Depression Monitoring and Patient Behavior in the Clinical Outcomes in MEasurement-Based Treatment (COMET) Trial

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Objective: **In this secondary analysis of results of the Clinical Outcomes in MEasurement-Based Treatment (COMET) trial, patient behaviors that might account for the differences observed in clinical outcomes were examined.** ***Methods:*** **Patients (N=914) diagnosed as having major depressive disorder participated in telephone interviews either monthly for six months (intervention) or at three and six months (usual care) asking about antidepressant medication–taking, use of psychotherapy or counseling, and participation in depression support groups. Physicians (N=83) in the intervention arm received monthly feedback regarding their patients' depression severity.** ***Results:*** **A total of 664 (73%) patients completed the month 6 interview. The adjusted odds of current antidepressant use at six months were 85% greater (p=.01) for patients in the intervention (N=380) versus usual care (N=284) arms, according to multivariate regression analyses.** ***Conclusions:*** **More frequent measurement of depression symptoms was associated with greater medication persistence, which in turn may have mediated clinical improvements. (*Psychiatric Services* 65:1058–1061, 2014; doi: 10.1176/appi.ps.201300326)**

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The Clinical Outcomes in MEasurement-based Treatment (COMET) trial was designed to prospectively assess whether communicating the results of a patient-reported depression rating instrument to physicians affected outcomes of patients who had been diagnosed as having major depression and who were currently receiving treatment for the disorder in a primary care setting (1,2). Patients of physicians who received regular updates on the patients' depression severity were twice as likely to respond to treatment and were 60% more likely to experience remission of symptoms within six months (1).

Possible explanations for the differences in clinical outcomes between the study arms include differences in management practices, such as modifying antidepressant prescriptions in response to the information received, and differences in patient behaviors, such as adherence. Our previous analysis suggested that the physicians who received feedback were not more likely to adjust therapy than those who did not receive feedback, even when the feedback indicated that the patient was not responding adequately to their current treatment (2). This study explored the association between the COMET intervention and patient behaviors that could influence outcomes.

Methods

COMET methods have been described previously (1). Briefly, primary care physicians screened consecutive patients with depression in their practice for eligibility from May 2009 through February 2010. Eligible patients were adults who were diagnosed as having major depressive disorder and who were newly prescribed an antidepressant medication (no antidepressant use in the previous 120 days). The patients' depression care was managed by the primary care physician.

The study protocol was approved by a central institutional review board. After complete description of the study at the enrollment visit, written informed consent was obtained from participants. The study was conducted in accordance

with the principles of the Declaration of Helsinki, HIPAA (3), and Good Epidemiology Practices (4).

Primary care sites were alternately assigned to the usual care or intervention arm (cluster randomization). Patients in the intervention arm completed the nine-item Patient Health Questionnaire (PHQ-9) (5) by telephone interview each month for six months, and the results were faxed to their physicians. Patients in the usual care arm completed telephone interviews at three and six months postenrollment, and the results were sent to their physicians only at six months.

We explored whether indicators of patient behavior (primary care office visits, antidepressant medication–taking behavior, and participation in support groups or psychotherapy or counseling) could be related to patient outcomes. For each patient, the number of office visits (all cause or depression related) during the follow-up period was collected from electronic case report forms completed by the physicians at six months.

During the three- and six-month interviews, patients in both study arms were asked about their use of medication with questions adapted from the Morisky Medication Adherence Scale (6), including whether they were currently taking their antidepressant medication, how often they forgot to take their medication in the past four weeks, and how often they had not taken their medication in the past four weeks because they were feeling better. Recent psychotherapy or counseling and support group participation were ascertained with the questions "Over the past three months, have you received counseling or psychotherapy to help treat your depression?" and "Over the past three months, have you participated in depression support groups to help treat your depression?"

Only patients who completed the telephone survey at both three and six months were included in the analysis. Study arms were compared by using t tests or chi square tests, and multivariate regression was used to determine the effect of study arm on patient behaviors. Regression models were adjusted for baseline demographic and clinical characteristics. Due to study arm assignment by site, all comparisons were adjusted for patient clustering.

Results

A total of 83 primary care physicians recruited 914 patients (N=411, usual care arm; N=503, intervention arm). The demographic characteristics of patients in the COMET trial have been described previously (1). At six months, 664 patients (73%) completed the telephone interview (N=284, usual care arm; N=380, intervention arm).

The number of office visits during the six-month follow-up period did not differ significantly among patients in the intervention and usual care arms (all cause, 3.0±2.0 versus 2.9±2.3 visits; depression related, 2.3±1.5 versus 2.0± 1.6 visits). Study arm remained a nonsignificant contributor to the number of all-cause and depression-related office visits after adjustment for baseline clinical and demographic characteristics.

At six months, 79% of patients in the intervention arm and 67% of patients in the usual care arm reported that they were currently taking antidepressant medication ($p<.01$). Multivariate-adjusted analyses indicated that the odds of currently taking antidepressant medication were significantly greater for the intervention cohort than for the usual care cohort at three and six months (Table 1), but the chance of forgetting to take the medication at least once or of not taking it at least once in response to feeling better did not differ significantly between the study cohorts.

