <i>n</i> (%)		<i>M</i> (<i>SD</i>), <i>n</i> (%)	<i>M</i> (<i>SD</i>), <i>n</i> (%)	
Center (Copenhagen/Aarhus & Aalborg/Odense)	337/202/140	249/217/118	.014	47/12/2	34/14/1	.527
Mean years of counselor experience	17.30 (9.95)	14.66 (10.54)	<.001	13.93 (8.04)	14.71 (10.27)	.708
Approach (eclectic/CBT/PD/systemic/humanistic)	276/195/117/80/9	226/187/69/49/50	<.001	22/21/16/0/2	15/23/2/6/0	.001
Change of counselor (yes)	109 (16.1%)	147 (25.2%)	<.001	47 (77.0%)	35 (71.4%)	.501
Mean number of total sessions	4.12 (2.46)	3.91 (2.33)	.128	9.30 (4.78)	7.35 (4.54)	.032
Mean number of individual sessions	4.09 (2.36)	3.84 (2.12)	.051	2.30 (1.60)	1.78 (1.03)	.051
Mean number of group sessions	0.03 (0.60)	0.07 (0.83)	.331	7.00 (3.92)	5.57 (4.26)	.071
Waiting list (yes)	185 (27.2%)	220 (37.6%)	<.001	52 (85.2%)	29 (59.2%)	.002
Mean days on waiting list	57.98 (30.25)	83.68 (58.47)	<.001	61.81 (35.57)	54.93 (36.33)	.009
Mean days in counseling	82.87 (74.50)	68.44 (61.54)	<.001	55.98 (35.35)	53.33 (49.87)	.745
Mean days between sessions ^a	27.49 (18.39)	24.97 (19.47)	.019	9.60 (3.13)	13.39 (9.06)	.011
Psychiatric counseling (yes)	29 (4.3%)	27 (4.6%)	.767	3 (4.9%)	3 (6.1%)	.762
Ending of counseling (in agreement/further referred, or started in another treatment /dropout ^b)	393/131/155	321/144/120	.068	48/4/9	30/3/16	.082

Note. ITT = intention to treat, TAU = treatment as usual, PCOMS = Partners for Change Outcome Management System, CBT = cognitive behavioral therapy, PD = psychodynamic psychotherapy.

^aMean days between sessions is calculated as days in counseling (excluding waitlist period) divided by number of sessions minus 1.

^bDropout is defined as the client ending counseling by cancellation or failing to appear.

Table 2. Sample characteristics for the ITT sample and dropout analyses

	TAU (<i>n</i> = 740)	PCOMS (<i>n</i> = 634)	<i>p</i>	ITT total sample (<i>n</i> = 1374)	Dropout or ending before session 2 (<i>n</i> = 1018) ^a	<i>p</i>
Characteristics	<i>M</i> (<i>SD</i>) or <i>n</i> (%)	<i>M</i> (<i>SD</i>) or <i>n</i> (%)		<i>M</i> (<i>SD</i>) or <i>n</i> (%)	<i>M</i> (<i>SD</i>) or <i>n</i> (%)	
Age (years)	25.19 (4.57)	25.30 (4.73)	.660	25.24 (4.64)	25.25 (4.42)	.952
Gender (women)	555 (75.0%)	464 (73.2%)	.444	1019 (74.2%)	718 (70.5%)	.049
Study duration (semester)	4.87 (3.03)	4.74 (3.05)	.451	4.81 (3.04)	4.39 (3.08)	.001
Academically doing poorly or very poorly	96 (13.0%)	121 (19.1%)	.002	217 (15.8%)	170 (16.7%)	.552
Socially doing poorly or very poorly	137 (18.5%)	149 (23.5%)	.023	286 (20.8%)	242 (23.8%)	.085
Delayed in their study ^b	219 (36.2%)	183 (28.9%)	.006	402 (32.4%)	290 (32.7%)	.890
Considering study dropout ^b	118 (19.4%)	157 (24.8%)	.022	275 (22.1%)	297 (31.5%)	< .001
GSI	1.33 (0.57)	1.34 (0.56)	.582	1.33 (0.57)	1.37 (0.59)	.167
Clinical cases on GSI	591 (79.9%)	519 (81.9%)	.349	1110 (80.8%)	821 (80.6%)	.933

Note. ITT = intention to treat, TAU = treatment as usual, PCOMS = Partners for Change Outcome Management System, *p* = probability independent sample *t*-tests and chi-square tests of differences between the TAU and PCOMS condition and the analyzed and the excluded participants. GSI = Global Severity Index. Clinical cases are based on Jacobson and Truax's (1991) criteria.