Approximately 3% of patients in the intervention arm and 2% of patients in the usual care arm had participated in depression support groups at baseline. During follow-up, odds of support group participation were significantly greater among intervention group patients, but overall participation was low (Table 1).

Use of psychotherapy or counseling did not differ significantly between the intervention and usual care arms at baseline (13% versus 14%), three months (14% versus 16%) or six months (each 10%).

Discussion

Previously, we reported that after adjustment for sociodemographic factors, patients in the intervention arm of the COMET trial had greater odds of remission and response than patients in usual care (1). Although the COMET intervention (providing physicians with monthly feedback on their patients' depression severity) was expected to affect management practices and thereby improve response rates, physician prescribing patterns did not fully account for the differences in outcomes (1,2).

The current analysis suggests that patient monitoring may have played a role in the observed outcomes, perhaps related to the more frequent interviews of patients in the intervention arm. Specifically, patients in the intervention arm, who were interviewed monthly, were more likely to report currently taking antidepressant medication than patients in the usual care arm, who were interviewed twice during the six-month follow-up period. Other studies have linked treatment persistence with favorable outcomes among patients with depression (7). However, it is also possible that perceiving symptomatic improvement early in the study led patients in the intervention arm to exhibit sustained improvements in medication-taking behavior at three and six months. Although patients in the intervention arm also were more likely than patients in usual care to report participating in depression support groups, the low participation rate suggests that attendance at these groups may be a less likely contributor to the observed patient outcomes.

The COMET trial results suggest that more widespread use of systematic symptom measurement in primary care practice may benefit patients with depression. However, whether participation in the intervention arm independently influenced patient response and persistence or whether medication persistence mediated an effect on patient response is unknown.

Examining the effect of the intervention on patient behaviors was not a primary goal of the COMET trial. Thus although these post hoc analyses employed the available data to evaluate associations between intervention arm assignment and patient behaviors, the direct effect of variables such as persistence on patient outcomes was not assessed. Participating in symptom measurement might have had a direct effect on patient outcomes by providing support, offering additional provider contacts, or otherwise acting as a brief form of psychotherapy and opportunity for human interaction.

Table 1

Multivariate analysis of the effect of usual care and the COMET intervention on medication-taking behavior and other depression-treatment variables at 3- and 6-month follow-ups[a]

	3 months											6 months										
	Usual care (N=284)			Intervention (N=380)				Multivariate regression[b]				Usual care (N=284)			Intervention (N=380)				Multivariate regression[b]			
Variable	Total N	N	%	Total N	N	%	p[c]	N[d]	Odds ratio	95% CI	p	Total N	N	%	Total N	N	%	p[c]	N[d]	Odds ratio	95% CI	p
Medication-taking behavior																						
Currently taking (reference: not taking)	254	197	78	362	300	83	.17	547	1.69	1.14–2.52	.01	284	189	67	380	299	79	.004	514	1.85	1.15–2.97	.01
Never forgot to take in past 4 weeks (reference: forgot ≥1 times)	196	91	46	300	142	47	.84	439	.92	.62–1.36	.66	188	92	49	299	153	51	.60	380	1.20	.77–1.88	.42
Never missed medication in last 4 weeks in response to feeling better (reference: missed ≥1 doses)	197	170	86	300	258	86	.93	440	1.23	.66–2.29	.51	189	164	87	299	250	84	.38	380	1.05	.61–1.81	.85
Counseling or psychotherapy for depression	255	41	16	361	49	14	.44					283	28	10	380	39	10	.90				
Depression support group participation (reference: none)[e]	255	1	<1	361	15	4	.001					284	3	1	380	17	5	.006	483	2.69	1.25–5.83	.01

[a] COMET, Clinical Outcomes in MEasurement-Based Treatment

[b] The analysis adjusted for age at enrollment (<65 or ≥65), gender, marital status, insurance status, employment status (full-time or not), race (black or African American or white), ethnicity (Hispanic/Latino or not), presence of anxiety disorder, chronic pain disorder or other comorbidity, and baseline Patient Health Questionnaire–9 depression score category (mild, moderate, or moderately severe compared with severe).

[c] Chi square test

[d] Participants with missing baseline data for demographic or clinical characteristics or follow-up data were excluded from the multivariate analyses.

[e] The multivariate analyses for the six-month follow-up combined results from the 3- and 6-month follow-ups.

Telephone interviews might have acted as reminders or motivation to improve antidepressant persistence. Future research should include mediation analyses to determine whether changes in patient behavior such as medication persistence mediated better outcomes.

Conclusions

More frequent depression severity monitoring for patients in the COMET intervention arm was associated with improved medication-taking behavior. Improved clinical outcomes may have been mediated by greater depression monitoring, better persistence with medication, other unmeasured changes in patient behavior, or a combination of these and other factors. Further study of systematic symptom measurement in primary care depression treatment, with particular attention to medication persistence and the direct effects of frequent contact, may help develop steps that can be integrated into depression management to improve patient outcomes in the primary care setting.

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