^aAll with valid pre-counseling measures (and less than 2 sessions) were included. ^b*n* = 605 in the TAU condition and *n* = 634 in the PCOMS condition. ^b*n* = 609 in the TAU condition and *n* = 634 in the PCOMS condition. The lower *n* in a. and b. is due to exclusion of "do not know" answers.

Table 3. Outcome and effect sizes

Outcome	Pre-counseling		Post-counseling		Pre-post-counseling		
	TAU (n ind = 679, n gr = 61)	PCOMS (n ind = 585, n gr = 49)	TAU (n ind = 480, n gr = 51)	PCOMS (n ind = 492, n gr = 40)	TAU (n ind = 480, n gr = 51)	PCOMS (n ind= 492, n gr = 40)	Time x condition interaction (n ind = 1263, n gr = 110)
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	Cohen's <i>d</i>	Cohen's <i>d</i>	Cohen's <i>d</i>
GSI, ind	1.33 (0.58)	1.35 (0.57)	0.89 (0.59)	0.90 (0.62)	0.81	0.78	0.01
GSI, gr	1.30 (0.51)	1.31 (0.48)	1.13 (0.61)	1.00 (0.52)	0.32	0.59	0.21
ORS, ind		17.96 ^a (6.82)		27.04 ^b (8.44)		1.05 ^c	
ORS, gr		19.22 ^a (6.05)		26.41 ^b (6.86)		0.99 ^c	

Note. TAU = treatment as usual, PCOMS = Partners for Change Outcome Management System, GSI = Global Severity Index, ind = individual counseling, gr = group counseling, ORS = Outcome Rating Scale.

^an ind = 562, n gr = 46. ^bn ind = 537, n gr = 37. ^cn ind = 537, n gr = 37

Table 4. The number of clients experiencing change

RCI	TAU	PCOMS	
	GSI (<i>n</i> ind = 480, <i>n</i> gr = 51)	GSI (<i>n</i> ind = 492, <i>n</i> gr = 40)	ORS (<i>n</i> ind = 537, <i>n</i> gr = 37)
Improved reliable, ind	316 (65.8%)	331 (67.3%)	365 (68.0%)
Improved reliable, gr	26 (51.0%)	25 (62.5%)	24 (64.9%)
Recovered ^a , ind	271 (70.2%)	290 (72.5%)	334 (72.1%)
Recovered ^a , gr	24 (55.8%)	23 (65.7%)	23 (69.7%)
Deteriorated, ind	53 (11.0%)	58 (11.8%)	28 (5.2%)
Deteriorated, gr	13 (25.5%)	7 (17.5%)	1 (2.7%)
No change, ind	111 (23.1%)	103 (24.9%)	144 (26.8%)
No change gr	12 (23.5%)	8 (20.0%)	12 (32.4%)

Note. TAU = treatment as usual, PCOMS = Partners for Change Outcome Management System, GSI = Global Severity Index. ORS = Outcome Rating Scale, ind = individual counseling, gr = group counseling, RCI = reliable change index

^aOnly clients with pre-counseling GSI score above the clinical cut-off was included in the calculation

* $p < .05$, ** $p < .01$, *** $p < .001$ are p -values for the Chi-square tests of differences between the TAU and the PCOMS condition.

Figure 1. Participant flow. The figure includes the reason for ending counseling at each step of exclusion. TAU = treatment as usual, ITT = intention to treat, PCOMS = Partners for Change Outcome Management System.